



## Monitoring and evaluation: Adaptation of information technology utilization in school library

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### ABSTRACT

*This article discusses the presence of information technology and the demand for libraries to adapt it to their operational activities, including services for users. The purpose of this study was to find out how far the utilization of information technology in the SMAN 2 Cimahi Library, both for library operational activities, for assisting the librarians' work, as well as to find out the availability of facilities and services related to information technology for the library users. This research was conducted based on the reasons why monitoring and evaluation activities need to be carried out so that the library is able to know how successful its program performance is and to find out the follow-up actions and decisions that need to be made. The researcher used observation and interview methods with a descriptive qualitative approach. Based on the research activities, it is known that the SMAN 2 Cimahi Library has tried to adapt various kinds of information technology well to provide maximum service to the users and help librarians in doing their work. This is portrayed by the availability and utilization of various information technology devices such as computers, internet access, barcodes, automation software, and even availability of televisions and multimedia areas.*

### ARTICLE INFO

#### Article History:

Received: 20 Sep 2024

Revised: 19 Dec 2024

Accepted: 23 Dec 2024

Available online: 29 Dec 2024

Publish: 30 Dec 2024

#### Keyword:

information technology; learning resources; library; technology adaptation; users

#### Open access

Hipkin Journal of Educational Research is a peer-reviewed open-access journal.

### ABSTRAK

Artikel ini membahas tentang kehadiran teknologi informasi serta tuntutan bagi perpustakaan untuk mengadaptasinya dalam kegiatan operasional termasuk dalam pelayanan kepada pemustaka. Tujuan dari penelitian ini adalah untuk mengetahui sejauh mana pemanfaatan teknologi informasi di Perpustakaan SMAN 2 Cimahi, baik itu untuk kegiatan operasional perpustakaan maupun pemanfaatannya untuk membantu pekerjaan pustakawan, serta untuk mengetahui sejauh mana ketersediaan fasilitas dan layanan yang berkaitan dengan teknologi informasi untuk para pemustaka. Penelitian ini dilakukan berdasarkan alasan mengapa kegiatan monitoring dan evaluasi perlu dilaksanakan, sehingga perpustakaan dapat mengetahui sejauh mana keberhasilan pelaksanaan programnya serta mengetahui tindak lanjut serta keputusan yang perlu dibuat. Metode yang digunakan dalam penelitian ini adalah metode observasi dan wawancara dengan pendekatan kualitatif deskriptif. Berdasarkan kegiatan penelitian, diketahui bahwasannya Perpustakaan SMAN 2 Cimahi sudah berupaya mengadaptasi berbagai macam teknologi informasi dengan baik untuk memberikan pelayanan yang maksimal terhadap para pemustaka serta membantu pustakawan dalam melakukan pekerjaannya. Hal tersebut tergambar dari ketersediaan dan pemanfaatan berbagai perangkat teknologi informasi seperti komputer, akses internet, barcode, perangkat lunak otomatisasi, bahkan ketersediaan televisi dan area multimedia.

**Kata Kunci:** adaptasi teknologi; pemustaka; perpustakaan; sumber belajar; teknologi informasi

### How to cite (APA 7)

Rahman, F. A., Susilana, R. (2024). Monitoring and evaluation: Adaptation of information technology utilization in school library. *Hipkin Journal of Educational Research*, 1(3), 337-350.

### Peer review

This article has been peer-reviewed through the journal's standard double-blind peer review, where both the reviewers and authors are anonymised during review.



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## INTRODUCTION

Over time, numerous changes and developments have occurred across various sectors of human life, particularly in information and communication technology. Today, each individual has diverse information needs, which can vary significantly from person to person. Advances in information technology can increase society's demand for information (Aral *et al.*, 2012; Farhadi & Ismail, 2014). This should be a primary concern for information institutions to consistently meet the information needs of the public. Additionally, information technology is now utilized to enhance the effectiveness and efficiency of work, a process known as digital transformation, which involves changing the way tasks are handled through the use of information technology (Danuri, 2019). Effective school administration must consider various needs within the institution, including the provision of information through libraries (Fauziah *et al.*, 2024). This also encompasses the role of libraries, which are expected to continuously evolve and adapt to current conditions to provide the best possible services to their users.

In this context, libraries must continually strive to evolve and adapt to the rapidly advancing field of information technology. One approach libraries can take is to integrate technology into their operational activities. Libraries that implement information technology systems can enhance various functions, including service delivery, making them more effective and efficient for users (Rahmawati, 2018). The utilization of information technology in libraries also exemplifies one of Ranganathan's five laws of library science: "A Library is a Growing Organism," which implies that libraries will continue to grow and develop alongside technological advancements, supported by effective management (Rohana & Adryawin, 2019). To date, automation technologies and the presence of OPACs represent typical examples of technology use in libraries. In the future, libraries will continue to have opportunities to develop further and adopt other technological innovations. Therefore, it is understood that it has become essential for libraries to adapt information technology, particularly to enhance services for users. However, one of the challenges faced by modern libraries is integrating information technology with existing collections to ensure easy accessibility (Silvianty & Inawati, 2024). Consequently, it is also important to recognize that regular monitoring and evaluation activities should accompany the adaptation and implementation of information technology in libraries over a specified period.

Monitoring and evaluation are activities related to overseeing a project and assessing its impacts to understand its progress and evaluate the success and performance of the project. Several previous studies have examined monitoring and evaluation in relation to services. Suparno and Asmawati, in their study titled "Monitoring and Evaluation for Enhancing Academic Services and Lecturer Performance in the Postgraduate Learning Technology Program," explained that monitoring and evaluation are necessary to measure performance and institutional improvement efforts, encompassing quality achievement as well as ensuring the continuity of performance and development in the future (Suparno & Asmawati, 2019). Another study, "Monitoring and Evaluation for Improving Academic Service and Teacher Performance," argued that monitoring involves collecting and analyzing information about a program or activity, enabling comprehensive, systematic, and structured evaluation to achieve the desired goal of continuous improvement (Surbakti & Purba, 2024). Based on these explanations, the authors believe that libraries also need to conduct monitoring and evaluation of their services, particularly those related to the utilization of information and communication technology. This is done to determine whether the use of information technology in the library is proceeding according to plan and to identify any obstacles in its implementation (Nasihi & Hapsari, 2022).

Based on the author's initial observations, the library at SMAN 2 Cimahi is one of the libraries that has effectively adapted and implemented information technology in its operational activities, including the provision of services to its users. It is essential to conduct monitoring and evaluation of services related to information technology at the SMAN 2 Cimahi Library to determine the extent to which the library has

integrated information technology into its operations and service delivery. Furthermore, monitoring and evaluation activities are necessary to identify obstacles and areas that require improvement in services related to the adaptation and utilization of information technology at the SMAN 2 Cimahi Library, ultimately providing a basis for informed decisions regarding service enhancements. Therefore, the general objective of this article is to assess the availability of services and facilities related to the use of information technology at the SMAN 2 Cimahi Library. Additionally, this article presents the results of monitoring and evaluation activities at the library, specifically regarding facilities related to information technology in service provision and meeting the information needs of its users.

## LITERATURE REVIEW

### School Library

One of the essential teaching and learning facilities that must be present in schools is the library. As a center for learning resources, a school library should have complete and adequate facilities and collections to support the teaching and learning needs of students and teachers (Minawati, 2021). School libraries also play a role in developing students' interests, talents, and hobbies, as well as fostering the habit of seeking information to expand their knowledge and understanding (Apriyani *et al.*, 2021). In addition to providing print and non-print collections, school libraries can serve as spaces for learning, research, and collaboration for the entire school community (Munawaroh *et al.*, 2024). In the future, libraries are expected to shift from being mere "collection warehouses" to becoming collaborative spaces with fewer physical collections (Palmer, 2022). states that the future library will achieve its goals through four key elements: technology, collaboration, physical space, and human resources. The effective utilization of school libraries requires support from the entire school community, including principals, teachers, and educational staff, particularly librarians (Komara & Hadiapurwa, 2023). Qualified librarians and effective library management are essential for providing the necessary facilities for users, ensuring optimal library utilization.

### Technology and Information Facilities in the Library

One effort to optimize the role of a school library is by providing various types of services that allow users to access the information they need. Services related to information technology can offer users convenience and quick access time when conducting information searches (Artana, 2019). Information technology, as a concept, encompasses computers, information equipment, and computer software (Hotimah *et al.*, 2022). One adaptation of libraries to the presence of technology and information is the introduction of digital collections, automation activities, and the availability of skilled personnel capable of operating electronic devices such as computers and conducting digital information searches (Nurhayati, 2018).

Furthermore, the implementation and presence of information technology facilities in libraries also include services such as borrowing and returning books using barcodes, utilizing databases, multimedia/audio-visual services, internet access, and computer stations. The use of software like the Senayan Library Management System (SLiMS) is also a library automation system that assists in operational activities, including circulation, OPAC, member management, and collection management (Amhar, 2019). Based on this, it is evident that school libraries are a crucial learning resource and an essential facility supporting teaching and learning activities. Information technology facilities in school libraries involve not only specific equipment but also require librarians who are skilled in operating information technology devices. The use of software and the presence of various information technology facilities that support the fulfillment of users' information needs are necessary and must be carefully considered.

## Library Monitoring and Evaluation

Monitoring and evaluation activities constitute a series of interconnected processes. Monitoring activities are typically conducted during the implementation of a program, whereas evaluation is usually carried out at the conclusion of the program. Monitoring can be understood as a systematic and continuous activity that involves recording and collecting information regarding the execution of a specific project within a designated period. Furthermore, the purpose of monitoring is to observe and track the progress of ongoing work (Wijaya, 2018). Monitoring is also defined as a supervisory action that includes checking and comparing the results achieved with established standards (Monaliza *et al.*, 2017). The objectives of monitoring activities include gathering information to understand the reasons behind specific outcomes or situations, as well as providing feedback to policymakers regarding the effectiveness of a program or initiative (Al-Okaily *et al.*, 2023).

Evaluation is a stage closely linked to monitoring activities, in which the data collected through monitoring are used to determine the extent to which the program's objectives have been achieved (Jaya *et al.*, 2018). The results from monitoring are systematically processed to generate new information that supports decision-making regarding a specific program (Wijaya, 2018). Evaluation is a process conducted to assess the success of a program's implementation. Within the scope of libraries, evaluation activities can be associated with assessing the extent to which the library's mission and objectives have been fulfilled, which includes planning for collection development, acquisition, processing, and services provided to library users (Ardiansah *et al.*, 2022). Naturally, monitoring and evaluation activities are essential for libraries; through their implementation, a library can determine how well its objectives are being met and identify shortcomings in each activity, particularly concerning services and the provision of facilities related to the utilization of information technology..

## METHODS

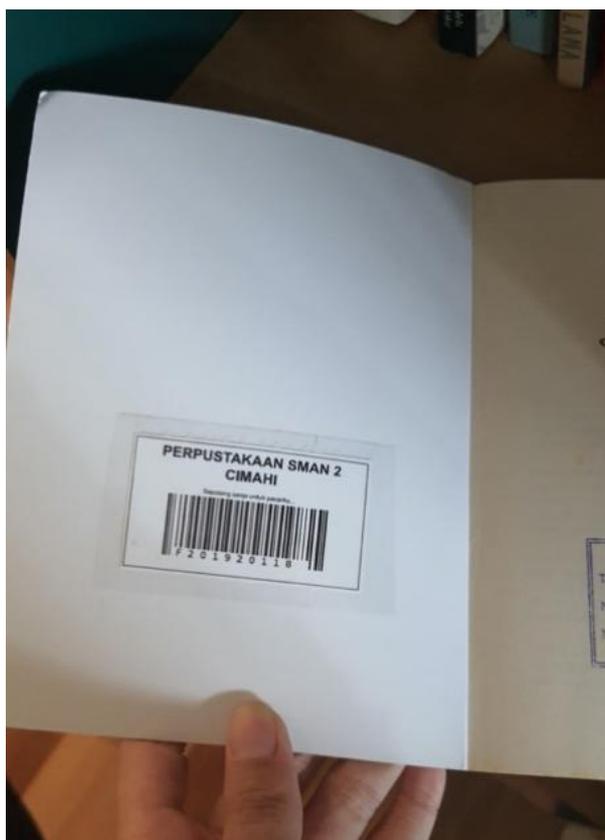
The data collection methods used in this study were observation and interviews with a descriptive qualitative research approach, conducted through direct observation at the library and interviews with librarians at SMAN 2 Cimahi Library. The author conducted the observation to observe and participate in the social interactions that resulted from the activities. Interviews were also conducted during the observation process to gather information and obtain direct responses from the informants. Both observation and interviews were conducted offline, carefully identifying each aspect of services and the availability of various facilities at SMAN 2 Cimahi Library based on the evaluation checklist and instruments for Senior High School Libraries, developed with reference to the Regulation of the Head of the National Library of the Republic of Indonesia Number 12 of 2017 concerning the National Standards for Senior High School/Madrasah Aliyah Libraries. Additionally, the author collected documentation to serve as supporting evidence, including photographs of the software and hardware used to implement library automation, as well as images of the library area. The data gathered through observation, interviews, and documentation were then analyzed and presented descriptively to be incorporated into a systematic discussion, conclusions, and results.

## RESULTS AND DISCUSSION

The following presents the results and discussion of the monitoring and evaluation activities at SMAN 2 Cimahi Library. This section will specifically discuss the findings of the monitoring and evaluation concerning the availability of services and facilities related to the utilization of information technology at SMAN 2 Cimahi Library.

### The Utilization of Information Technology in Library Operational Activities

Several research questions regarding the availability and utilization of information technology were posed to the librarians, while others were addressed through information-gathering activities. These questions included the availability of computers and desks for administrative purposes, the size of the collection, and the use of software to manage the database and collections. Based on the monitoring and evaluation activities conducted, it was found that the SMAN 2 Cimahi Library has actively adapted to and utilized information technology in its operational activities. In administration and collection management, the library already employs a barcode system (see **Figure 1**). Additionally, the library's processing section is equipped with workstations furnished with information technology devices, including computers, printers, scanners, and barcode scanners, to support its operations.



**Figure 1.** Use of Barcodes in the Collection  
*Source: Author Documentation*

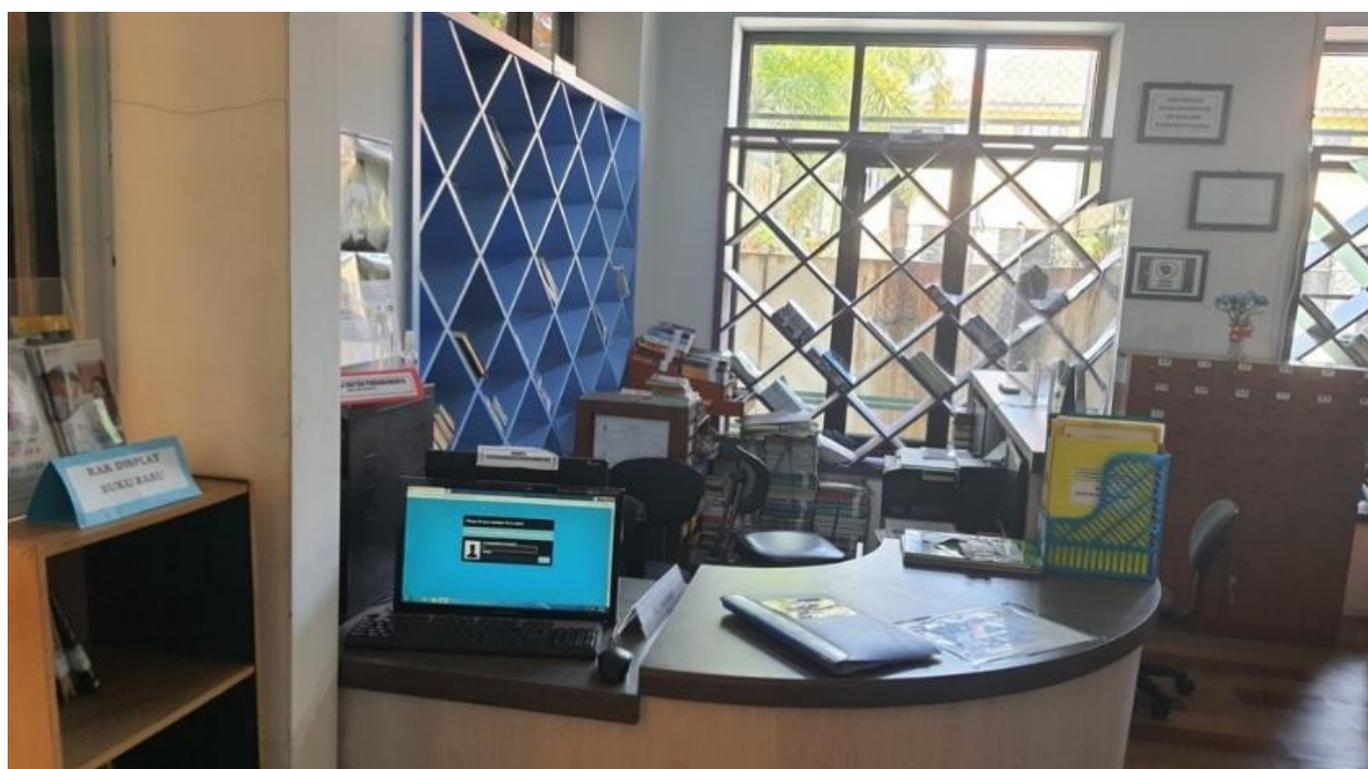
Regarding the number of collections, the librarian at SMAN 2 Cimahi Library, Mrs. Taswi Widiawati, S.I.Pust, stated that,

*“Kegiatan input data ke dalam aplikasi dilakukan secara bertahap, karena faktor kurangnya sumber daya manusia. Untuk judul yang sudah masuk itu ada 2.457 judul dengan total eksemplar 8.735 tanpa buku paket. Database pakai SLiMS, tapi belum diupdate dari 2010 versi 3. Soalnya, jujur, untuk teknis IT Ibu angkat tangan. Dulu ada alumni (yang bantu) tapi sekarang tidak ada yang bantu. Sempat bertanya (apakah) bisa diupdate atau tidak, ternyata bisa, tapi takut datanya hilang karena ada beberapa fitur baru. Jadi, selama masih bisa dipakai, ya dipakai saja. Penggunaannya pun masih meraba-raba,”*

Based on this, it is evident that the utilization of information technology in the form of the SLiMS automation software has not been maximized, facing obstacles, particularly due to a lack of skilled human resources and librarians who do not yet possess comprehensive knowledge of the SLiMS automation software.

The adaptation of information technology in libraries requires the presence of skilled personnel capable of operating library automation systems and conducting digital information searches. Indeed, technology adaptation is a primary concern, as the use of information technology in library operations is essential to alleviate librarians' workload and enhance service performance (McGeary *et al.*, 2021). Ultimately, librarians must adapt to technological developments by developing their competencies and embracing the digital world (Maharani & Hadiapurwa, 2023; Zein *et al.*, 2023). This will enable librarians to work more efficiently and effectively (Mulyadi *et al.*, 2019). Another effort that can be undertaken is through training activities to ensure that librarians' skills and knowledge remain up-to-date, given that the advancement of information technology in libraries comes with high competency demands in its management (Arya *et al.*, 2024; Makmur, 2019). However, librarians cannot work in isolation; support from the school community, such as principals and other stakeholders, is also needed to facilitate librarians in enhancing their competencies (Komara & Hadiapurwa, 2023).

Based on this, to optimize the utilization of information technology in the operational and administrative activities of SMAN 2 Cimahi Library, human resources also need to be considered, as they play a crucial role in operating each device used for library management and providing optimal services to library users (Figure 2).



**Figure 2.** Librarian Workstations and Service Desks

*Source: Author's Documentation*

Furthermore, in its operational activities, the SMAN 2 Cimahi Library already has a digital collection and a digital catalog, or OPAC, available. Regarding the availability of the digital catalog, Ms. Taswi explained that,

*“Kalau disini kan udah otomatis ada OPAC-nya,”*

In this regard, the SMAN 2 Cimahi Library can also be said to have collections that extend beyond physical books, namely digital collections, although these are still limited in number. The library has made efforts to acquire more digital collections; however, librarians reported that they have not yet found vendors that meet the school's needs. There are several other considerations regarding the procurement of digital

collections for the SMAN 2 Cimahi Library. Additionally, the library utilizes available information technology in its promotional activities, conducting promotions through digital media.

### **Availability of Information Technology Services and Facilities in the Library**

In this regard, the SMAN 2 Cimahi Library can also be said to have collections that extend beyond physical books, namely digital collections, although these are still limited in number. The library has made efforts to acquire more digital collections; however, librarians reported that they have not yet found vendors that meet the school's needs. There are several other considerations regarding the procurement of digital collections for the SMAN 2 Cimahi Library. Additionally, the library utilizes available information technology in its promotional activities, conducting promotions through digital media.

Regarding the availability of digital collections and digital catalogs, Ms. Taswi stated,

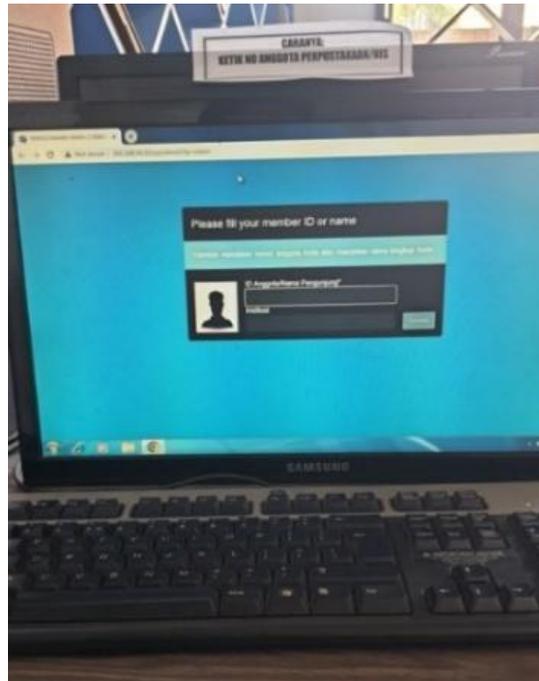
*“Siswa lebih memilih koleksi fisik daripada e-book. Berkaitan dengan ketersediaan katalog digital kalau disini ‘kan sudah otomatis ada OPAC-nya, tapi kadang anak-anak tetap ingin yang instan. (Mereka) bertanya ke Ibu, ‘Ada buku ini?’, pasti Ibu yang carikan. OPAC dapat diakses oleh siswa kalau ada tempatnya. Memang biasanya ditempatkan sekalian saja di komputer, tapi ‘kan anak susah, ya, kalau harus dijelaskan satu-satu. Anak-anak mah inginnya langsung ditunjukkan (bukunya),”*

The phenomenon of many students still being reluctant to search for and utilize the OPAC has become a particular concern for the author. This may be due to insufficient knowledge regarding the use of library collections and facilities (user education) or inadequate information literacy services. User education activities are essential for instilling understanding that prepares students mentally and equips them with knowledge within the scope of library utilization, including providing guidance, instructions, or consultations (Triwijaya, 2018). Through user education, library users gain at least a basic understanding of how to utilize the various facilities available in the library, including the OPAC, which helps them locate the collections they need.

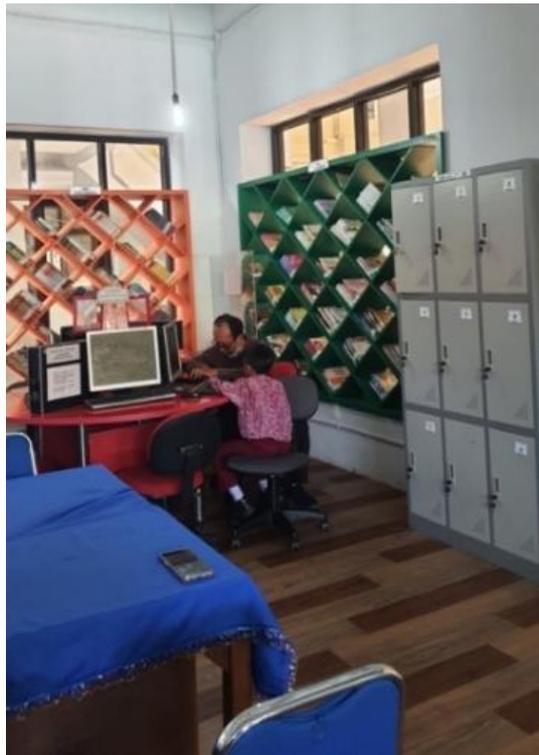
In addition, Ms. Taswi stated that,

*“Koleksi digital ada sebagian. Namun, (saya) mengunduh yang gratis-gratis. Kemarin sempat mengajukan, tapi vendor yang menawarkan itu terbatas. Hanya dari satu penerbit, tidak beragam. Jadi depending dulu,”*

In addition to the considerable costs involved, SMAN 2 Cimahi Library has also postponed the procurement and development of digital collections because students are less interested in digital collections such as e-books, and a suitable digital content vendor that meets the school's needs has not yet been found. In fact, the implementation of information technology in the library can serve as a means to store, acquire, and disseminate information and knowledge in digital format (Kurniawan *et al.*, 2020).



**Figure 3.** Visitor Data Computer  
*Source: Author Documentation*



**Figure 4.** Multimedia Area  
*Source: Author Documentation*

SMAN 2 Cimahi Library also provides dedicated computers for patrons to enter visitor data independently (**Figure 3**). In addition, the library features a multimedia area for patrons (**Figure 4**). This area is equipped with computers, desks, chairs, and internet access. The round-table setup allows patrons to engage in discussions and collaborate simultaneously. The library is envisioned as a collaborative space supported by technology (Palmer, 2022).

Not all available computers are fully functional for patrons due to issues with the cables connecting them to the internet. This is regrettable, considering that computers are a key application of information technology in libraries, offering numerous benefits, especially for patrons. The advantages of using information technology include speed, consistency, accuracy, and reliability. Specifically, computers perform tasks much faster than humans (speed), process data in a standardized and uniform manner (consistency), execute commands with high precision (accuracy), and produce results that are more trustworthy with fewer errors (reliability). Proper utilization of information technology, particularly computers, can thus provide patrons with greater ease and efficiency in conducting information searches (Artana, 2019).

The SMAN 2 Cimahi Library has also provided media equipment, including a television (Figure 6), security devices such as CCTV, and internet access. The television installed in the library is sufficiently large to be visible to anyone in the reading area. Its presence can support promotional activities by displaying various information and also serve a recreational function for patrons through the content shown. The CCTV system is installed to ensure a safe environment for library users and to enable librarians to monitor the library's conditions effectively.



**Figure 6.** Television in SMAN 2 Cimahi Library  
*Source: Author's Documentation, 2023*

Internet access is also available at the SMAN 2 Cimahi Library. Patrons can connect their devices to the available internet with assistance from the librarians. Those inside or around the library can access this internet service. The availability of the internet in the library facilitates the retrieval of information. This access serves as a medium and platform for knowledge acquisition. Moreover, searching for information on the internet provides convenience. It has a positive impact on library users, enabling them to quickly and accurately find various types of information, without spatial or temporal limitations (Wibawanto, 2018). Based on this, the presence of internet access and services in the library is an essential aspect, reflecting the adaptation and utilization of information technology in libraries. Through the availability of various IT

facilities and services, patrons can efficiently conduct information searches to fulfill their informational needs.

The library is one of the learning resources that plays a strategic role in supporting the learning process and knowledge development for its users through the availability of comprehensive collections and facilities, as well as easy access to information in both physical and digital forms. As a learning resource, the library can serve as a literacy center that is adaptive to the development of information and communication technology (Hardhienata *et al.*, 2021). Modern libraries today function not only as places for reading and borrowing books but also as information centers providing various technology-based facilities, such as online catalogs (OPAC), digital collections, and multimedia devices, enabling users to access information quickly and efficiently, supporting collaboration, and developing digital skills relevant to contemporary needs (Kumar *et al.*, 2024).

With the implementation of library automation systems, such as SLiMS used at SMAN 2 Cimahi Library, librarians can manage collections and services more effectively. However, in practice, challenges remain, including the limited availability of human resources with technology competence. Enhancing librarians' capacity through training and school support is crucial to ensure the optimal use of information technology. Furthermore, libraries also play a role in fostering a culture of literacy and developing an information-literate community through user education services that introduce users to the use of library facilities, including the utilization of OPAC. This can help users navigate and maximize the use of collections, while strengthening access to accurate, timely, and relevant information to support learning and research needs.

## CONCLUSION

As a developing organization, a library must continually strive to adapt to all ongoing changes and advancements, particularly those in information technology. School libraries, as essential learning facilities supporting teaching and learning activities, need to possess and utilize various information technology tools and facilities, especially for library operations and the services provided to users. SMAN 2 Cimahi Library, as a senior high school library, has already adapted to and utilized information technology in its activities. Based on observational results, it is evident that a range of adequate services and facilities is available to support both operational activities and user services. Library operations already utilize automation software, specifically SLiMS.

The availability of work desks, computers, scanners, printers, and barcode scanners certainly assists librarians in performing their tasks, including providing services to library users. Additionally, users benefit from the availability of multimedia areas, digital collections, internet services, computer facilities, and televisions. These resources undoubtedly help users in conducting information searches and fulfilling their informational needs. However, alongside the implementation of these various information technologies, SMAN 2 Cimahi Library also faces challenges and obstacles in optimizing their use. These include a lack of human resources, librarians not yet fully knowledgeable in operating all technologies, users insufficiently educated on the use and utilization of available facilities, and issues with the cables connecting computers to the internet. These problems need to be addressed promptly to ensure that the utilization of available information technologies can be optimized to the fullest extent.

## AUTHOR'S NOTE

The author declares that there is no conflict of interest regarding the publication of this article. The author affirms that the data and content of the article are free from plagiarism. The author expresses gratitude to SMAN 2 Cimahi for their excellent cooperation, which enabled this research to be conducted successfully.

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