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Abstract

The purpose of this paper want to evaluate virtual reference and information services at university libraries in Indonesia. Evaluation of reference services can be seen from two aspects: from the aspect of the library that provides virtual reference services and from aspects of users of virtual reference services. This paper focuses on aspects of libraries that provide virtual reference services. The number of sample in this study is all university libraries in Indonesia, which are 629 universities. We limited our samples only the university libraries considering that the university is the spearhead of research for the development of science that requires the support of knowledge resources from the library. Thus, the role of the library in providing scientific resources is needed both directly and online. Following that, a web survey was conducted regarding the virtual reference and information service, such as having a virtual reference service in the form of chat, social media, or e-mail. The web observations were conducted from August-October 2018. Evaluation of virtual reference and information services, especially technology and virtual reference questions service in Indonesia is still at the initial stage or baseline, where many libraries still use telephone and e-mail as the most preferred media. However, there have been several libraries that carry the modern concept of reference services and adopted increasingly varied technologies. Virtual reference services need to be carried on and continued to provide learning for millennia generation. Virtual reference services in Indonesia are only adopted by major universities, both public and private, where the university web is already well develop, the library website is completed, and have qualified human resources. Reference questions are also still limited to questions about libraries in general, not yet discuss about scientific questions that support research at universities.

Keywords: virtual reference services, university libraries, information and reference services, virtual reference technology, web reference

Introduction

Reference and information service is one of the library service. Initially, reference and information service was only referred to as simply reference collection services. Reference section can be considered the important service in the library (Duckett, 2004). The reference section is also a very important part of the library, besides providing a good reading room, it also provides excellent sources of information. Reference services also support communities in learning, work, recreation, creativity, and innovation (Thorpe, 2017). In the construction of a library, the reference section always gets a special allocation, this can be seen from the

architecture of the library design that separates reference services, and provides its own budget flexibility to that section, as well as special librarians (Duckett, 2004).

Reference service is identical to reference questions, here are the types of reference questions: (1) directional, (2) information, (3) reference inquiries, and (4) research inquiries (Duckett, 2000). Indeed, reference questions do vary, starting from simple ones such as asking the location of library collections, to complex ones such as research inquiries that are mainly used by the researchers.

Reference services at libraries in Indonesia, which are one of the important library services, especially for higher education institution libraries, are still improving. This is related to one of the goals of Indonesian universities, which is to conduct *Tri Dharma*, namely education, research, and community service. Seeing the importance of the tasks carried out by universities, universities also build strong research supporters through libraries. At present almost all univeristy libraries in Indonesia have a reference section that serves information. This is in accordance with the national standards of higher education libraries, where university libraries must provide reference services for their users (Perka PNRI No. 13 of 2017 concerning the National Library Standards).

Previously, many reference services were in the form of printed collections and could only be accessed physically or in libraries; however, nowadays reference services are more complex with the emergence of various types of online information sources. This condition presents a challenge for reference librarians where the digital era greatly influences users in the information discovery process (Sowards, 2003). The results of the study state that the role of reference services is very important in supporting information retrieval for research activities carried out by the academic community (Delaney & Bates, 2017). Reference services that initially only relied on physical collections turned into remote library services that offered 24 hour service time through virtual library. This change in reference and information services follows the development of existing information and users themselves. Sources of information also vary from the printed material to the world wide web which makes the job of the reference librarian increasingly challenging (Ramos & Abrigo, 2012). With the help of information technology and changes in the practice of reference services, it can also expand the library services and provide new experiences for users in utilizing libraries (Hockey, 2016).

Many virtual reference and information services have been implemented outside Indonesia since the 2000s, but in Indonesia there are still not many university libraries that implement digital or virtual reference and information service. Some university libraries in Indonesia have used web 2.0 to support library service and promotion, but have not been further reviewed regarding its reference services (Anna, 2015). Some technologies implemented in virtual references, such as chat applications that can be used by users to communicate with librarians can facilitate access to reference services. There is even a library

that provides 'robots' to answer reference questions (Vincze, 2017). There are also those that use various types of web search engines to support virtual reference services in libraries (Khan, Khan, & Malik, 2017).

Some of the benefits of applications in virtual references include increasing user involvement, promoting library services, and creating community among users (Pun, 2015). However, the role of reference librarians as mediators between information and users is considered to be very crucial and it requires the ability of information service professionals so that reference services in the global age can be presented effectively and efficiently (Bandyopadhyay & Boyd-Byrnes, 2016).

Based on the conditions above, the researchers want to evaluate virtual reference and information services at university libraries in Indonesia. Evaluation of reference services can be seen from two aspects: from the aspect of the library that provides virtual reference services and from aspects of users of virtual reference services (Pinto & Manso, 2012). This paper focuses on aspects of libraries that provide virtual reference services.

Research methods

The number of sample in this study is all university libraries in Indonesia, which are 629 universities, Data are gathered from the Indonesian Ministry of Research and the Higher Education (forlap DIKTI) https://forlap.ristekdikti.go.id/perguruantinggi. After that the researcher conducted a web survey regarding the virtual reference and information service, such as having a virtual reference service in the form of chat, social media, or e-mail. The web observations were conducted in August-October 2018. The reason why we limited our samples only the university libraries considering that the university is the spearhead of research for the development of science that requires the support of knowledge resources from the library. Thus, the role of the library in providing scientific resources is needed both directly and online.

Data Findings

Of the 629 universities, 82 are state universities, 501 are private universities and the remaining 46 are international universities. These universities with international status are the branch of leading universities from various countries such as Australia, China, Japan, Saudi Arabia, Malaysia, Taiwan, England, and others. Private universities dominate higher education in Indonesia because of the wide distribution of regions so that the number of public universities is insufficient, and government funding is limited, so private universities were built to help improve the quality of society through higher education.

The comparison of significant public and private universities is 13% and 79.6% making public universities a public's favorite. Not only because of the affordable tuition fees (if entering

through the SBMPTN pathway), government's funding support for the education process and good university facilities, and supported by good human resources make public universities have become target of many prospective students. With good financial support and human resources, it will make a significant contribution to the development of libraries in state universities. So, it can be said that almost all state universities have a representative library, supported by an automated automation system and library website.

The highest number of universities is in East Java, with 96 universities, there are also 9 state universities that exist in East Java. North Kalimantan and Bangka Belitung each only have only one state university. Papua has 20 universities, 13 of them are International, and the other two are state universities. If viewed from the element of equity, all provinces in Indonesia have at least one state university.

Next is data on university and library websites in Indonesia, which will be described as follows: there are 13% or as many as 87 universities that do not have a website, and automatically the university does not have a library website and virtual reference services. Most universities that do not have websites are international and private universities from various regions, and include small private universities. In this era where information is crucial, the existence of a website is very important, that also affects education. The university website do not only provide information, but also acts as a place for remote transactions, for example handling registration, teaching, and other academic activities, and now the website is an interactive media that can reach and capture feedback from the public.

Website management is not an easy matter, it requires a high cost. In this case all international universities do not build websites because they have one with the parent university, as well as various private universities in regions that do not have sufficient human and financial resources to develop university and library website. It can be said that, if the university does not pay attention to the university website, it is certain that the library website is not a priority.

The number of universities that have library websites is only 50%, or as many as 317 universities. All state universities have university websites and library websites, although they are only simple. There are almost 49% of libraries that have virtual reference services through the library website. This service is used to support the learning process at the university and involves technology or applications supporting two-way communication to facilitate communication between librarians and users as seen in Table1.

Table 1. Library Has Virtual Reference Services

Yes	155	48.89%
No	162	50.10%
	317	100

Not all libraries use the term "virtual reference service" in their reference services. Libraries often refer to simply 'chat' or 'live chat'. The term "Ask Librarian" is still rarely used even though in some places the term is the most often used by libraries (Pinto & Manso, 2012). Chat or live chat facilities involve librarians who assist users in answering various questions related to the library and specific information. Live chat facilities can only be used during library work hours, outside working hours users can contact the library via e-mail. Chat services with librarians are carried out during working hours for cost efficiency. Some virtual reference services abroad use chatbots to save costs and are used to answer routine questions only (Vincze, 2017). In Indonesia, the use of chatbots and the provision of FAQs are still not widely adopted, this is due to the constrain in the mastery of information technology, understanding of virtual reference services, as well as the limited number of users who do not utilize the service.

Virtual Reference Technology Services

Table 2. Virtual Reference Technology

Virtual Reference Services	Total	Percentage
Chats	4	1.05
e-mail	128	33.51
Social Media (Facebook, Instagram, Twitter)	64	16.75
WhatsApp	1	0.26
Ask Librarian	4	1.05
Virtual Tour	1	0.26
E-complaint	1	0.26
Telephone	155	46.86
Total	**382**	**100.00**

The technology or application that is highly use as a way to utilize the virtual reference service is telephone, followed by e-mail. The telephone is the first generation technology that is able to connect without physical presence. All libraries put their telephone numbers in their contact so users can contact them directly and get direct feedback. Phones are still widely used today because many people still like to communicate by listening to sound directly. Through telephone communication, the user will get feedback directly from librarians, and can listen to each other's intonation.

After the telephony, in the late 1990s, when the internet began to be widely used in Indonesia, new communication media emerged: e-mail. E-mail replaces the traditional mail with its features that are similar to mail, in which e-mail is able to send messages quickly in real time. E-mail began to be widely adopted by libraries as one of the media to communicate with users, including providing information services. The advantages of e-mail are, it is cheap, fast, and easy. While the weakness is, the feedback that should be given cannot be received directly since it depends on the availability of time librarians in answering all user needs.

In the 2000s web 2.0 emerged, web 2.0 was the second generation of website. If in the first generation, website is static or one-way, in web 2.0 interaction between users and website owners are can happen. Web 2.0 allows users to communicate and get feedback quickly. At present web 2.0 technology is only used by 16% of libraries and this is used to support information services. Libraries' 2.0 websites can also be used to gather users' needs so that services are centralized and in accordance with their needs. The obstacle faced in operating web 2.0 for reference services is that there must be certain officers who managed and understand information about libraries and web 2.0 technology. This is what is rarely owned by libraries. In average, university libraries in Indonesia have a limited number of librarians and do not have special staff to handle this online service.

Furthermore, the technology used in virtual reference services is: chat application, chat by using WhatsApp, building video tutorials, opening e-complaint services, and ask librarian. The features above are still rarely found in libraries in Indonesia. Managing virtual reference services is not only about adding communication features, but also requires funding and commitment from libraries (Weak & Luo, 2013), and many universities have not yet focused on virtual reference services. Some major universities have made policies, provided facilities, and special HR that manages this service, some even made the policies that chat services are active only during working hours.

Users' Question

Table 3.6 Responding to Users' Questions

Yes	35	22.58
No	120	77.42
	155	100.00

Although all libraries that have virtual reference or information services have been involved in two-way communication, not all of them provide responses to users. There are also users who do not know the function of virtual reference services because they are not clearly displayed on the website. The library only adds contacts in the form of e-mail or instant messangers without explaining what the user can do through the contact. As stated by Stamper and Butler, 2011, virtual reference services in some cases are merely added while the service is actually not yet operated, in sense that some libraries add their e-mail for virtual reference services without any financial support and policies that support these services.

Users' questions are mostly about general library information such as opening hours, library service programs, new collections, if the question is related to the definition of reference services and information. Those types of question is not categorized as references transaction according to RUSA, but according to Ducket, 2000 types of those questions were included in the reference question. This is supported by Qomariah and Kusuma's statement, in which

communication in virtual reference service transactions via e-mail is dominated by questions about access to information sources in a formal language style. (Qomariyah & Kusuma, 2015). This is similar to the findings of the researchers which stated that users who contact the reference services also asked about how to access to library journals in certain subject.

Discussion

Reference and information services emerged along with the establishment of libraries. In Indonesia, reference services are well developed in higher education libraries (universities, colleges, institutes). Reference services adopted are still traditional style, such as serving printed reference collections. In Indonesia, the library education at that time was focused on knowledge about types of reference collections, however it lacked of lecture on reference services and how to explore reference questions so that users and librarians had the perception that reference services only served reference collections in the library.

Reference services have evolved since the advent of the internet, encyclopedia became wikipedia, dictionaries became electronic dictionaries, maps became google maps, and others. This was then captured by the library that information was around us, not only in the library shelves. Likewise it changes the way users and librarians interact, where face to face interaction changes to IM, chat and video chat. These changes have not been captured by all university libraries in Indonesia, only some of them have taken advantage of virtual reference services. Face to face services still dominate, remembering that it is easy to do and get direct feedback. This is similar to findings in Nigeria, where reference service users at university libraries prefer face to face services compared to chat, IM, e-mail, because of lack of internet facilities, lack of information technology capabilities, frequent power outages, lack of electronic reference sources (Bard, 2014). This deficiency also causes libraries to have some obstacles in developing their virtual reference services. To be carried on, virtual reference services require user components, interfaces (websites), e-resources, librarians (Bardhan, 2012). This component is very important in fulfilling virtual reference services and if it is not supported by library policy it will be ineffective. The existence of adequate infrastructure such as internet connection and a stable electricity network is very important here, as well as adequate e-resources, and librarians who are able to provide solutions for users online. The role of librarians becomes important so that they require sufficient skills, including basic computer skills, chat skills, communication, information services, service policies, multi-tasking, collaboration, ethics, quick thinking skills (Shabir, 2014).

In providing reference services, librarians must also prioritize humanistic aspects in virtual references, so that users still get the same experience when they are face to face. In the virtual reference service, it is also expected to prioritize the counseling function. In counseling, there are three aspects; mindfulness, authentication, and emotional intelligence,

which have results in a transformational communication rather than just transactional. (Prieto, 2017). Librarians must be able to communicate with users from various backgrounds and various media. However, what happens is that many online chat in virtual reference services are still transactional, and do not lead to information literacy that includes high quality, increase student learning, give step by step recommendations. (Hervieux, 2010).

Conclusion

Evaluation of virtual reference and information services, especially technology and virtual reference questions service in Indonesia is still at the initial stage or baseline, where many libraries still use telephone and e-mail as the most preferred media. However, there have been several libraries that carry the modern concept of reference services and adopted increasingly varied technologies. Virtual reference services need to be carried on and continued to provide learning for millennia generation (Schiller, 2016).

Virtual reference services in Indonesia are only adopted by major universities, both public and private, where the university web is already well develop, the library website is completed, and have qualified human resources.

Reference questions are also still limited to questions about libraries in general, not yet discuss about scientific questions that support research at universities.

Suggestion

1. The next research focusing on the understanding of the head of the university library about virtual reference and information services. The failure of reference services often lies in the understanding of the leadership of the reference service function.

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