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Students' Information Resources during Their Involvement with Research Projects: Indonesia setting

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ABSTRACT

Students select information resources mostly influenced by their previous experiences with particular sources. This unique experience influence students' future decisions about what and how they use information resources. This qualitative study aims to explore students' preferences to different information sources when they completing assignments and research projects. We conducted semi-structure interview on 17 undergraduate students whom agreed to participate the study. Data analysis revealed that students' search for information were complex activities because it involves the following key points: scope of assignment, range and type of reference needed, students' level of knowledge (including willingness to use the available resources), databases used for information seeking, and recognized access to sources. Books and journals that were recommended by lecturers served as the main consideration in determining information source. Lecturers were considered as the main information source for academic purposes. Google and Google Scholar were the most popular databases for initial search. Students discovered the other information resource availability, such as repository, by searching using Google and Google Scholar. Students found the university repository when they followed several links shown by the search engines. Librarian can develop an education program concerning library information services and users based on the study findings. Future studies can be done on different targeted groups, such

as graduate and post-graduate students, and may explore students' satisfaction towards the information they found.

INTRODUCTION

Undergraduate students may have challenging time in fulfilling their scholarly information need during their study. As a university student, they are required to have the ability to find and use scholarly information to carry out their course assignments and other projects from the university. However, at first place, undergraduate students may have different understanding about the meaning of scholarly information itself. (Thomas, Tewell, & Willson, 2017). Such information that can be obtained from number of selected information resources, for example academic databases, library collections, and lecturers' note. Some of this information can be found from library as historically, library provides information sources from different forms like books, journals, magazines, and videos in order to fulfill patrons' information need. Libraries of higher education have specific users, which come from the academic community including staff, lecturers and students, for which they represent diverse information needs. Lecturers may need to find scholarly information for their teaching and research purposes, while students would need scholarly information for completing their assignments and research projects.

It is important that students have the ability to access and use any information sources provided by the university as well as what is available outside the university. Further, undergraduate students need to understand the importance of using relevant scholarly information and locating such information from academic databases provided by their university library to ensure they can do their research well. However, some studies revealed that undergraduate students found that using academic databases were challenging for them (Komissarov & Murray, 2016 ; Heriyanto, 2018a).

Knowing about the availability of information sources is not necessarily make them use these sources (Flierl, Howard, Howard, Zwicky, & Weiner, 2018). Further, undergraduate students may have their own preference when selecting information sources (Komissarov & Murray, 2016). There are many studies of students' ability to access and use information have been

conducted. Most of these studies were looking for the undergraduate students' information seeking behavior, and some were observing students' information literacy.

An example of research on the use of information sources with implementing information seeking behavior theory carried out by Rosman, Mayer & Krampen (2016). There is also research in the use of information sources that apply the concept of information literacy conducted by (Mullins, 2014; Igun & Odafe, 2016) . These studies provide new perspective in the field of information seeking behavior and also the information literacy skill.

Research that focuses on student ability levels tends to produce findings regarding high or low levels of student ability on searching and using information. These research tends to be evaluative, which means that it measures how high the ability of students to find and use information that was found (Igun & Odafe, 2016; Sezer, 2020). In Indonesian context, there isn't study which investigate the ways Indonesian undergraduate students engage with information sources when they research and write their final project. This study aims to identify any factors that influence students in selecting specific sources of information, as well as examining what students consider when they use information sources.

Student experience in interacting with information sources is a study in the field of library and information science which was introduced by Bruce, Davis, Hughes, Partridge, & Stoodley (2015) as information experience. This information experience provides insights about unique perceptions, opinions, and views of each student regarding their engagement with their information environment. Moreover, information experience is a concept that describes the complex interaction between information and its users (Bruce et al., 2015). These experiences can be complex experiences because they involve several aspects of student interactivity with the information aspects. The interactivity includes sources of information known by students, and aspects of students themselves when determining the choice of information sources. Bruce et al. (2014) added that the concept of information experience describes a person's experience related to the information

aspects when a person is learning. This study aims to explore the experience of students in using information sources. It is hope that the findings will be useful for libraries, especially university libraries in developing services, as well as being useful as a basic material for policy makers in libraries in managing and disseminating information resources to the community in the university.

METHODS

Research that explores a person's experience and deeply identify opinions, perspectives, and mindset basically has the potential to be done qualitatively (Thanh & Thanh, 2015). Furthermore, (Chu & Ke, 2017) convey that the phenomenon of real-life can be the subject of qualitative research. Hence, the study aims to determine the preferences of undergraduate students in using this information source using qualitative methods through a case study approach and to implement semi-structured interviews as data collection techniques and thematic analysis methods to analyze the data that have been collected.

Qualitative method considered to be relevant for this current study because qualitative method that can be used to find out in detail an activity, process and context of an ongoing phenomenon (Lincoln, 2002), and as a method that can be used to describe and clarify the experience of a person carried out in his life (Cresswell, 2014).

To recruit students as the research participants, researchers devise sampling criteria that are relevant to the purpose of the study. This technique is also called the purposive sampling technique. A technique for recruiting participants for research by prioritizing individuals who have knowledge and experience regarding the object being studied (Palinkas, Horwitz, Green, Wisdom, Duan & Hoagwood, 2015). The criteria determined to fit the research objectives are students who are in their last semester conducting their undergraduate thesis. The study population were all students who are still actively registered as students in the Faculty of Humanities, Universitas

Diponegoro. In total, 17 undergraduate students agreed to participate and subsequently was interviewed about their experience in completing assignments and other research projects.

Participants were recruited using e-leaflets describing study information that were distributed across various Whatsapp groups of undergraduate students. After participants gave their consents to participate, they were interviewed using semi-structured interviews, which the interviewer has the opportunity to have a direct conversation with the participant without being limited to a list of interview questions. Semi-structured interviews are very commonly used in qualitative research as the only technique for collecting data (Rabionet, 2011).

The collected data are analyzed using thematic analysis, a method for identifying and analyzing patterns or themes that are considered important to describe the phenomena being studied (Braun, & Clarke, 2012). Researchers understand that identifying research patterns can be helpful to analyze the focus of the research, which is the participants' experience in the phenomenon of the use of information sources. Thematic analysis methods, like other data analysis techniques, go through two stages: familiarization with data and determining code.

The first stage is familiarization with data. This stage is considered to be an important stage because if the researchers have 'felt close' to the data they have, it will facilitate the researcher in doing the next stage, like interpreting the data they have. Familiarization or closer understanding to the data is done by listening to the recorded interviews several times. The researcher listens to each recording of the interview at least twice. Following that, every interview recording is converted to transcript. Through the process of writing interview transcripts, the researcher gain insight and begin to understand more about the data.

The second stage in thematic analysis is determining the code. Codes can be considered as labels or illustrations of pieces of data from transcripts that are considered relevant to the research topic, and are considered to be able to answer research questions (Saldaña, 2013). When all data have been determined by each code, the codes are grouped according to the similarity of their

meanings. In other words, codes that have similar meanings will be put together in one group. This group shows the pattern of the phenomenon being studied.

RESULTS AND DISCUSSION

At the beginning of the interview, the participants are given a question about the types of assignments that they have ever had. Class assignments vary from essays, reports on observations, presentations, and final assignments. The topics of the assignments are also varied, such as language and literature, culture, and information technology. Various tasks and essay topics raises the need for diverse sources of information. For example, participants who are working on essays need many articles from journals to get ideas and data about the topics they write.

When talking about information sources, most participant chose Google Scholar to be the first choice for the very simple reason; it is because Google Scholar easy to use and it provides the information needed. Some other participants chose Google Scholar as their first search engine because they did not know other sources of information that could be easily used, though some participants also acknowledged that the process finding information through Google scholar was not easy. Few participants commented that they could not find information they needed sometimes.

The strategies applied by the participants were mostly similar by trying several keywords. This is the basic ability to search for information that is known by the participants, which is done by entering keywords without any modification. It creates a risk when the keywords written were not accurate and not relevant to the topic being searched. Then, it is very unlikely that the participant will find the information needed. As one participant said,

"The most difficult things is that I can never directly find the keywords that are relevant to what I want to find. When I am confused about something and type it in the search engine, the result cannot immediately appear. Thus, it seems that I have to read it one by one. I have to

read everything first to get what I need. Yes, the difficulty is because I cannot directly get the results."

It illustrates that the participant needs several hits to type keywords to find the articles needed. Another participant said that not all of the information they needed could be found through Google and Google Scholar.

This finding contributes to Arshad & Ameen (2017), indicates that Google is the main choice of participants in looking for scientific work. This choice is based on the experience of the participants who can easily use the search engine to find general information, such as the definition of a terminology. However, when participants are faced by the need to find scientific information, the search process becomes more challenging because it is not as easy as finding non-scientific information. The selection of Google as an information source by participants is also conveyed through research by (Sin, 2015) which states that Google is used as a source of daily information for participants both academic and non-academic needs.

However, Heriyanto (2018a) find out something else related to the use of Google as an information source. Heriyanto (2018a) states that Google is only used as an initial source of information when students look for information. In another meaning, students use Google to find ideas about the exact terminology and keywords that can be used in next search. After getting the right terminology, students use the library catalog to find the scientific articles needed.

Another source of information used by participants to look for information in order to carry out lecture tasks is the campus repository, which are called by some participants as e-Prints. The words ePrints is actually an open source software to manage the scientific work of the academics in a college or university. In addition, there is another open source software called DSpace. Nevertheless, for the participants who become participants in this study, ePrints is the only repository 'name' known by participants and the most often mentioned.

A part of the participants know ePrints through friends and lecturers. It shows that ePrints has become one of the references for participants and lecturers. Therefore, it can be a suggestion for the ePrints caretakers to make the database of scientific works as a source of information that is trusted by students and lecturers. On the other hand, some participants convey theses that are stored in the campus repository have problem since not all pages can be downloaded. The participants comment that the only pages that can be downloaded are the first few pages, but last few pages cannot be downloaded. Another participant argues, "*It cannot be accessed because it needs password.*"

The opinions of some of the participants raise a question since repository is a green open access managed by the university and available for public. It means that it can be accessed publicly without password. When a student or other users have difficulties in accessing one of the journals provided in a repository, they might not want to use it and turn from ePrints to other information resources, as one of the participants said below.

"The abstract I needed required a password. Because it needed a password, I tried to find other similar articles I could simply click."

The participant's statement in turning to other information source is not novel as every user will always look for an easy source in his/her search. Some of the participants here turn to other information source and articles. Those who do not manage to get an article would start the search again for another one. However, one of the participants stated that ePrints in her campus provides more information than the ePrints in two other campuses that the participant has used, as she said below.

"It's quite easy, because everybody can download it, and the university can upload the thesis, unlike [other campus' repository] and [other campus' repository] which only have abstracts and bibliography".

This finding indicates that socialization for students and lecturers is needed regarding the availability of university repository as the main deposit for the academic community's scientific journals (Björk, Laakso, Welling, & Paetau, 2014). If students are looking for scientific articles in accordance to their study program, one of the options available is the repository managed by the university. Moreover, repository has now become a valid and updated information resource since its contents come from research done by researchers, lecturers or students in a university (Zervas, Kounoudes, Artemi, & Giannoulakis, 2019).

Other information source available in college that was mentioned by the majority of the participants is the library in the faculty. One of the participants said that the faculty library is used to search for reference especially in completing assignments. The motivation of using the faculty library facility is because the collection is relevant with participants' needs in completing their assignments. On the contrary, other participants have difficulty in finding the reference they need in university central library.

Other participants choose not to use the library in the faculty due to the limited collection and short loan period. The participant's statement concerning the faculty library's collection and the observation conducted by the researcher suggest that the participants' need of information is not fully met by the faculty. Therefore, it is indicated that the library has not been able to fulfill its information function for the academic community as the users. Nguyen (2015) stated in his research that a library is a democratic place and responsible to the advancement of the thinking and civilization of the users. That obligation can be met if the library caretaker is willing to commit in providing informative scientific information and entertainment that is relevant with the need of users.

Concerning the needs of electronic books (e-book), some of the participants mentioned the library to provide free e-books. The participants identified about the availability of e-books in the library was obtained from the lecturers. As for the participants whose study program is relatively

new in their faculty, the book collection needed is mostly provided in the public library. It began with a recommendation from a fellow participant of the same study program who had used the collection in public library. In the end, the participants of this study program use it more than the one in university central library or faculty library.

"Now in public library. If I want to look for books for [a study program], I went to the public library last month. I did so, too, last semester, for [a study program] books, to the public library. It has more books than in [university] library. My friends also said there are many books on [a study program] in public library so I tried to go there. I didn't have any class that day, on Friday, while the public library stayed open, so I went there. And there are many books on [a study program], I think, compared to the [faculty and university] libraries".

For most of the participants, their lecturers are still their main source of information. This is because the participants often use books or journals recommended by the lecturers. One participant said that he depends on one journal for his study and in completing his assignment. Other than from lecturers' recommendation, the participant said that the availability of the book relevant to his study program is very limited.

One of the participants added that his study program is relatively new. This is why there are not many books for the needs of information in his study program. The same thing is also said by another participant that the reference sources that must be used are only journals and books. Therefore, the information source that is most often searched and used in completing assignments is an article from a journal, as stated below.

"We can only look for journals because our lecturer said the source must be from either books or journals. We cannot use internet, Wikipedia, blog, or wordpress as our source. It has to be from a published journal"

Another source of information that is known but not commonly used yet is academic database. It contains numerous journals subscribed by the university for its lecturers and students to

use. Most of the participants admitted that they have known this from a standing banner near the dean's office where students often walk pass. However, the information about the availability of the database does not make students using it to search for scientific journals.

There are several things that cause participants stop using the information source. First, they do not find the information needed. They admitted that it is not easy to find an article in academic database. Even one of the participants admitted he did not manage to find the information due to his limited ability to search for the article he needed. Moreover, the journal the university subscribed does not provide the article he sought. The second reason is participants' limitations in understanding scientific articles in English. It becomes an obstacle and that limitation is used as a reason not to access information from academic database subscribed by the university, as stated by the following participant, "I think because I don't understand. They mostly use English".

Third, participants expressed the difficulty in accessing the journal. This perception arises because the participants are used to Google and Google Scholar. What is more, the participants lack the ability to access the international journals subscribed by the university. This raises a question since every new student is given a training on the availability of the information resource and how to access it. However, this limitation may be experienced by the participants when they are used to using Google and think that scientific articles can be obtained from Google.

Participants are used to this search engine and when they use academic database, they will need different ways to access it. This causes some of the participants' perception that accessing online journals is difficult and they are not accustomed to it. One of them stated that those journals can only be accessed through the university's internet network. The participants compare it with other universities that give access to the subscribed journals through the networks from both inside and outside campus. Some of these participants' view on how to access the information resource could be invalid because the online journal that the university subscribed can be accessed even when the lecturers and students are outside campus.

The fourth reason is the participants cannot access the journals subscribed by the university because they do not know those online journals are available. Several participants admitted they did not know the university subscribed many online journals for students and lecturers. Even when they were asked about the standing banner showing announcing the availability of the online scientific journals, they admitted they had never seen it. It indicates that some of the participants do not pay attention to the information delivered by the faculty. In the end, the faculty needs to consider other medium in delivering the information about the journal availability to students.

Other information source in the university that was mentioned by some participants was the library website. It is called an information source because library website, which becomes the object of this study, provides links to various subscribed journal publishers and the library bibliography collection catalogue. One participant mentioned that he had never used the website as a medium to search for information. However, the participants know about the website from the standing banner in front of the dean's office. Nevertheless, based on most participants' comments, apparently the standing banner does not have the significant effect to motivate students to access the journals.

This finding indicates that socialization is needed concerning information sources provided by the university, which can be accessed in the library or in the form of digital collection that can be accessed in library website, and the library's online catalogue. The socialization can be conducted by a team from the central library or the faculty library. It is also stated by Hughes, Hall & Pozzi (2017) that education towards users are always needed and becomes the library service program that is done periodically.

This study finding contribute to Machimbidza & Mutula (2020) study that an introduction of e-journal towards students is very important because they have to possess the knowledge about scientific information and the way to present it.

Other aspect concerning the usage of information resource is the aspect of choosing an article. Every participant has different tendency in handling search result. Some of them view it

from the rating or how many times it has been downloaded. High number of downloads appeals them to search the link displayed by the search engine and to read the abstract. Abstract becomes a main indicator for participants in deciding to download an article or to turn to the others. Meanwhile, for other participants, they are only interested in seeing the first five links. Some of the participants are not interested to see the last link or even the result on the second or third page.

Participants hope the information source can be used easily without password. They hope the abstracts and the full articles are available; it means the article they seek and find can be fully downloaded without any barriers. Participants also stated their hope for the faculty to conduct training on the availability of academic database that is subscribed by the university. The complexity of the access mentioned by the participants challenges the faculty or university librarians to be willing to interact more intently with the participants concerning the introduction of academic database and the strategy to search for information.

The statement above indicates that the participants or the students understand the level of knowledge about information resources in the faculty and university. Participants can also state the information they need. Most participants realize that to find scientific information in completing assignments, they need it from competent sources. Participants' expectation for a training of information resource availability and the searching technique is a signal from the students that needs to be regarded by the policy makers in faculty and university levels as well as the university librarian who needs to follow up on this phenomenon.

CONCLUSION

This study aims to explore the undergraduate students' information experience during their involvement with their assignments and research projects. The study findings show that students' search for information were complex activities because it involves the following key points: scope of assignment, range and type of reference needed, students' level of knowledge (including

willingness to use the available resources), databases used for information seeking, and recognised access to sources. Books and journals that were recommended by lecturers served as the main consideration in determining information source. Students in this study considered lecturers as the main information source for their academic purposes. Google and Google Scholar were the most popular databases for initial search. Students discovered the other information resource availability, such as repository, through the search using Google and Google Scholar. They find the university repository when they choose several links shown by the search engine as the result of their search using keywords. The study findings can be useful for librarians to develop an education program concerning the users and the library information services. Future studies can be done on different targeted groups, such as graduate and post-graduate students, and may explore students' satisfaction towards the information they found.

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