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Information seeking behavior in academic assignments using smartphone among elementary school students

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Abstract

This article discusses information seeking behavior developed by elementary school students in completing academic assignments, their reasons for using smartphone to find information related to academic assignments, and students' opinions about the role of school libraries. All data presented in this article are the results of a study on 500 elementary school students in four major cities in East Java Province, Indonesia, namely Surabaya, Malang, Madiun and Malang. This study found that there has been a change in information seeking behavior among elementary students who no longer rely solely on information from textbooks in the libraries. The students have become part of the YouTube Generation that uses more social media (YouTube) via smartphone. According to the elementary school students, YouTube is a social media platform that provides information that is easily understood, while Google offers unlimited information. Students' confidence in the library as a source of information began to fade. Students in the millennial era often perceived libraries as sources of information from school textbooks, not as sources of information that are able to provide broad and varied information. To maintain the existence of school libraries, the role of school librarians that is urgently developed in the future is that librarians must change the way of learning and the choice of information sources among YouTube generation by collaborating with teachers in developing digital and information literacy skill among students.

Keywords: *Information seeking behavior; Academic assignments; Elementary school students; YouTube generation; School librarians*

1. Introduction

Studies of information seeking behavior so far have been conducted on groups of adults and focused on daily life, work, and other fields (Eriksson-Backa et al., 2018; Mansour & Ghuloum, 2017; Mowbray et al., 2018; Wellings & Casselden, 2019). Whereas, studies of information seeking behavior among students are more focused on high school students and undergraduate students (Al-Daihani, 2018; Kwasitsu & Chiu, 2019; Lee & Song, 2015; Madden et al., 2006; Nicholas et al., 2009). Indeed there are not many information seeking behavior studies conducted on elementary school students. Even if there are ones, the studies usually focus on information searching strategies and psychological aspects, such as life satisfaction and loneliness (Liu et al., 2013; Vanderschantz et al., 2014). To date, there have not been many studies of information seeking behavior in using smartphone conducted on elementary school students. This article was written based on a study that examined information seeking behavior among elementary school students when they did academic assignments using smartphone.

Smartphone is an information and communication technology that has changed the way people communicate, find information, and carry out daily activities. Various applications that can be installed on smartphone have resulted in an incredible increase in the number of users. Utilizing smartphone has evolved into a habit and led to dependency, which ultimately makes smartphone use increasingly pervasive (Oulasvirta et al., 2012; Park et al., 2013). There have been many studies that examined the uses of smartphone in various life contexts, including work-related use at home and private use at work (Dora et al., 2019), travel (Wang et al., 2016), advertising (Martins et al. ., 2019), and hospitality industry (Wang et al., 2016).

In the millennial era, one of the interesting and important subjects of information seeking behavior research is students, but - as mentioned above - research on students is not as much as research on adults. Since the period of 1999-2008, from all information behavior studies, it was found that only about 19.4% studies focused on students (Julien et al., 2011). Before the use of social media and smartphone increased, studies of information seeking behavior of students were only related to web searching, online library catalogs, and electronic encyclopedias (Borgman et al., 1995; Fidel, 1999; Hargittai, 2010; Hirsh, 1997; Kuiper et al., 2005; Marchionini, 1989; Wallace et al., 2000). However, when the use of smartphone and social media was widespread among people, Bowler et al. (2018) were interested in conducting a study of information seeking behavior among children. When the internet can be accessed from a personal computer or laptop, children can use internet to find information at home and in the library. Moreover, when mobile phones are also easy to use, children increasingly have the opportunity to use mobile phones to obtain information (Bowler et al., 2018).

Many studies have found that children from the Internet generation tended to do various activities via smartphone (Turner, 2015; Zhitomirsky-Geffet & Blau, 2017). It can be said that smartphone cannot be separated from their daily lives (Sunday & Ansari, 2017), even they are exposed and use mobile media devices since they are 6 months to 4 years old (Kabali et al., 2015). Using many applications on smartphone, they can communicate, build friendships, read information, and search for any information (Bae, 2015; Tariq et al., 2018; Zilka, 2018a). When innovation and smartphone usage are increasingly pervasive, their information seeking behavior tendency is facilitated by the technology. Because they are familiar with smartphone, they also try to seek information for completing academic assignments by using smartphone (Asplund et al., 2018). Although children have limited understanding of information searching, in reality they struggle independently using the internet via smartphone to obtain information (Danovitch, 2019). Because they grow up in an internet technology environment, children consider the internet, which can be accessed from gadget devices, to be one source of information that provides reliable knowledge (Wang et al. 2019).

This study examined information seeking behavior of elementary school students in completing their academic assignments. Broadly speaking, the problems examined were:
1. How is the information seeking behavior of elementary school students in solving academic assignments using smartphone?
2. What are the reasons for elementary students using smartphone to seek information related to academic assignments?
3. What do students think about the school library in supporting the completion of their academic assignments?

2. Literature review

2.1. Information needs and students' information seeking behavior

Studies of information behavior are developed by understanding that information seeking behavior of human exists because of an impulse in the form of information needs. Early studies of information needs were conceptualized, among others, as anomalous state of knowledge (Belkin, 1982), uncertainty (Kuhlthau, 1993), and gap (Dervin, 1983). Spink and Cole (2004) said that information needs emerge because humans are creatures who want to solve their problems or want to become problem solver. Cole (2012) also perceived information need as a factor that causes people to engage in information seeking behavior. Cole (2012) stated that information need is an adaptive human mechanism that drives people to seek out, recognize, and then adapt to changes in their social and physical environments. From many definitions of information needs, Savolainen (2017) has reviewed and divided information needs into two definitions. The first definition is that information need may be conceived as a trigger providing an initial impetus to information seeking. Second, information need may be approached as a driver keeping information seeking in motion for a longer time.

In information behavior studies, students are interpreted as information seekers who do not understand how to find information in large databases of various kinds (Large et al., 1998). Smartphone devices are the technology of choice that provides fast access points so that the information needed can be found (Burford & Park, 2014). In the academic context, elementary school students try to seek information through smartphone that are considered to provide convenience and speed to complete school assignments. The increasing choice and rate of adoption among students have opened the possibility for smartphone to become very reliable as a tool to find information in dealing with academic problems.

The selection and preference of information sources are two of the processes in a series of information behavior activities. According to Sonnenwald (1999), the concept of information horizon provides a starting point for understanding the preferences of information sources. Information horizon may consist of various information resources, such as friends, libraries, books, documents, information retrieval tools, and web pages. Indeed, many concepts have been developed to refer to an understanding of information sources, such as 'information world' (Shenton and Dixon, 2003) and 'information universe' (Chatman, 1992). In their study, Savolainen and Kari (2004) classified various sources of information and channels in an order of preference to meet the requirements of information seeking. The classification of the information horizon is based on one's conception of the characteristics of information sources, especially accessibility and quality. Their study resulted in the placement of various sources of information in three zones of relevance, one of which was network sources. Network sources are preferred source of internet information and home pages (www) because of their accessibility and opportunities to save time.

2.2. **Smartphone use in information seeking**

Based on several studies (Absar et al., 2014; Joo & Sang, 2013; Kim et al., 2014), Zhitomirsky-Geffet and Blau (2017) have classified two types of information seeking behavior that tend to be developed together with the use of smartphone, namely social information seeking behavior and functional or cognitive information seeking behavior. Social information seeking behavior is the behavior of utilizing smartphone to consume social content for communication and participating in social interactions through smartphone actively and passively. Functional or cognitive information seeking behavior is defined as the behavior of searching, consuming, and learning cognitive or functional content using a smartphone as a platform that does not involve social interaction and communication with other users and simply relies on Google and other

search engines. However, the activity of seeking information can also be done by combining the two types of information seeking behavior above. As Dresang (2005, 2009) stated, information behavior in the digital era is characterized by the principles of interactivity, connectivity, and access. Seeking information via a smartphone is not a single activity, but rather a behavior that involves activities of accessing, developing connectivity, and interacting through social media applications.

It was previously known that smartphone technology usage tends to be widespread among students due to the presence of search engines to find academic information (78.7%) (Bomhold, 2013). The reason why smartphone are used for academic purposes is because of the speed factor. Students can get the information they need wherever and whenever. Motivation in utilizing mobile technology has also been studied using the theory of uses and gratification (Florenthal, 2018; Hiniker et al., 2016). Florenthal (2018) found that convenience is one of the reasons that motivates students to use mobile technology in classroom. Students feel comfortable to use mobile technology because of the convenience in operationalizing it.

3. Research method

This study is a descriptive study. Five hundred elementary school students in four major cities in East Java Province, Indonesia, namely Surabaya, Malang, Madiun, and Malang, were interviewed. In each city, data were collected from several tutoring institutions that are usually attended by students from various schools. This study was intentionally conducted in tutoring institutions to obtain data of students from various types of schools. Interviews were conducted during recess when students waited for tutoring at the institutions or after they took tutoring. The samples or respondents in this study were elementary school students, from first grade to sixth grade, with details of cities as research locations as follows: in Surabaya as many as 200 students, in Malang as many as 100 students, in Madiun as many as 100 students, and Kediri as many as 100 students.

Table 1
Distribution of schools of respondents

School	Frequency	Percentage
Public elementary school	403	80.6
Private religious-affiliated elementary school	74	14.8
Private elementary school	23	4.6
Total	500	100

Respondents were selected purposively. Respondent criteria were: (1) students who are studying in public or private elementary schools in the study locations; (2) owning a smartphone; and (3) subscribing to internet service on their smartphone. In addition, in-depth interviews were also conducted on a number of students to obtain deeper data. The data were explored using a semi-structured questionnaire that had been prepared. Further, in-depth interviews were conducted to obtain deeper qualitative data about students' views of the library. All data obtained from the field were processed using the SPSS (Statistical Package for Social Sciences) program and then interpreted on tables.

4. Data findings and discussion

4.1. Popularity of YouTube as an information source in students' information seeking behavior

As students, respondents do not only learn in class, but they also often have to do school assignments from their teachers. In the learning system in Indonesia, every day the teachers do give assignments to students to deepen the mastery over learning materials and to train students to be skilled in doing school assignments. The references and information that students need to do school assignments were usually varied, depending on the school subject and learning material. According to the statements of the students, in the past month, the information needed to complete academic assignments was mostly information on how to make crafts (19%), rhymes or poetry (19.6%), sermons (16.4%), and math formulas (14%). Other respondents said the information they needed was often laboratory experiments (8.6%), math problems and how to solve them (6.4%), and questions about grammar usage and conversations in English (4.8%).

Table 2
Information needed from the internet to do
academic assignments in the past month

Information needed	Frequency	Percentage
How to make crafts	95	19.0
Rhymes and poetry	98	19.6
Gymnastic movements	56	11.2
Video of laboratory experiments	43	8.6
Sermons	82	16.4
Formulas	70	14.0
Math problems and how to solve them	32	6.4
Questions about grammar usages and conversations in English	24	4.8
Total	500	100

The information that students need and look for, of course, depends on the assignments they have to do. Some information may be obtained by students from textbooks, but as part of the Internet generation, the information needed by students to do academic work is usually sought in cyberspace via smartphone. Nina (11 years old), a student from elementary school in Surabaya, for example, stated that it was much easier to seek the information she needed via a smartphone than to seek it in books in a library or bookstore. By a smartphone, students only need to enter certain keywords and they will immediately obtain information.

Dicky (11 years old), a student in Kediri, said that when he got group assignment to make handicraft, he and his friends decided to make ashtray from used milk tin. They got this idea after they browsed on the internet. In one YouTube video, Dicky and his friends watched an example of how to make a simple, but beautiful ashtray from a used milk tin. Meanwhile, Dinik (12 years old), an elementary school student in Malang who was assigned by his/her Indonesian language teacher to read poetry, initially confessed that he/she was confused about what poetry he/she should read and how to read good poetry. On the advice of his/her brother/sister, Dinik then searched for examples of poetry readings on Google and YouTube. He/she has watched a number of poetry reading techniques by famous artists and writer, which became a reference for him/her to choose and read good poetry. "Luckily, there are examples on YouTube," Dinik said.

Information needs of students are inseparable from academic assignments that are intended to construct knowledge and complete assignments. This is different from adults whose

information needs are dominated by matters relating to work or daily activities. As found by Cole et al. (2013) in their research, students construct knowledge while they do school assignments. For this reason, students develop information searching behavior, always try to reduce information overload, improve search results, and enhance the usefulness of information delivered on mobile devices (Cole, 2012).

Table 3
School subjects whose information were sought via
smartphone in the past month

School subject(s)	Frequently		Infrequently		Never		Total	%
	Total	%	Total	%	Total	%		
Arts	305	61.0	141	28.2	54	10.8	500	100
Indonesian	298	59.6	113	22.6	89	17.8	500	100
Physical Education (P.E.)	156	31.2	293	58.6	51	10.2	500	100
Science	124	24.8	261	52.2	115	23.0	500	100
Islamic Education	254	50.8	128	25.6	118	23.6	500	100
Mathematics	313	62.6	165	33.0	22	4.4	500	100
English	189	37.8	231	46.2	80	16.0	500	100

In the past month, subjects whose information were sought by students on the internet tended to vary, depending on whether the teacher gave an assignment or not. The subjects whose information were the most frequently searched on the internet, according to students, were mathematics (62.6%), arts (61%), and Islamic education (50.8%). In addition, a number of other subjects also required students to search for information on the internet.

Several students who were studied said that the mathematics class they attended did not merely require them to solve math problems, but sometimes also invited students to discuss the application of mathematics in daily life. To find examples of the application of mathematics in daily life, students then searched on the internet.

In Islamic education class, teachers often did not only discuss material in class, but also asked students to search for some Islamic education information such as the benefits of fasting, correct prayers, etc., on the internet. Whereas in art class, students were usually assigned by the teacher to search for poetry, information about famous national and foreign writers, or famous plays that are often staged to increase students' knowledge.

Table 4
Information source preferences

Information sources	Frequently		Infrequently		Never		Total	%
	Total	%	Total	%	Total	%		
Google	401	80.2	99	19.8	0.0	0.0	500	100
YouTube	453	90.6	47	9.4	0.0	0.0	500	100
WhatsApp Group	79	15.8	242	48.4	179	35.8	500	100
"Ruangguru" Application	135	27.0	179	35.8	186	37.2	500	100

From various information sources available in cyberspace, the sources that were most often used by students in seeking information related to school work were YouTube (90.6%) and Google (80.2%). Among elementary school students, YouTube was more widely chosen as a source of information and it beat Google's popularity. All this time, students in Indonesia use the

term '*Mbah* Google' to express that everything can be sought and asked to Google, which is considered as the smart old man who knows everything. Although still being a choice of information sources, but the role of Google seems to have started to be replaced by YouTube. YouTube is popular among students because they find short shows and videos more interesting than searching for and reading information on Google.

> "I more often search for information on YouTube. There are more videos [on YouTube]. Anything can be found [on YouTube]. When I was looking for information about mathematics, there was a lot of information about mathematics on YouTube. As for arts, there are even more [videos related to art]. *Salah* instruction video is also available. Anyway, everything is on YouTube ... If on Google, there are lots of pictures and readings. I prefer searching on YouTube ... There is a visualization of the process and the steps", said Pembudi (12 years old), a student in Kediri.

YouTube is a web-based video platform that is currently increasing in popularity and attracting the attention of people around the world (Arthurs et al., 2018; Bärtl, 2018). To upload and access YouTube content are very easy and do not require a high level of technical knowledge (Fleck, Beckman, Sterns, & Hussey, 2014). In terms of age of users, YouTube is not only popular among adults, but is also very popular with children (Holland, 2016). Watching YouTube videos has become one of the daily activities of children (Tur-Viñes et al., 2018). Therefore, it is not surprising if to find academic information, children also rely on YouTube. As stated by Moghavvemi et al. (2018), students use YouTube for information seeking, entertainment, and academic learning. YouTube is indeed a platform that allows people to share information and creativity and provides a lot of availability: enrichment, diversity, and uniqueness (Zilka, 2018b).

4.2. Smartphone and YouTube generation in information seeking behavior

Ideally speaking, when students need information to complete academic assignments, they should search for and track information to school libraries or public libraries. However, due to the condition of libraries in many schools that are far from adequate, the attractiveness of libraries for students has arguably faded. In the millennial era, smartphone and internet have opened new opportunities for students to be able to independently and immediately search for the information they need.

Table 5
Reasons for students to use smartphone to find information related to academic assignments

Reasons	Frequency	Percentage
Obtaining information on Google via smartphone is faster than obtaining information in library.	182	36.4
YouTube can be accessed from smartphone. Explanations on YouTube are easier to understand and there are concrete examples and steps.	198	39.6
Via smartphone, discussions with classmates can be conducted on WhatsApp group to complete tasks.	51	10.2
Via smartphone, students can ask their friends on WhatsApp group about YouTube links that contain learning materials.	33	6.6
Smartphone can be used to access information on Google, YouTube, and WhatsApp group of classmates so that assignments and homework are	36	7.2

quickly completed.		
Total	500	100

This study found that as many as 39.6% of students chose to use smartphone to find information related to academic assignments because with smartphone, they could access YouTube. According to students, explanations on YouTube were easier to understand and YouTube provided examples and visualization of concrete steps. As many as 36.4% of respondents said they chose to use a smartphone because it was faster to get information on Google than in the library. With smartphone, some students also claimed to be able to have discussion with other friends and ask friends about YouTube links and other information that they needed. A number of informants stated that in addition to their limited time for searching information in the library, they also doubted whether the information they needed was available in the library. By searching for information on the channels available on the internet, especially YouTube and Google, according to a number of respondents, the information needed was more quickly obtained anywhere in a flexible time.

In their study, Barry et al. (2016) suggested that in this millennial era, 'YouTube Generation' or 'Connected Generation' emerged. They found data which indicated that 80% of this generation actively interacted with social media and integrated it into their educational experiences. The integration of social media into the learning process is conducted by the connected generation because this generation routinely creates and publishes blogs, podcasts, and online videos. Some researchers also concluded that the traditional learning approach oriented to student-teacher relations has changed and has been replaced by informal learning independently using YouTube (Dreon et al., 2011; Moghavvemi et al., 2018; Orús et al., 2016).

Table 6
Teacher's directions to students in the learning process

Teachers directed students by:	Frequently		Infrequently		Never		Total	
	F	%	F	%	F	%	F	%
Explaining the use of mobile phones or laptops correctly	131	26.2	206	41.2	163	32.6	500	100
Providing information for students to search for information on the internet (YouTube, Google) to construct material understanding and knowledge and to complete school assignments	136	27.2	205	41.0	159	31.8	500	100
Explaining information and communication technology	87	17.4	183	36.6	230	46.0	500	100
Explaining on how to find information on the internet for school assignments	105	21.0	166	33.2	229	45.8	500	100
Directing students to find information in the library for completing school assignments	74	14.8	281	56.2	145	29.0	500	100

Observing and responding to this development, Hoogerheide et al. (2019) have suggested that teaching strategy using enjoyable instructional video is more suitable for primary school students than restudying and summarizing. Among teachers, the use of YouTube videos is believed to efficiently support the learning process, increase student interest, and enrich covered subject matter, with minimal financial and time expenditure (Tamim, 2013). According to this

study, although some students claimed that their teachers have often directed students to use the internet in understanding learning materials, constructing knowledge, and completing student assignments, but most students generally utilized internet independently. Around 27.2% of students said that they were often directed by their teachers to use the internet (Google) to search for information to support material understanding, knowledge construction, and completion of academic assignments. Meanwhile, as many as 41% of respondents said they were rarely directed by their teachers, and even 31.8% of respondents said they were never directed by their teachers to use the internet in search of information.

More than half of the respondents (56.2%) claimed that their teachers were rarely directed them to use the library when they needed information. In fact, 29% of respondents claimed that they had never been directed by their teacher. Only 14.8% of respondents claimed that they were often directed by their teachers to use the library. The role of the teacher can be said to be relatively low in introducing and teaching how to utilize the library, information technology, and the internet. In this research, the teachers preferred to leave everything to the students' own initiative and creativity in using information sources during the learning process rather than utilizing social media (YouTube) in teaching activities.

4.3. Opinions about and confidence in the school library as a source of academic information

In many schools in urban areas such as in research locations, library facilities are generally quite adequate. Even in prominent private schools, the school library is quite representative as a source of information. A number of informants interviewed stated that the libraries in their schools were quite comfortable and had a fairly diverse collection of books. However, according to most students (38.4%), school library collection was generally too much dominated by textbooks, making students bored. In many schools, 13.4% of respondents said they went to the library only to read and borrow novels during recess. The library was also often used by some students (9.8%) as a place for discussion to complete group assignments.

Table 7
Students' opinions about the role of libraries

Opinions	Frequency	Percentage
Students go to the library only to read and borrow novels during recess.	67	13.4
The library has too many textbooks.	192	38.4
The library lacks a collection of books to complete assignments.	45	9.0
Google and YouTube have more complete information than libraries.	94	18.8
Students visit the library only to read textbooks.	53	10.6
The library is used as a place for discussion to complete group assignments.	49	9.8
Total	500	100

In order to seek information needed to support the completion of academic assignments, 9% of students stated that the library lacked the collection of books they needed to do assignments. As many as 18.8% of respondents claimed that YouTube and Google actually provided more complete information than the library did. From the results of in-depth interviews, it is known that the limited time spent at school was a major obstacle that makes it impossible for most students to make full use of the library. Furthermore, with the availability of smartphone and internet, students' information needs are no longer a monopoly of the library. In fact, most

respondents claimed that it was easier obtain the information needed for school assignments on the internet than in the school library.

As search engine sites emerge and social media become more diverse, sources of information become more numerous and many people, including students, find it easier to find information via mobile phone technology devices. Information availability factor, which is supported by the convenience and the speed of obtaining information via smartphone, makes many undergraduate students utilize information sources on information provider sites and social media (Kim et al., 2013; Kim et al. 2014). In this study, it was found that primary school students also chose information sources provided by social media platforms and Google. This fact is compounded by the growing confidence in the sources of information available on YouTube and Google rather than in their school libraries. Although not comparing with the library, this study is no different from the study conducted by Kim et al. (2011) on undergraduate students. With different levels of confidence, these students considered social media to be an important source of information in an academic context.

Table 8
Confidence in information sources in the library

Confidence in Information Sources in the Library	Frequency	Percentage
Relying more on libraries than internet information sources accessed from smartphone	43	8.6
Relying more on sources of information from the internet (YouTube or Google) via smartphone than libraries	203	40.6
Trying to find information in the library first; browsing on the internet (Google) using a smartphone only if the information is not available in the library	34	6.8
Asking parents first; browsing on the internet (YouTube or Google) using a smartphone if the help from parents is unsatisfactory	145	29.0
Asking the teacher first, then browsing on the internet (YouTube or Google) via a smartphone	75	15.0
Total	500	100.0

Of the 500 students interviewed, 40.6% of respondents claimed that they relied more on information sources from the internet, such as YouTube and Google, rather than from libraries. Among students who thought pragmatically, they would first choose to ask their parents about school assignment and only then if their parents' help was not satisfactory, they would browse the information on the internet using a smartphone. The study found that only 8.6% of students said they relied more on libraries than on information available on the internet. As many as 6.8% of respondents said that they would first search for information in the library, but if they did not find the information they needed, then they would search for information on Google, YouTube, or other sources of information on the internet.

5. Conclusion and implication for school librarians in Indonesia

The study found that information seeking behavior patterns that developed among elementary school students had experienced dramatic changes. Unlike the previous generation who had no choice other than seeking information in the library, now there have been at least three new developments that need to be anticipated by school librarians in Indonesia. First, smart

phone is a technology that cannot be separated from the lives of elementary school students, especially in the process of seeking information for academic assignments. There has been a change in information seeking behavior among elementary students who no longer rely solely on information from textbook sources in the library, but rather rely more on social media (YouTube) using smartphone.

Second, libraries no longer monopolize their role as institutions of information sources because of the presence of smartphone that are alternative choices for elementary school students to access information sources, such as YouTube and Google. For elementary school students, YouTube is a social media platform that provides information that is easily understood, while Google offers an unlimited variety of information. In the millennial era, librarians and libraries are demanded to be more proactive and able to seize opportunities to serve the changing characteristics of primary school students who are part of Generation Z, Generation Alpha, and YouTube Generation.

Third, students' confidence in the library as a source of information began to fade. For students in the millennial era, libraries are more often perceived as sources of information for school textbooks and not as sources of information that can provide broad and varied information needs for students. YouTube and Google are considered by students to have more complete information and are able to meet students' information needs. As stated in several studies, the development of smartphone technology has changed the way of learning of Generation Z and Generation Alpha, who will soon dominate the world (Roblek et al., 2019; Arkhipova et al., 2019). Therefore, educational institutions including libraries have time to respond to this phenomenon.

Referring to the conclusions of this study, there are implications for school librarians and roles that should be developed. First, with limited information searching abilities of primary school students, other than teacher guidance, librarians are also needed to develop digital literacy and information literacy skills among elementary school students. That is, even though students are accustomed to searching information in cyberspace via smartphone, the support of digital and information literacy capabilities is still needed so that students will be able use information searching strategies and able to sort out which sources of information are appropriate and not appropriate for academic purposes. As stated by Kim et al. (2014), Meyers et al. (2013), Tan (2013), and Kim and Sin (2016), information seeking activities via Google and YouTube that are informal learning require digital and information literacy capabilities.

Second, to provide digital literacy skills to students, school librarians need to collaborate with teachers to design and conduct learning activities based on digital literacy and information literacy. Librarians must also take part in changing the way of learning and the choice of information sources of YouTube Generation by collaborating with teachers in developing digital and information literacy skills among students. For this reason, the role of school librarians cannot be separated from collaborative activities with teachers (Avery, 2014; McKeever et al., 2017). If librarians want to maintain the existence of school libraries, based on findings of this study about information seeking behavior among elementary schools, then collaboration conducted by teachers and librarians in Indonesia is now pretty urgent.

Third, by considering changes in the characteristics and learning styles of elementary school students as school library users and parts of Generation Z and Generation Alpha ("Why Generation Z Learners Prefer YouTube Lessons Over Printed Books; Video learning outranks printed books in surveys," 2018), then to develop the role of the school library and librarian is not to place YouTube as a threat, but rather as an "entrance" to encourage students to use the

school library. Providing an audio visual collection containing academic content sourced from YouTube in the library without using a smartphone is one strategy so that the existence of the school library does not fade.

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