Self-Acces in Digital Literacy: Evaluating the Quality of Information and Reliability of Sources in Writing Academic Essay

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Abstract. Digital literacy skills have a positive impact on managing academic tasks, including writing academic essays. This study aims to describe the reliability of references and the quality of information content in student academic essays. This research focuses on students' digital literacy activities in accessing valid reference sources and to produce digital content that has quality information content. This research was conducted on 30 students who participated in face-to-face and independent learning and independent learning in writing academic essays. Students' academic essays were analyzed to obtain data on the reliability of references and the quality of information content. Student responses were obtained from questionnaires and interviews to gather data on the reasons for selecting references. Data analysis shows that students still use blogs, Wikipedia, and online newspapers as references on the grounds of their relevance to the writing being developed. The results of the analysis of the information content of student academic essays show that students can make academic essays that have quality information content worthy of being disseminated in the digital world.

Keywords: References, Academic Essays, Reliability, Information Content.

INTRODUCTION

The concept of digital literacy has emerged since the 1990s. Digital literacy by Gilster is aligned with the ability to understand and use information from multiple digital sources Gilster (1997). Furthermore, digital literacy also includes the ability to find and disseminate information in the digital world (Lankshear & Knobel, 2008; Hafner, et al 2008; Owen, et al 2016; Hagel 2015). Digital literacy skills contain various other competencies that are used simultaneously. Bawden states there are four dimensions in digital literacy, namely basic skills (communication and information technology skills), knowledge of background information (understanding the nature of information), main skills (finding, navigating, synthesizing, analyzing, creating, and communicating), and perspective (independence and ethical behavior) (Bawden, 2008). This dimension of digital literacy skills is a necessity in the digital era to be able to access, create, and communicate information in the digital world.

The distribution of various information in the digital world can be a basic capital for learning. For this reason, basic skills in digital literacy are often a prerequisite for higher education studies so they are not usually taught at the tertiary level Owen, et al (2016). Student's success in the future is always linked to how students take advantage of 'digital literacy' Pangrazio (2016). Teachers are required to innovatively develop various learning strategies to order to improve students' digital literacy skills.

One of the strategies that are increasingly being developed in the current era is to utilize various kinds of media and digital learning resources so that students can be more skilled and independent in managing their learning tasks. In the context of learning, students are given the freedom to manage their assignments by utilizing media and digital learning resources to complete their learning tasks. Teachers can help students use certain digital media or technology in managing their assignments.

The use of digital technology in the context of learning is intended so that students can take advantage of the various digital devices they have for learning. The results of many studies show that most students in the current era only use competencies and their digital devices to be active in social media, messaging applications, internet browsers, and search engines (Keengwe, 2007; Kennedy & Fox, 2009; Rowlands, et al. 2008; Margaryan & Liilejohn, 2008; Williams & Rowlands, 2007) and such use has not yet reached the level of digital literacy Nelson, et al (2016). Students need guidance to maximize their competence and digital tools so that they can be directed to their learning needs. Teachers can help students use certain digital media or technology in managing their duties as students. The use of media and digital learning resources is expected to help students develop digital literacy skills. Quite a lot of literature state that students need intensive guidance in utilizing digital technology to support their learning process (Keengwe, 2007; Kennedy & Fox, 2009; Margaryan & Liilejohn, 2008).

Research shows that the use of technology in students' lives does not have a significant impact on their ability to seek and obtain information (Rowlands, et al. 2008; Williams & Rowlands, 2007). This study shows that the use of search engines

is not accompanied by attention to the evaluation of information obtained, for example in terms of relevance, accuracy, or authority (Rowlands, et al. 2008; Williams & Rowlands, 2007). Information evaluation is needed by students to test the relevance, accuracy, or authority so that the information obtained is valid and scientific. The ability to evaluate information is a necessity in the information age, given the large amount of information contained in the digital world. Evaluating information is also a prerequisite for digital literacy skills Bawden (2008). Digital literacy skills provide evaluative abilities on the reliability of information to be able to see the quality, validity, and scientific of information so that it can be used in the context of learning.

This study describes the reliability of sources and the quality of information contained in students' academic essays. Students are given the task of writing academic essays through learning which is designed in two stages, namely face-to-face and independently. This study also uses the Zotero application as a reference management application to guide students on how to organize information that can be used in writing academic essays. It is designed to provide flexibility for students to manage their academic essay writing tasks independently by utilizing the Zotero application in managing information sources. The Zotero application is used to manage, share, and find references for scientific writing needs Utomo, et al (2017).

Quantitative descriptive analysis is used to show students' ability to use reliable reference sources. Besides, this study also describes students' perceptions of reference sources that are used for writing academic essays. The results of the academic essay writing assignment were analyzed to see the reliability of the source and the quality of the information content. In particular, this study highlights digital literacy skills in writing academic essays. The novelty of this study lies in the ability of students to utilize digital literacy skills for learning needs, especially writing academic essays. Also, this study contributes to the literature on independent learning that shows direct experience in accessing various information for learning needs through digital literacy.

RESEARCH METHOD

Research design

This study was a quantitative research using quantitative descriptive analysis techniques Cresweel (2015). Interview is also used in data collection to confirm students' answers on the questionnaire and the results of academic essay writing assignments. This design allows researchers to manage a variety of data to gain a comprehensive understanding of students' experience in writing academic essays. All students' responses were recorded for further analysis. This study took 30 students who were joined in one class as the sample.

Learning design

Learning is carried out using blended learning. Face-to-face use is used to explain the material, assignments, and Zotero application media is chosen to support students in writing their academic essays Utomo, et al (2017). Besides, this

application is available free of charge and easy to operate. Independent learning is designed so that students learn independently and complete their writing assignments by utilizing various online learning resources that can be accessed independently. Academic essay writing assignments are collected after going through peer reviews, tutors' or teachers' reviews, and editing. The essay writing that is collected is writing that fulfills the elements of a good essay writing.

Quantitative data analysis

Quantitative data are presented in descriptive form and this data was analyzed using quantitative descriptive techniques. The data were obtained from the students' responses through questionnaire filling, analysis of the quality of student academic essay information content with indicators of completeness, information presentation (format), relevance, and accuracy Gurkut & Nat (2016). This data is then presented in the form of a percentage to see the tendency of students to use digital literacy skills in academic essay assignments. Students' responses were also obtained from interviews and then compared with expert evaluations from various sources.

RESULT AND DICSUSSION

This section will describe the results obtained from the data analysis of the source reliability variables and the quality of information content.

Reference source reliability

The reliability of the source can be seen from the reference sources used by students in their academic essays. The reliability of this source is related to the origin of the reference sources used. The source of the references examined is from the internet. It is to see to what extent students recognize the valid reference sources taken from the internet.

From the students' essay writing, there are at least five online reference sources used by students on developing their academic writing. The reference sources are Blogspot, Wikipedia, scientific journals, online newspaper articles, and institutional websites. Based on the search results on student academic essays, there are 53.33% of students using Blogspot as a reference source, 70% using Wikipedia, 86.67% using scientific journals (online), 46.67% using online newspapers, and 60% of students using information obtained from website of a particular institution. The following is a summary of the use of online references in student academic essay articles.

Table 1. Percentage of online reference sources used

No.	Reference Types	Total	Percent
1.	Blogspot	16	53,33%
2.	Wikipedia	21	70%
3.	Scientific journal	26	86,67%
4.	Online newspaper	14	46,67%
5.	Institution website	18	60%

Blogspot.Com Reference

Students' academic essays that use Blogspot.com as an online reference source are 16 articles or 53.33%. Furthermore, based on the results obtained from the questionnaire, there were 20 or 66.67% students who still considered that blog could still be used as a reference source, as many as 4 people or 13.33% stated that the blog could not be used as a reference, and 6 people or 20% expressed their doubt. This indicates that the personal blog is still one of the sites visited by students to find articles related to their academic assignments. Students argue that some blogs provide scientific writings, such as papers, academic essays, or journal articles. The writing fulfills the requirements as scientific writing so that it is believed to be used as a reference source for writing. Students who refuse to use the information in the as a reference source stated a blog is a site that is managed privately and there are no other parties involved in managing the blog so that the posts in the blog are the work of the blog owner that are not certified by other people or experts.
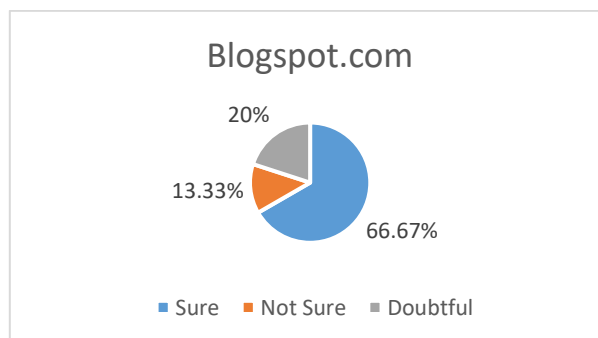

Figure 1. Student perceptions of using blogspot.com as a reference source

Wikipedia reference

The number of students' academic essay using Wikipedia as the reference sources is 21 out of 30 or 70%. Furthermore, based on the results obtained from 30 questionnaires distributed to students, there were 26 people or 86.67% of students who stated that Wikipedia could be used as a reference source. As many as 3 people or 10% of students stated that Wikipedia could not be used as a reference source, and 1 person or 3.33% expressed doubt. Most student articles use Wikipedia as a reliable reference for scientific writing. This was confirmed from the questionnaire where most students believed that Wikipedia was a reliable source to serve as a scientific reference. Students reasoned that Wikipedia provides a lot of information that has a high level of accuracy because it is managed by certain institutions and almost all of the information contained is scientific information. This is also supported by written references contained in Wikipedia, some of which have prepared website links which are easy to browse. Meanwhile, students who were not sure argue that anyone could post articles on Wikipedia, without confirmation whether the writer of the article was an expert or not. The Wikipedia website is also not a confirmed academic institution.
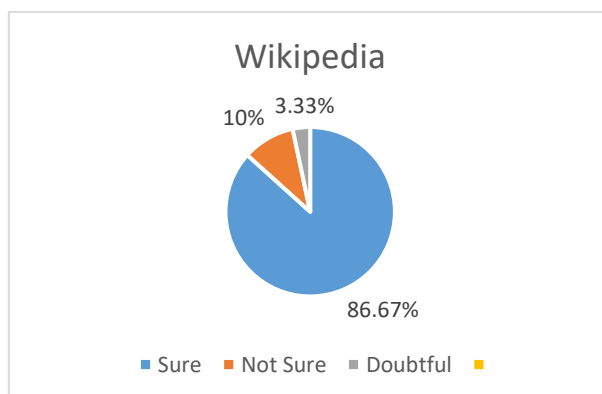
Figure 2. Students' perceptions of using wikipedia as a reference source scientific journal reference sources

Scientific journal reference

The number of student academic essay using scientific journal reference sources was 26 or 86.67%. Furthermore, based on the results obtained from the questionnaire, all students (100%) agree that scientific journals were the most valid reference sources for writing in the scientific genre. Some students do not use scientific journals as references in their writing because the search for references is prioritized in terms of the relevance to their writing. Searching through Google search engine generate many references that are not in the form of scientific journal websites. As a result, so the articles referred by the students were not from the websites. However, all students believe that scientific journals are valid references and can be used in scientific writings.

The scientific journals referred to in this research are scientific articles that are published in journals and have their link (website). Some journal links are free and some are paid. In the current era, access to online scientific journals can be easily obtained because they are available from within the country and from abroad.
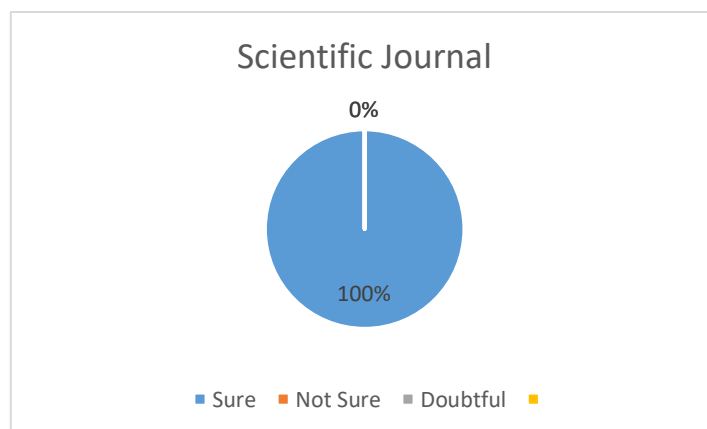
Figure 3. Student perceptions of the use of scientific journal websites as reference source

Online newspaper reference

The number of student academic essay articles using online newspapers as a reference source was 14 or 46.67%. Students argued that online newspapers present data or facts according to what happened in the field. The data or facts can be used as a reference source to strengthen arguments or thesis statements. From the results of the questionnaire analysis, 19 or 63.33% students agree that the data or facts presented in online newspapers could be used as a reference source for scientific writing while 8 or 26.27% students disagree. Students assumed that the information is still not convincing, because sometimes some information is made in such a way for certain needs. The information in newspapers must be carefully and critically selected to obtain information that can be used as a reference source in scientific writing. Furthermore, as many as 3 people or 10% of students expressed doubt.
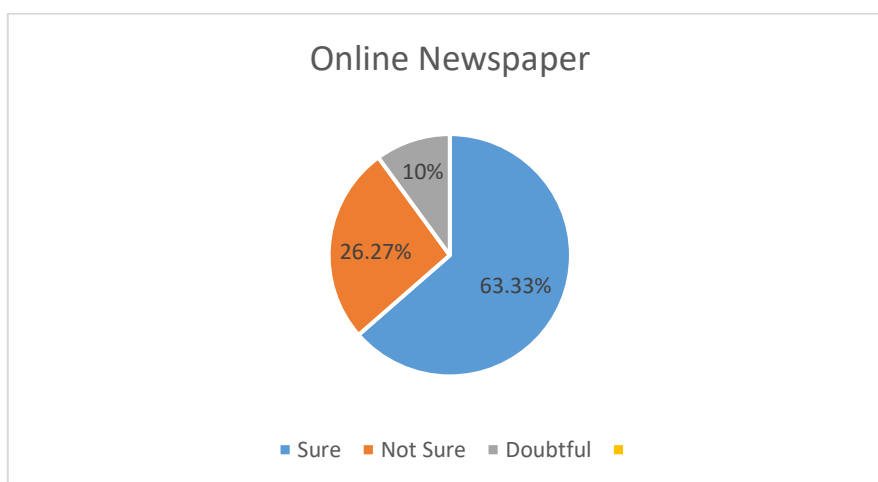

Figure 4. Student perceptions of using online newspapers as a reference source

Reference sources obtained from the link (website) of the institution

The number of student academic essay using information from certain institutional websites was 18 or 60%. Based on the results obtained from the questionnaire, 28 students or 93.33% state that the information obtained from certain institutional websites could be a valid reference source. Students argued that it is because the information on the institution's website has gone through several stages of editing and review before being published on the website. The institutional website also posts information related only to institution or their achievements. Institutional websites using the .ac.id on its link is a trusted website because it can be ascertained that the website officially belongs to an institution. Furthermore, there were no students stating that they websites could not be used, and there were only 2 students or 6.67% who expressed doubt.
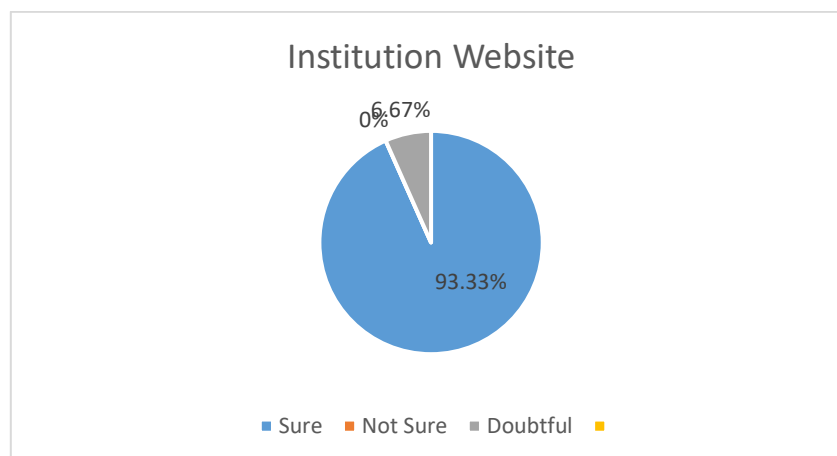
Figure 5. Student perceptions of the use of institutional web information as a reference source

Quality of information content

The quality of information content can be seen from the information presented in students' academic essays. The essay writing is then given to the assessor to see the quality of the content their academic essays. Indicators of the quality of information content are completeness, information presentation (format), relevance, and accuracy. Furthermore, these indicators are made in the form of a statement questionnaire that will be filled out by the assessor. The following is a description of the results of the quality of the information content in the students' academic essays.

Completeness

For the first indicator, the completeness of the information, it includes information items that must be included in an academic essay. The information items are the thesis statement, arguments, and evidence development (evidence or data that support the thesis statement). The following table shows the data on the results of the examination of the completeness of information in students' academic essays.

Table 2. Percentage of total academic essays that fulfill completeness information items

No.	Completeness information items	Total	Percent
1.	Thesis statement	24	80%
2.	Argument	30	100%
3.	Evidence development	30	100%

Information presentation indicator (format)

The second indicator which is information presentation (format) is the academic essay format itself. The format includes an introduction, content, conclusion, and reference. The following shows the data on the results of the examination of the student academic essay format.

Table 3. Percentage number of completed academic essay formats

No.	Completed format items	Total	Percent
1.	Introduction	30	100%
2.	Content	30	100%
3.	Conclusion	30	100%
4.	Reference	30	100%

Relevance

The relevant indicator means the relevance of the content of the information to the theme being discussed in the essay. The relevance is seen from the presentation of the thesis and the information conveyed in the content of the academic essay. The following shows the data on the results of the examinations on the relevance of information in students' academic essays.

Table 4. Percentage number of completeness of information relevance items

No.	Information relevance items	Total	Percent
1.	The relationship between thesis and theme	28	93,33%
2.	The relationship of information content with themes	28	93,33%

Accuracy

The last indicator which is accuracy includes the presentation of the evidence or data and the references. The following table shows the data on the results of the examination on the accuracy of the information presented in the student's academic essay.

Table 5. The percentage of the accuracy of academic essay information items

No.	Accuracy information items	Total	Percent
1.	Evidence development	30	100%
2.	The reference	30	100%

The results of the analysis for the quality of information content indicate that most of the students' academic essays have fulfilled all the indicators. This indicates that the academic essays have met the standards for dissemination on a digital context. It also indicates that the students are able to write academic essays that can be disseminated to the public to read, especially in the digital world. Academic essay used as digital content is categorized as a scientific writing.

Discussion

In this study, researchers tried to reveal students' digital literacy skills in accessing, analyzing, using, and distributing digital content that can be used as references. This study involved 30 students who took part in learning to write academic essays by dividing into two stages, namely the face-to-face stage and the independent stage (online). At face-to-face, the instructions on the tasks were explained to the students, as well as the use of the Zotero application media as a reference management application to use in writing. Furthermore, in the

independent stage (online), students wrote the academic essays which then were reviewed by their peers and tutors.

The results obtained from student academic essays show that there are at least five types of online references commonly used, namely Blogspot.com, Wikipedia, scientific journal websites, online newspapers, and institutional websites. From these results, students still tend to have different opinions for the four reference sources. Students agree that scientific journal websites are the most valid references and can be used as references for scientific writing. The use of scientific journals as references has increased from time to time Rose-Wiles (2018) and it is required by some journal publications.

The use of Blogspot.com as a reference source for scientific writing is not recommended. As a reference for scientific writing, blogs are unreliable references Pretorius (2018) because blogs are private websites whose publication is not confirmed by experts. Students who use the Blogspot reference (see figure 1) argued that the writing found in the blog has relevance to the topic of their writing and some blogs provide writing that has the characteristics of scientific writing; and one of them is having references. This also happens to several other reference sources such as Wikipedia and online newspapers (see Figures 2 & 4).

The main reason for the students searching references in the digital world is the relevance of the posts that was found to the topic they are writing. The use of certain keywords to find writing references makes all posts that are relevant to these keywords appear marked. This finding is significant because reference reliability is not just to test relevance, but also must be able to evaluate the information obtained to be used as a reference source. The use of relevance as a condition for finding references is still not sufficient. Students should consider or evaluate the reliability of sources, such as websites that provide references, reference content, and authors or reference providers. These three things are the requirements to evaluate references obtained from the internet.

Furthermore, 30 student academic essays were examined based on indicators of the quality of information content. Information quality indicators used are completeness, information presentation (format), relevance, and accuracy Utomo, et al (2017). The results obtained showed that the students had fulfilled the quality aspects of the information content by fulfilling almost all the required indicators (see Table 2, 3, 4, 5). The quality of information is the most important item to fulfill so that readers who access the information are satisfied with what they get Utomo, et al (2017).

CONCLUSION

This research describes the ability of students to write academic essays, especially on the aspects of source reliability and quality of information content. First, the results of this study indicate that students still prioritize relevance in finding referral sources on the internet. The reliability of the source can only be seen from the relevance of the information to the writing that the students developed and the type of writing that is used as a reference. These two things do not guarantee the reliability of the reference sources, and students still need to

carry out evaluations such as information provider websites, information content quality, and information authors.

Second, the academic essays written by the students meet the quality aspects of information content. Students' writing of have met the indicators of the quality of information content, namely completeness, presentation of information (format), relevant, and accurate. Finally, the most important thing in this study is how students use digital literacy skills to complete their academic assignments, either with tutor guidance or independently. The author proposes that guidance to improve students' digital literacy skills can be maximized so that students have provisions for independent learning.

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