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Digital Literacy and Academic Performance of Students' Self-Directed Learning Readiness

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ABSTRACT

The students mostly use the internet in communication and academic activities as digital literacy competencies in Industrial Revolution 4.0 era. It is called self-directed learning readiness when the students take the initiative without others' helping in planning, implementing, and evaluating learning processes. This study aimed to analyze the relationship between digital literacy competence and students' academic performance in self-directed learning readiness in the English language department in STKIP PGRI Sidoarjo. This study used a quasi-experimental design. The research instrument was a questionnaire and students' GPA data. The relationship between digital literacy competence and academic performance on self-directed learning readiness was analyzed with a chi-square test. The research variables were measured using an ordinal scale based on the attitudes and statements answered by the students. The data were analyzed using correlation test statistics to test the proposed hypothesis. The analysis of self-directed learning readiness scores showed that 79,2% of students had high levels and 20,8% of students had low levels. Chi-square test results to assess the relationship between digital literacy competence and self-directed learning readiness obtained a p-value of 0.198, and the relationship between academic performance and self-directed learning readiness showed a p-value of 0.493. There was a significant relationship between digital literacy competence and academic performance with self-directed learning readiness in EFL students.

Keywords: Digital literacy competence, academic performance, EFL students, self-directed learning readiness

ABSTRAK

Para siswa sebagian besar menggunakan internet dalam komunikasi dan kegiatan akademik sebagai kompetensi literasi digital di era Revolusi Industri 4.0. Kesiapan belajar mandiri adalah ketika siswa mengambil inisiatif tanpa bantuan orang lain dalam merencanakan, melaksanakan, dan mengevaluasi proses pembelajaran. Penelitian ini bertujuan untuk menganalisis hubungan antara kompetensi literasi digital dengan kinerja akademik siswa dalam kesiapan belajar mandiri di jurusan Bahasa Inggris di STKIP PGRI Sidoarjo. Penelitian ini menggunakan desain kuasi-eksperimental. Instrumen penelitian adalah angket dan data IPK siswa. Hubungan antara kompetensi literasi digital dan kinerja akademik terhadap kesiapan belajar mandiri dianalisis dengan uji chi-kuadrat. Variabel penelitian diukur dengan menggunakan skala ordinal berdasarkan sikap dan pernyataan yang dijawab oleh siswa. Data dianalisis menggunakan statistik uji korelasi untuk menguji hipotesis yang

diajukan. Analisis skor kesiapan belajar mandiri menunjukkan bahwa 79,2% siswa memiliki tingkat tinggi dan 20,8% siswa memiliki tingkat rendah. Hasil uji chi-kuadrat untuk menilai hubungan kompetensi literasi digital dengan kesiapan belajar mandiri diperoleh p-value 0,198, dan hubungan antara prestasi akademik dengan kesiapan belajar mandiri menunjukkan p-value 0,493. Terdapat hubungan yang signifikan antara kompetensi literasi digital dan kinerja akademik dengan kesiapan belajar mandiri pada siswa EFL.

Kata kunci: Kompetensi literasi digital, kinerja akademik, siswa EFL, kesiapan belajar mandiri

INTRODUCTION

Facing the 4.0 Revolution era, students, as the millennial generation, are expected to realize a golden Indonesia capable of taking part. Students must believe that they have new literacy competencies (Sari & Prasetyo, 2021). Literacy for students can be interpreted as an individual's ability to use all of their potential and skills in life, not just reading and writing skills. An individual's ability to read, write, speak, calculate, and solve problems at the skill level required in work, family, and society. Sari (2019) reported that the impact of digital technology has direct consequences for the future of education adults. Digital learning technology continues to grow so that it affects efforts in education in the context of formal, informal, and non-formal. An interesting problem in the relationship of digital literacy is internet media literacy, reading literacy, and writing literacy college students.

Literacy is a person's ability to understand, use and contemplate written text, achieve one's goals, and develop knowledge and potential, to participate in a community (Sari & Wardhani, 2020). Digital literacy is the ability to receive and use knowledge to create and share knowledge and agree with the knowledge made by others (Sari D. M., 2019). Literacy knowledge is related to acquiring information that will form knowledge developed through literacy in reading and writing (Sari D. M., 2020). Concerning new literacy, it is important for graduates to become concerned with the learning process in higher education. Higher education is now entering a new challenge in the era of the Industrial Revolution 4.0. Entering the Industrial Revolution era 4.0 needs to be strengthened with digital literacy because the students on the campus are generation Z with characteristics attached to the internet and online (Arizena & Sari, 2021).

Self-directed learning readiness is a skill where one can self-determine and choose goals to be achieved, plan a strategy that will be done, solve problems, manage self-management, and evaluate thinking and performance. These skills will increase knowledge, individual skills, and achievements (Gibbons, 2002). The students will have their initiative to keep searching, discovering, and choosing what to be their needs, such as title and research variable. Besides, they are also skilled in managing time in compiling the final project and can arrange a schedule for discussing ideas made to the supervisor. The research results of Hyland & Kranzow (2011) revealed that self-directed learning readiness positively affects academic performance in both undergraduate and postgraduate students.

To achieve maximum good results in the learning process, someone is not only required to be able to use digital devices well but also has to understand all things related to digital technology. It is also known by the term digital literacy. Digital literacy can be defined as an individual's ability to apply skills functional on digital devices so he can find and select information, think critically, be creative, collaborate with others, communicate effectively,

and still care about security electronics, and socio-cultural context growing (Sari D. M., 2019). In the context of education, good digital literacy also plays a role in developing knowledge about the subject matter, encouraging the desire to know and creativity they have (Rasyad & Sari, 2020).

Using technologies such as e-text and e-library make students feel better because they allow them to do good presentations and be creative as well as up-to-date. Another research conducted by Bliss (2019) shows that students who extensively and intensively use technology tend to easy to adopt strategy learning by using various technological tools to support the learning process. Research conducted by Menon & Fink (2019) also shows the results that digital literacy has an impact positively on academic performance. Digital literacy can contribute towards the completion of more tasks efficiently through software assistance and computer programs, such as processor words or worksheets.

Regarding self-directed learning readiness, research shows that this variable is more often tested in educational contexts online-based. According to Koltay (2011), the development of scientific knowledge and technology will improve human self-directed learning readiness skills. Through the use of technology and digital device, the individual is given space to develop self-directed learning readiness skills through various existing activities and resources, such as participation in online group learning, reflective writing activities, and online dialogue. The study results also show a positive correlation between self-directed learning readiness and learning performance in students who study in an online-based environment (Madhavi & Madhavi, 2017). Self-directed learning is a process in which individuals learn without the help of others, supported by digital technology and mobile or technology applications developed to take advantage of learning concepts independently (Curran, et al., 2019). Becoming independent learners is a sustainable goal, but not all students have the self-regulation skills needed for education in today's era.

Kwon & Hyun (2014) presented the research results on the digital literacy application in some schools in the United Kingdom, which emphasizes several significant points, such as allowing students to participate in choosing the lesson topic, fostering student independence in learning, and enhancing students' communication skills through the use of digital technology. This demonstrates that self-directed learning preparedness and digital literacy cannot be separated in the current digital environment. It implies that self-directed learning ready skills in the learning process can be enhanced with the help of digital literacy. On the other hand, digital literacy skills can affect student academic performance. Academic performance is a person's observable or measurable behavior in a particular situation. To assess academic performance, tests can be carried out. Tests to assess academic performance have their standards in each field of science. Academic performance depends on various factors, such as cognitive aspects, learning strategies, assessment tools, psychosocial factors, learning environment, motivation, and learning readiness. Academically, successful independent students are those who understand, value, and engage in learning in appropriate ways. Walker et al. (2006) stated that the role of intrinsic motivation, self-confidence, and cognitive processes gave a positive relationship to the achievement of academic success.

Students must have a high level of digital literacy in order to grasp and utilize information in various forms from a wide range of sources and via a computer. The student is given space through technology and digital devices to develop their self-directed learning skills through various existing activities and resources, such as participation in online dialogue, reflective writing activities, and online learning groups. The study's findings also show a positive relationship of self-directed learning and learning performance in students

who learn online (digital literacy) (Ting, 2015). In the context of education, digital literacy also contributes to knowledge development through fostering creativity. The study demonstrates that the usage of technologies, such as e-library and e-text makes learning more fun for students because it enables them to provide effective presentations and be both creative and current. Another study demonstrates that students who utilize technology widely and actively adopt learning strategies employing a variety of technological instruments to help the learning process with relative ease (Hyland & Kranzow, 2011).

Based on the phenomenon and the data obtained, the research problem statement is "Is there any relationship between digital literacy competence, academic performance, and self-directed learning readiness?".

METHOD

This study purposed to know the relationship of digital literacy competence, academic performance, and self-directed learning readiness. This current study applied a quasi-experimental design. The population of this study was 95 students of the English education department of STKIP PGRI Sidoarjo. The primary data of this study were obtained by distributing questionnaires. The self-directed learning readiness scale is an instrument that is often used in research to measure self-directed learning readiness. These characteristics were developed into 42 questions to assess the readiness to learn independently. Each question is scored 1-5 on a Likert scale. A final score of more than or equal to 150 means that the student is assessed as having independent learning readiness, while a score of less than 150 means that the student does not apply independent learning. The secondary data were obtained from each student's GPA (Gradual Achievement Index) from levels one to five. The data gained were analyzed with the SPSS 20 statistical program. Univariate data analysis is carried out to describe digital literacy competence, academic performance, and self-directed learning readiness. Furthermore, bivariate data analysis was carried out to analyze the relationship between the dependent and independent variables. The data analysis used chi-square.

FINDINGS AND DISCUSSION

STUDENTS' DIGITAL LITERACY COMPETENCE

The findings of this study suggest that in learning, multiple activities use digital information in the form of assignments or academic projects. Student learning outcomes are required to produce products in academics using digital information (Makarim & Sari, 2021). In this study, the researcher surveyed students' digital literacy based on four digital literacy skills: basic internet skills, finding and obtaining information, sources of information that are often used, and the ability to use information effectively. For basic internet skills, the results obtained are based on a survey presented in the following figure.

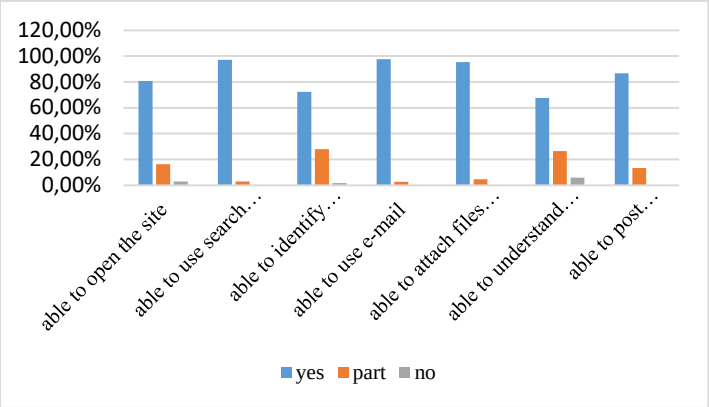

Figure 1. Students' ability to use the internet

The data shows that most students successfully use the information technology and internet in learning. It is fast and easy to obtain the information needed to facilitate them in the learning process. Most respondents stated that they could use several search tools to find and obtain information (97.1%). They could identify results search (72.3%), grasp how to utilize e-mail (97.5%), and attach files to e-mail (95.4%). However, those who grasp the basic concepts of the internet are 67.6%. The student who can post something on the Web is 86.8%. For the ability to find and obtain information, the results obtained based on the survey are presented in the following figure.

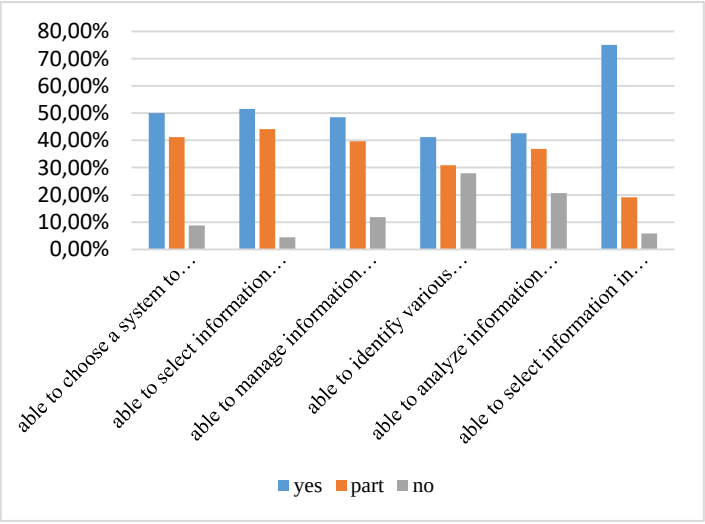

Figure 2. Students' ability to find and obtain information

As for student information literacy, the data shows that 50% of respondents have been able to choose the most suitable information retrieval system to access the information they need. More than half of the respondents admitted that they could not overall select strategies in seeking information that was needed. Nearly half of the respondents said they could select, store and manage information and resources. Most respondents admit that they can identify different types of potential sources in presenting the information needed. Besides, the majority of them can identify the terms and key concepts that depict the required information.

In addition, 75% of respondents could identify the type of resources in the electronic library catalog to retrieve information. The sources of information used by the students in finding information are presented in the following figure.

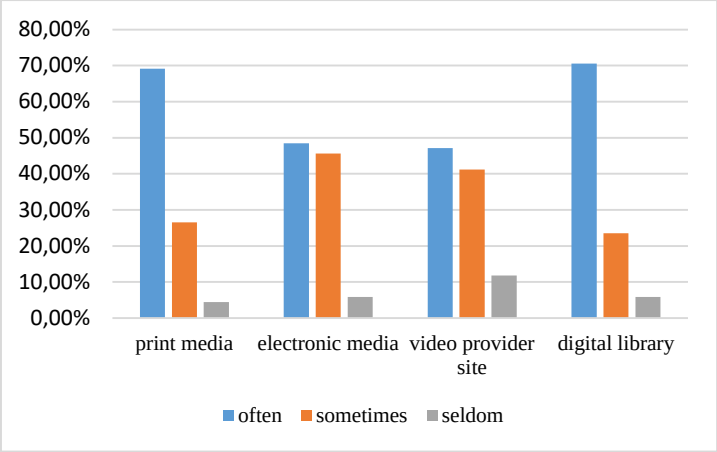

Figure 3. Frequently used information sources

The vast majority of students are aware of the fact that they utilize print media, such as newspapers, books, magazines, and other publications only infrequently (69.1%). They rely heavily (48.5%) on various forms of electronic media for assistance in their educational implementation. Those individuals include 47.1% of regular users of online videos and 70.6% of regular users of digital libraries. The ability to use the information obtained effectively is presented in the following figure.

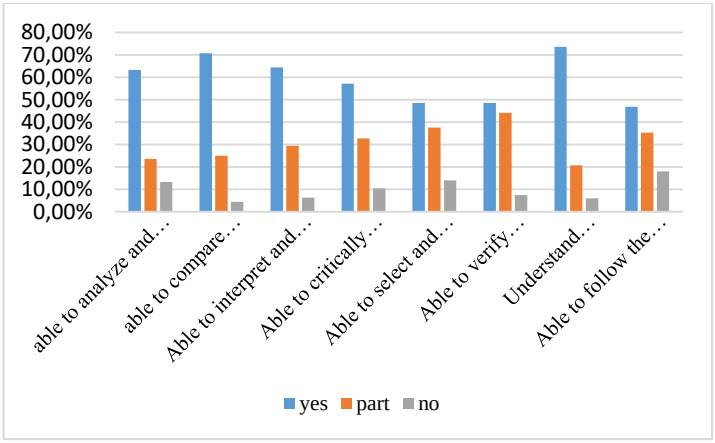

Figure 4. Students' ability to use information effectively

The results of this study showed that most students could analyze and synthesize information (63.2%), compare information from different sources (70.6%), and grasp how to interpret and display information (64.4%). Fewer students (57.1%) say they don't know how to evaluate information and sources critically and 48.5% say it's hard for them to evaluate print and online sources of information based on specific criteria. The respondents can also check to see if the information they got is real and accurate even though the majority of

respondents (48.5%) occasionally follow the laws, regulations, and labels related to use and access of information resources.

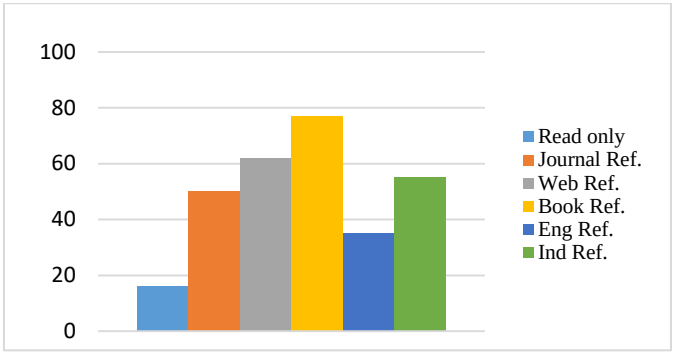

Figure 5. Students' digital literacy competence

According to the description above, nearly half of the respondents stated they had difficulty using the internet for various activities, including assisting their learning process. They realized that the information they had gathered was insufficient to get good grades from their lecturers. More than half of respondents admit to having difficulty searching for and finding information effectively, as well as using more specific sources of information. Independent learning in the digital age is also becoming more popular, with implications for both the learning process and learner characteristics (Silamut & Petsangsri, 2020). At this time, information technology provides infrastructure and communication channels in everyday life. When technology already supports organizational knowledge management, workers need to have digital literacy skills, for example, how to create information using PowerPoints, media, etc. The student must have internet media literacy. Internet media literacy on students is used to download references needed to support their educational activities.

STUDENTS' ACADEMIC PERFORMANCE

Literacy reading shows reading competence in the concept of contemporary literacy, including activities pre-reading, while-reading, and post-reading.

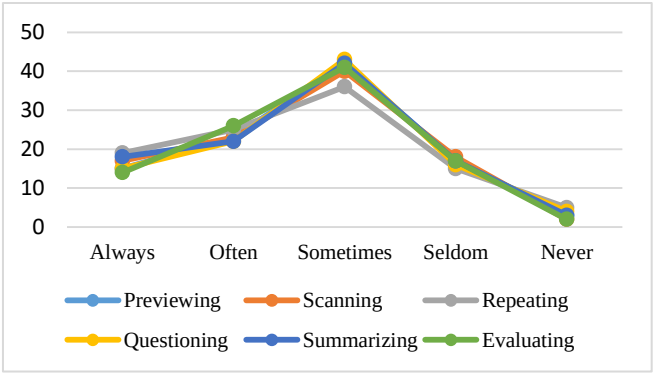

Figure 6. Students' academic performance in reading behavior

This matter shows that the students sometimes make an overview and explore the material by asking further questions. The findings denote that digital literacy competency on reading behavior has an average scale.

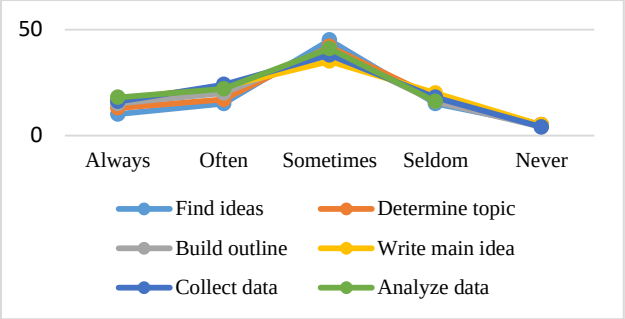

Figure 7. Students' academic performance on writing behavior

Literacy writing shows the ability of students to use their full potential and skills related to behavior at the beginning of writing, writing the truth, and behavior end of writing. The results of this study show that most of it are taken seriously, which can be interpreted by students who already have good writing literacy.

CORRELATION BETWEEN DIGITAL LITERACY COMPETENCE, ACADEMIC PERFORMANCE, AND SELF-DIRECTED LEARNING READINESS

The result shows that the relationship of literacy and internet media significantly correlates with reading and writing literacy. Meanwhile, reading and writing literacy significantly correlates with the value of the coefficient moderate category correlation.

Table 1. Correlation between digital literacy competence, academic performance, and self-directed learning readiness

		Digital Literacy Competence	Academic Performance	Self-Directed Learning Readiness
Digital Literacy Competence	Correlation Coefficient	1.008	.002	.078
	Sig. (2-tailed)	.877	.380	.277
	N	92	92	92
Academic Performance	Correlation Coefficient	.908	1.002	.380
	Sig. (2-tailed)	.966	.003	.132
	N	92	92	92
Self-Directed Learning Readiness	Correlation Coefficient	1.069	.122	.069
	Sig. (2-tailed)	.266	.099	.137
	N	92	92	92

The research findings show that: 1) students' digital literacy competence is very good, 2) students' academic performance is good, and 3) students' self-directed learning readiness is good. The third relationship variables indicate that digital literacy competence and self-directed learning readiness are significantly correlated. The students in college are learning

by developing-based learning internet with independent learning tendencies, requiring critical skills with digital literacy (Febyanti & Sari, 2022). So, internet media literacy significantly impacts digital information use, which is certainly correlated with literacy reading and writing literacy (Islamiah & Sari, 2021).

According to the findings of this study, the majority of students do not know how to use digital libraries. They encounter difficulties and are unsure how to use these sources of information. Furthermore, nearly half of the respondents admitted to being less critical and creative about the information gained and how to use it ethically and responsibly. Many students do not understand how to interpret references to journals or papers, how to effectively search databases, or how to evaluate the quality of various websites. Students are typically overly reliant on a single search engine, such as Yahoo or Google, to find information on the Internet. In addition, many of them copied information directly from the website without citing the source, and they are still unaware of the writing ethics related to copying and citing when they use multiple sources.

CONCLUSION

The results of this study show that improving students' digital literacy and their ability to use information technology is important, especially when it comes to getting them ready for self-directed learning. The goal is for students to do better in the learning process. On the other hand, the results show that students have basic skills when it comes to using the internet. They can find and get information from the internet and use it well. Demonstrated student digital literacy in internet media literacy behavior is very good, and students' writing literacy is good. However, their reading literacy is still not good. Efforts to improve students' digital literacy become more qualified so that they are trained to utilize digital information. Through the results of this research, it is hoped to add scientific references studies in psychology, especially educational psychology. By looking at the significances relationship, it is hoped that the students learn more about digital literacy competencies so it can be useful for the improvement in various aspects of life.

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