Using Digital Learning Media as Information Literacy to Improve Learning Activity

Nur'Ain Lahaya[1], Elya Nusantari[1*], Marini Susanti Hamidun[1], Lilan Dama[1,] Dewi Wahyuni K. Baderan[1], Chairunnisah J. Lamangantjo[1]

[1]Jurusan Biologi, FakultasMatematika dan IlmuPengetahuanAlam, Universitas Negeri Gorontalo, Indonesia.

Abstract: The purpose of this study is to describe the use of digital learning media as a source of information literacy and student activity. Research methods using mixed methods. Data collection using instruments in the form of questionnaires and observation sheets. The data analysis used was editing, tabulating, analyzing, concluding. The results of research for information literacy of students that the aspect that has the highest interval is found in the fourth aspect, namely the ability individually or in groups to use information effectively to achieve certain goals with a value of 3.74 while the lowest aspect with a value of 33.00 in the second aspect is the ability to access information that needed effectively. This is in line with Izzatinnida's research (2019) that the use of internet media as a learning resource consists of browsing or searching to obtain significant additional material outside of textbook subject matter. Teachers and their students can access this information as a learning resource. In the learning activities of students for meetings I and II there was an increase in every aspect. These aspects include based on the introduction, student orientation to problems, organizing students to study, guiding investigations, developing and presenting work, analyzing and evaluating problem-solving processes it can be concluded that information literacy and learning activities can be put to good use during learning and increase learning activities in supporting information.

Keywords: Digital learning; Information literacy; Learning activities

Introduction

The world of education needs to foster the advancement of information and communication technologies and continue to improve the quality of education especially in the end of the educational process (Subarjo, 2017). Education is basically the process of communicating information from educators to students who contain information education, which has an element of educator as sources of information, the media as a means of presentation ideas, ideas and educational materials as well as participants teach yourself. Use of the internet as learning media is one breakthrough for the world of education in overcoming the problems that are being faced nowadays. The era of globalization according to readiness human resources to get competent and working with assistance information Technology (Rahman, 2021).

Among the innovations in the world of education in particular in learning is the use of new developments such as the invention of mobile phones by students as a bounce point or learning. Due to the large number of mobile phone users, multi-purpose learning can be used as an alternative to solving school education problems, especially colleges (Ashrianto & Yustitia, 2020).

Information literacy is the ability to know when information is needed. Mastering information literature is considered very important in learning so it is part of an educational program. Information literation is the awareness and ability to identify/find, evaluate, organize, create, use and communicate information to solve problems (Saputra, 2019). The concept of

information literacy (IL) focuses on a person's ability to interact with information and related cognitive and behavioral processes (Purnell et al., 2020). Information literacy refers to the motivation and confidence of students to seek information using online media. On the other hand, De Meulemeester et al. (2018) emphasized the importance of incorporating information literacy into the curriculum of higher education (Fredy et al., 2020).

The skill to select and organize information is something that everyone, including students at the learning stage, must master, in order to be able to pick up and organise information correctly and accurately required the skill called information literacy, which is one of the skills needed to respond to the challenges of the 21st century. This ability is important for learners to understand the underlying evidence that supports fundamental concepts in the field of biology (Hanurani, 2020).

Today, the internet has become a reference source for young people, and in many cases the only one. This leads to the use of these channels to spread fake news, a phenomenon that gradually becomes famous and its emergence leads. Taking that into account, the development of digital competencies has become one of the most demanding educational challenges by the educational community. It is important to train the stream and, above all, the future generations to develop minimum digital skills so that they can safely navigate the web, extract information from it, and share it safely (Gómez-García et al., 2020).

Castaño-Pulgarín et al. (2021), today social media is often abused to spread messages of violence, comments, and hate speech. It is treated as online hate speeches, which are defined as communications that contaminate either the names of individuals or groups based on characteristics related to race, skin color, ethnic origin, gender, sexual orientation, country origin, religion or political affiliation (Zhang & Luo, 2018).

Given the wide range of technological devices, including mobile devices, and online communications seem so important, it is still everywhere. Human's life The usual use of the Internet in everyday life has not been well studied.Know how to use the Internet and daily life (Leguina& Downey, 2021).

The effectiveness of Internet technology in the teaching learning process depends on the literacy of individual information. The level of information literacy seems to be essential for the active participation of online students in learning activities, its effectiveness in obtaining the desired information, and the critical use of such information. The use of digital devices by students in everyday life makes them feel competent and too confident in completing their tasks (Arman et al., 2020). Therefore, their level of information literacy can affect

student participation in an online learning environment (Avcı & Ergün, 2022). Zhu et al. (2019) saysinformation is the key to the rapidly changing economy in the 21st century, and as a result, people are expected to have different literacy skills that enable efficient and effective activities such as selecting, using, implementing, managing, and exchanging.

According to Kemendikbud, in the National Literacy Movement Guidelines, it is clearly mentioned that literacy is the ability to access, digest, and use information intelligently. Developing a culture of reading is a way for schools, communities and family members to be literate, close to books, and used to using reading materials to solve various problems in life (Agusta, 2020). From the perspective of library and information science, the Association of College and Research Libraries (ACRL) states that "information literacy is a set of integrated skills that includes reflective discovery of knowledge, an understanding of how knowledge is produced and valued, and the use of knowledge to create new knowledge and participate ethically in a learning society." (Becker, 2018).

Based on research Noerjanah& Sadiah Maulidah, (2021), information literacy is very useful in the world of higher education to support education and in implementing a competence-based curriculum that requires students to find information for themselves and leverage a variety of sources of information. On technological advances, there are at least three literacy skills needed in the 21st century, namely information literacy, media literacy and technological literacy (Sulistiyarini& Sabirin, 2018). Information literature is the ability to recognize information needs to solve problems, develop ideas, ask important questions, use a range of information gathering strategies, determine appropriate, relevant, and authentic information (Nurohman, 2014). While information literacy has evolved to include news literacy after "fake news". If we believe that information literature educates learners to live as independent human beings who have the capacity to influence the world, then information literation needs to include an understanding of the way that news and information streams are formed by the algoritms (Head et al., 2019).

Literacy refers to a person's ability to communicate information in an appropriate way to the public. Human nature and social skills give a clear task that the ability to use the media acts as a humanity unifier and amplifier in accordance with the diversity of society (Tetep, 2019). Information literacy standards find and select appropriate information and critically evaluate the use of information to understand and apply new information. Developing information literacy skills should enable students to perform information literature

tasks effectively, legally and ethically (ALA) (Zapalska& Wroblewski, 2019).

Based on initial observations at SMA Negeri 1 Kabila, in completing assignments many students found non-book references but through the internet, because on the internet all information is available and it is very easy to access and find various information. However, there are still students who do not know how to find appropriate and significant information on the internet, students find information via Blogspot, Wikipedia, Brainly as a guide for their subject assignments (Sasmita, 2020). The use of the internet as a learning medium can be considered as something that is already widely used among students. The existence of the internet as a source of learning makes it easier for us to access various available sources of information, because the internet can help us improve our standard of living through education. Actually, the internet can be an alternative source of learning that is quite effective and efficient, but so far what is commonly known as a source of learning is books and educators. For this reason, schools can use the internet as a means of learning other than books. The rapid development of internet use also increases the value of the benefits of the internet itself. The rapid development of the internet both in developed countries and in developing countries, one of the developing information technologies is the internet

Based on interviews conducted at SMA N 1 Kabila class X IPA that some students did not fully understand information literacy, many students did not recognize and identify the information needed. Many of the students did not understand the information needs and most of the students went straight to the search stage without specifying the required information. When searching for information on the internet, students do not use specific and clear keywords in finding information that turns out to be less specific and sometimes not what they want.

The teacher's statements at SMA Negeri 1 Kabila regarding students, especially to find information on biodiversity material, are still lacking. The literature used is only in the high school package book. With the facts available as explained above, information can be accessed by everyone as widely as possible. Some people in accessing information are not equipped with the ability to select and organize information that is truly in line with their needs

Based on the background that has been described, researchers will conduct research with the title "Utilization of Digital Learning Media as Information Literacy to Improve Learning Activities of Class X Students on Biodiversity Materials at SMA N 1 Kabila".

Method

Population is the entire object of research which can consist of living things, objects, symptoms, test scores, or events as a source of data representing certain characteristics in a study. The population in the study can also be interpreted as the entire unit of analysis whose characteristics will be suspected. The unit of analysis is the unit/units to be studied or analyzed. The study population is the entire X class of IPA with a total of 216 students. sample is part of the data which is the object of the population taken. The sample classes are IPA 5 and IPA 6 with a total number of students 61.

The research design used in this research is descriptive. aims to describe what happened as it should at the time the research was conducted. The method used is the Mixed Method, which is an approach that combines or associates qualitative and quantitative forms (Hadju et al., 2022). A mixed method that utilizes both research approaches at the same time in its research activities, namely the quantitative and qualitative research approaches (Senjaya, 2018).

The research was conducted in 2x meetings, meeting I discussed sub-themes on biodiversity based on its levels and meeting II discussed the theme of spread of flora and fauna in Indonesia. The instrument in this study is an elevator by measuring information literacy and observation sheets. The questionnaire is a tool used to collect data that contains written questions that must be answered by respondents (Sukendra& Atmaja, 2020). Questionnaires are a number of written questions that are used with the aim of obtaining information or data from respondents. Positive and negative questions with a total of 25 numbers given to students. Information literacy on the material of biodiversity that covers diversity based on its level and spread of flora and fauna in Indonesia.

The observation sheet is a guideline that contains indicators used to make an observation. These indicators are a reference as well as limitations in making observations in a study so that the observation process becomes structured and directed (Sukendra& Atmaja, 2020). The observation sheet is used when the learning process takes place to observe the student's learning activity. The observers in this study were four people, the researcher and fellow students. Indicators of the observation sheet based on the syntax Problem basic learning is the introduction, student orientation to problems, organize students to learn, guide research, develop and present the results of work, analyze and evaluate the process of problem-solving.

The data analysis technique in this study is the instrument of the lifting sheet and the observation sheet of the student activity. Data analysis is the process of

systematically searching for and assembling output data, and learning activities by organizing data, choosing what is important and studied, and making conclusions so that they are easy to understand.

Table 1. Information literacy presentation criteria:

| Category	Scale
Very good	3.54 – 4.34
Good	2.72 – 3.52
Not good	1.81 – 2.71
Not very good	1.00 – 1.80

In the processing described by Arikunto (2002), the researchers took the following steps: (1) After the carrier is filled by the respondent and returned to the researcher, then the investigator immediately checks the completeness in the filling carrier if there are unanswered answers, the researcher contacts the respondents concerned to perfect their answers. To be legitimate. (2) Tabulating, the second step is processing the data by moving the answers contained in the angket into a tab or table using Microsoft exel. Then after the data is processed so that the results are declared valid, then subsequently perform data analysis with descriptive techniques with presentation. (3) At this stage, the researcher performs the data analysis technique obtained from the results of data tabulation, so that the presentation of the data is known by the student. Analysis techniques will make it easier for researchers to process data and obtain results from the sharing of data and the observation sheets of students. (4) Concloding, this stage after the data has been analyzed, the researcher can draw conclusions from the results and the interpretation of the data. In the final phase, so that the results of the study can be read, understood, and known to the reader, the research results are structured in the form of conclusions of the results.

Result and Discussion

Description of literature information

Observations of the student's information literacy are assessed on the basis of the learning process and refer to 5 aspects of information literature skills. In this recapitulation, the criteria are good and very good. In the first aspect is the ability to identify the information needed with a score of 3.50 criteria good, for the second aspect that is the capacity to access the information required effectively and efficiently with a rating of 3.00 criteria well, The third aspect is the ability to critically evaluate information and sources and combine selected information into a knowledge base and value system with a 3.31 score of good criteria,, The fourth aspect is the ability, individually or in groups, to use information

effectively to a specific goal with a score of 3.74 with excellent criteria. The fifth aspect is the ability to understand economic, legal, and social issues surrounding the use of information and to access and use information ethically and legally with a score of 3.38 with good criteria. As for the diagram image recapitulation of literacy information obtained from each indicator can be seen in the following Figure 1.
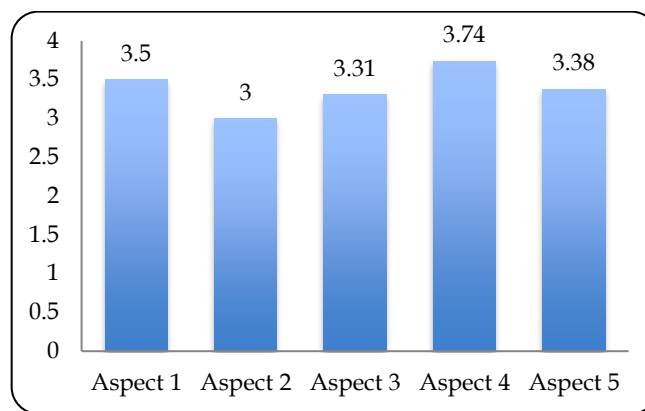
Figure 1. Presentation of literature information participants

Table 2. Results of data analysis on information literacy:

Aspect	Explanation	Score
Indicator 1	Ability to identify the information needed	3.50
Indicator 2	Ability to access the required information effectively and efficiently	3.00
Indicator 3	Ability to critically evaluate information and literature sources and incorporate the selected information into a knowledge base and value system	3.31
Indicator 4	The ability individually or in groups to use information effectively to achieve certain goals	3.74
Indicator 5	Skills in understanding economic, legal and social issues related to the use of information, accessing it and using information ethically and legally	3.38

Data analysis showed that the highest information literacy was on the fourth indicator, i.e. the ability individually or in groups to use information effectively to a specific goal with a score of 3.74 (very good), and the lowest information literacy is on the second indicator, i.e. the ability to access the required information effectively and efficiently with a score of 3.00 (well).

Therefore, it can be concluded on the basis of the results of the literacy of the information participants that the aspect that needs to be improved in order to support the information literacy ability of students of class X N 1

Kabila is the ability to access the information needed effectively and efficiently.

Description of Learning Activity

The observation of the activity of the students in the class was carried out using an observation sheet observed by 4 observers. At the meeting I and meeting II consists of 6 aspects that will be observed with the assessment carried out during the learning activity takes place. The observation of the activity of the students is done to know the student's activity in receiving structured learning materials so that from the evaluation of students' activities carried out, the teacher can see the students who participate actively as well as students who do not participate. The average performance of the participants is presented in Figure 2.
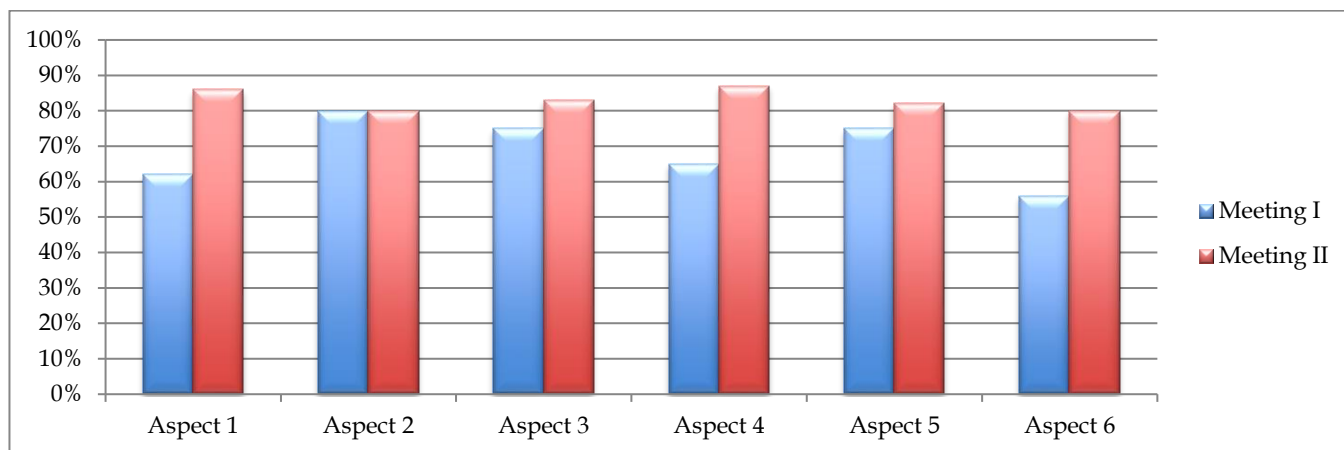

Figure of 2. Presentation of the meeting I and II

Learning activities are a very important part of learning. learning that emphasizes more meaningful learning activities and provides pleasant learning for students. Learning activities can encourage students to actively participate in learning, which stimulates the brain of students to think critically and solve problems, thereby producing better learning outcomes. Here is a description of each aspect assessed based on the student's learning activities at the I and II meetings.

The first aspect is to give a response to the aperseption presented by the teacher at the meeting I that is with a presentation of 62% with good criteria. In the second meeting it was 86% with very good criteria. This occurred in the improvement of the learning process at the meeting of the students II already boasted themselves in giving a response to the aperseption given by the teacher. This is because the aperseption delivered by the teacher provides an understanding between the surrounding environment so that the student can easily understand the relationship between apersections and everyday life.

The second aspect is to watch the video/picture displayed carefully and carefully. Participant activity in observing pictures carefully and carefully at the meeting I is 80% with excellent criteria. In the second meeting it was 80% with very good criteria. The third aspect is to pay attention to the teacher's explanation, to be able to assemble several questions based on the object observed, and to find literature that matches the material at the meeting I, which is 75% with good criteria. In the second meeting it was 83% with very good criteria. In this aspect relates to the second aspect of responding well to the image or object that the student observed.

The fourth aspect is that the students discuss with the members of the group in the work of the LKPD and gather information that matches the problem solving at the meeting I 65% with good criteria. In the second meeting it was 87% with very good criteria. This occurred at the meeting II because of the enthusiasm of the students in the work of the LKPD. The LKPD made with interest is possible to attract the interest of learners in solving the problems that exist in the LKDP. The fifth aspect is that the students presented the group discussion results at the I meeting 75% with good criteria. The second meeting was 82% with very good criteria. At the meeting, the student's activity was increased, because the student already had a sense of confidence with the answers obtained between right or wrong. When presenting, the student also feels calm and not in a hurry to present.

The sixth aspect is that the student is able to develop opinions in solving problems, and evaluate against problem research at the meeting I with an average presentation of 56% with good criteria. The second meeting was 80% with very good criteria. In this aspect there is an increase due to the fact that the students have been able to enable themselves to give an opinion in a problem resolution, in this case also the students are active in discussing to convey their opinions.

Conclusion

From the purpose of this research is to describe the use of digital learning media as a source of learning literacy information students and analyze the learning activity of students against the utilization of internet media as the literacy of information students class X material High School 1 in Kabila. Based on analysis for information literacy shows that the highest literacy of information is on the fourth indicator, Individual or group ability to use information effectively to a specific goal with a score of 3.74 (very good), and the lowest information literacy is on the second indicator, i.e. the ability to access the required information effectively and efficiently with a score of 3.00 (well). Based on the analysis for the student's learning activity, that is, at the meeting I the highest aspect is the aspect of student orientation on the problem with the presentation 80% criteria are excellent, For the meeting II got the same presentation, which is 80% of the criteria excellent. It stated that the presentation was stable and did not experience a decrease in learning activity. Whereas at the meeting II the highest aspect was the guiding aspect of the survey, with a presentation of 87% of criteria excellent, for the previous meeting a standard presentation of 65% of the criteria good. On this aspect there was an increase from meeting I to meeting II.

References

Agusta, A. S. (2020). Komunitas Baca Dalam Menyebar Virus Literasi "Perpustakaan Jalanan DIY." *IQRA`: Jurnal Ilmu Perpustakaan Dan Informasi (e-Journal)*, *14*(1), 29. https://doi.org/10.30829/iqra.v14i1.6350

Arman, A., Winarsih, M., & Ibrahim, N. (2020). The A6S Information Literacy Model for Digital Age Library instruction. *International Journal for Educational and Vocational Studies*, *1*(8), 831. https://doi.org/10.29103/ijevs.v1i8.2269

Ashrianto, P. D., &Yustitia, S. (2020). The Use of SocialMedia in Searching for Information about Papua. *Jurnal The Messenger*, *12*(2), 122. https://doi.org/10.26623/themessenger.v12i2.1939

Avcı, Ü., & Ergün, E. (2022). Online students' LMS activities and their effect on engagement, information literacy and academic performance. *Interactive Learning Environments*, *30*(1), 71–84. https://doi.org/10.1080/10494820.2019.1636088

Becker, B. W. (2018). Information Literacy in the Digital Age: Myths and Principles of Digital Literacy. *School of Information Student Research Journal*, *7*(2). https://doi.org/10.31979/2575-2499.070202

Castaño-Pulgarín, S. A., Suárez-Betancur, N., Vega, L. M. T., & López, H. M. H. (2021). Internet, social media and online hate speech. Systematic review. *Aggression and Violent Behavior*, *58*. https://doi.org/10.1016/j.avb.2021.101608

Fredy, F., Prihandoko, L. A., &Anggawirya, A. M. (2020). The Effect of Learning Experience on the Information Literacy of Students in the Ri-Png Border During Covid-19 Period. *International Journal of Multicultural and Multireligious Understanding*, *7*(10), 171. https://doi.org/10.18415/ijmmu.v7i10.2067

Gómez-García, G., Hinojo-Lucena, F. J., Cáceres-Reche, M. P., & Navas-Parejo, M. R. (2020). The contribution of the flipped classroom method to the development of information literacy: A systematic review. *Sustainability (Switzerland)*, *12*(18), 1–13. https://doi.org/10.3390/su12187273

Hadju, V. A., Gorontalo, U. N., Aulia, U., & Gorontalo, U. N. (2022). *Desain Penelitian Mixed Method Desain Penelitian Mixed Method*. Yayasan Penerbit Muhammad Zaini.

Hanurani, H. (2020). Integrasi Literasi Informasi Pada Pendidikan Dan Pelatihan Jarak Jauh Pendalaman Materi Biologi Madarasah Aliyah. *JPPS (Jurnal Penelitian Pendidikan Sains)*, *10*(1), 1874. https://doi.org/10.26740/jpps.v10n1.p1874-1888

Head, A. J., Fister, B., & MacMillan, M. (2020). Information Literacy in the Age of Algorithms: Student Experiences with News and Information,

and the Need for Change. *Project Information Literacy*. Retrieved from https://eric.ed.gov/?id=ED605109

Leguina, A., & Downey, J. (2021). Getting things done: Inequalities, Internet use and everyday life. *New Media and Society*, *23*(7), 1824–1849. https://doi.org/10.1177/14614448211015979

Noerjanah, S. L. A., & Sadiah Maulidah. (2021). Analyzing Students' Needs for Better Information Literacy In The 21st Century. *International Journal of Education and Humanities*, *1*(3), 148–161. https://doi.org/10.58557/ijeh.v1i3.27

Purnell, M., Royal, B., & Warton, L. (2020). Supporting the development of information literacy skills and knowledge in undergraduate nursing students: An integrative review. *Nurse Education Today*, *95*, 104585. https://doi.org/10.1016/j.nedt.2020.104585

Rahman, D. (2021). Pemanfaatan Internet SebagaiSumberBelajar dan Informasi. *Jurnal Perpustakaan Dan Informasi*, *1*(1), 9–14. Retrieved from https://ummaspul.e-journal.id/RMH/article/view/1391

Sasmita, R. S. (2020). Pemanfaatan internet sebagai sumber belajar. *Jurnal Pendidikan dan Konseling (JPDK)*, *2*(1), 99-103. Retrieved from https://journal.universitaspahlawan.ac.id/index.php/jpdk/article/view/603

Saputra, A. H. (2019). The Improvement of Students' Information Literacy-based on the Association of College and Reseach Libraries (ACRL) using Empowering 8. *International Journal of Theory and Application in Elementary and Secondary School Education,* *1*(2), 1-9. Retrieved from https://pdfs.semanticscholar.org/7981/d03f370f80bcb67e4b5d02f5852264e2e8bb.pdf

Senjaya, A. J. (2018). Campuran (Mixed Method) Dalam Riset Sosial. *Risalah, Jurnal Pendidikan Dan Studi Islam*, *4*(1), 103–118. https://doi.org/10.5281/zenodo.3552026

Subarjo, A. H. (2017). Perkembangan Teknologi Dan Pentingnya Literasi Informasi Untuk Mendukung Ketahanan Nasional. *Angkasa: Jurnal Ilmiah Bidang Teknologi*, *9*(2), 1-8. https://doi.org/10.28989/angkasa.v9i2.188

Sukendra, I. K., & Atmaja, I. K. S. (2020). *Instrumen Penelitian*. In Journal Academia.

Tetep, A. S. (2019). Students' digital media literacy: Effects on social character. *International Journal of Recent Technology and Engineering*, *8*(2), 394–399. https://doi.org/10.35940/ijrte.B1091.0982S919

Zapalska, A. M., & Wroblewski, B. (2019). Fostering Information Literacy in the Management Education at the U.S. Coast Guard Academy. *Asian Journal of Interdisciplinary Research*, *2*(1), 1–17. https://doi.org/10.34256/ajir1931

Zhu, S., Yang, H. H., MacLeod, J., Yu, L., & Wu, D. (2019). Investigating Teenage Students' Information Literacy in China: A Social Cognitive Theory Perspective. *Asia-Pacific Education Researcher*, *28*(3), 251–263. https://doi.org/10.1007/s40299-019-00433-9