

## DIGITAL LITERACY IN VOCATIONAL HIGH SCHOOL ENGLISH LEARNING MATERIALS

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**Abstract:** This study aims to investigate digital literacy in vocational high school English learning materials since these schools are supposed to prepare their students for professional world. This qualitative study employs a content analysis method, analyzing the English learning materials used by vocational high schools in Central Jakarta. The words and sentences representing the weaving of digital literacy in 42 English learning materials are the data of this study. Digital literacy indicators covering seven components: information processing, critical thinking and problem solving, communication and collaboration, citizenship, ethics, operation skills and safety are used as the research instruments. The findings indicate that all literacy components but citizenship and safety are incorporated in the materials. They are mostly used in the assignments, followed by the contents and the miscellanies parts of the learning materials. However, despite the existence, they seem to be not evenly incorporated in all components of the materials.

**Keyword:** *digital literacy; ICT.*

### INTRODUCTION

Digital literacy in this fourth Industrial Revolution (IR 4.0) era, where the advancement of Information and Communication Technology (ICT) grows rapidly, plays an important role in everyday life: personal, social, and work. Digital literacy is required in the acts of finding, generalizing, and analyzing digital resources on a daily basis (Yashalova, Shreider, & Yakovleva, 2019).

Studies concerning the requirement of being digitally literate conducted by Polizzi (2020); Techataweewan & Prasertin (2018); Polizzi (2020). A survey by Kominfo (2020) involving 1670 Indonesian people across 34 provinces exhibits an identical finding: index score for digital literacy in Indonesia is 3 out of 5 (average). This is in line with other research findings (Eryansyah, 2019; Perdana et al., 2019; (Eryansyah, Erlina, Fiftinova, & Ari, 2019).

The lack of digital literacy education has the possibility to generate serious issues which can jeopardize relevant individuals or even bigger, communities (Susilo, Afifi, & Yustitia, 2020). In addition, technologies such as *Robotic, Artificial Intelligent, 3D Printing, Augmented Reality, Virtual Reality, Cloud Computing, and Internet of things* (DitPSMK, 2019), *Encryption and Cyber Security, E-commerce and Digital Trade, Big Data Analytics* (World Economic Forum, 2020) are designed to do human's work. To comply with this disruptive change and compete with these machines, vocational high schools must be oriented to tailor these qualities: knowledge combination, technical and social skills, positive etiquette, and digital competence to their students (DitPSMK, 2019).

Different sources use different terms for digital literacy – *digital literacy* (Alexander et al., 2016; Hague & Payton, 2010; Hague & Williamson,

2009; OECD, 2019; UNESCO, 2018; UNICEF, 2019), *ICT literacy* (Educational Testing Service, 2002; Griffin & McGraw, 2018; Partnership for 21<sup>st</sup> Century Skills, 2009; MCEETYA, 2007), *digital citizenship* (Council of Europe, 2019), *digital competency* (European Commission, 2016), and *digital-age literacy* (NCREL, 2003). Yet they refer to the same thing - the application of skills, knowledge, and ethics within particular contexts (Mayes & Fowler (2006). It involves interrelated clusters of skills, knowledge, and understanding namely creativity, critical thinking and evaluation, cultural and social understanding, collaboration, information processing, communication, e-safety, and operation skills (Hague & Payton, 2010). It constitutes these competences: computer literacy, ICT literacy, information literacy, media literacy (Law, Woo, de la Torre, & Wong, 2018). Apart from aforementioned aspects—skills, knowledge, and understanding—attitudes and values in conducting digital activities are, as well, taken into account (Griffin & McGraw, 2018; Nascimbeni & Vosloo, 2019).

To go even deeper, information processing deals with searching for, filtering, accessing, understanding, analyzing, evaluating, managing, integrating, synthesizing, communicating, and creating information, or in another term, digital resources. In processing information, critical thinking and creativity should be incorporated as those skills allow individuals to effectively and efficiently process information retrieved from the internet; and create novel and richer information or digital resources. Aside from using critical thinking in processing information, this skill also needs to be employed in solving problems and facing challenges that arise in digital environments. Communication and collaboration encompass connecting, interacting, and working with people in a team digitally. Citizenship consists of diverse social, cultural, and political understandings. Ethics in the context of digital literacy comprises a set of attitudes and awareness requisite in conducting digital activities as they hinder individuals from committing morally questionable or wrong actions. Operation skills cover the technical aspect by containing the abilities to operate and utilize digital technologies. Safety in the digital environment includes protecting data and health or well-being. The incorporation of digital literacy in English learning materials foster students' knowledge,

skills, and attitudes concerning digital technology and its use necessary to acquire in this disruptive era.

Studies regarding digital literacy in vocational high school have been conducted to investigate the practice of ICT-integrated English lessons by vocational high school teachers, their attitude toward ICT, and their motivation to use ICT in their teaching. The findings revealed that instead of using a myriad of ICT tools—both hardware or software tools which implied their adequate digital literacy in the sense that they knew and were able to operate the digital tools, the teachers only utilized a few ICT tools, indicating a lack of optimization in utilizing the tools. In terms of attitude, they had a positive one toward ICT, they believed that ICT would have a positive impact on their teaching practices. Their motivations in using ICT varied: (1) their interests in ICT, (2) the today's world demands, (3) ICT as a students' motivation booster in learning, (4) ICT to effectuate learning, (5) and their confidence in utilizing ICT for teaching and learning purposes (Rodiyah, 2018). More studies proved that the students' digital literacy and students' entrepreneur behavior improve using a certain learning model (Patmanthara & Hidayat, 2018); (Mudasih, Subroto, & Susanti, 2021). To make more confirming reasons for the awareness of teachers and learning material writers of the importance of digital literacy in vocational schools, this study aims to seek the incorporation of digital literacy in vocational high school English learning materials.

## **METHOD**

This study employed a qualitative research approach, analyzing 42 English learning materials used in grade X, XI, and XII taken from ten vocational high schools located in Central Jakarta. The materials comprised one coursebook, seven modules, eight videos, seven audios, four web articles, and 15 slides Microsoft PowerPoint and Canva. The instruments are the indicators of digital literacy derived from sources pertaining to digital literacy (Alexander et al., 2016; Council of Europe, 2019; Educational Testing Service, 2002; European Commission, 2016; Griffin & McGraw, 2018; Hague & Payton, 2010; Hague & Williamson, 2010; Kemendikbud, 2017; Law et al., 2018; Martin, 2005; Mceetya, 2007; Nascimbeni & Vosloo, 2019; NCREL, 2003; Partnership for 21<sup>st</sup>

Century Skills, 2009; Pedrew, 2017; Western Sydney University, 2017). There are 13 indicators for information processing, four indicators for critical thinking and problem solving, eight indicators for communication and collaboration, four indicators for citizenship, ethics, operation skills, and safety respectively which makes them 42 in total. The data was collected through reaching out to vocational high schools located in Central Jakarta via online correspondence (WhatsApp and Zoom Meeting). They were analyzed using the indicators.

## RESULTS AND DISCUSSION

To see the extent of which digital literacy is incorporated in the English learning materials, the findings begin with the amount of the occurrence of digital literacy indicators in the materials. Out of 42 English learning materials, it appears that 17 of them incorporated these following components of digital literacy: information processing, critical thinking and problem solving, communication and collaboration, ethics, and operation skills but not citizenship and safety. To be more specific, information processing indicators are 5.3% incorporated, critical thinking and problem-solving indicators are 0.6% incorporated, communication and collaboration indicators are 2.4% incorporated, ethics indicators are 0.6% incorporated, and operation skills indicators are 14.3% incorporated.

As described above, the indicators that are fulfilled in information processing cover accessing for digital resources, searching for digital resources, understanding digital resources, understanding the purpose of digital resources, identifying digital resources, managing digital resources, filtering digital resources, analyzing digital resources, evaluating digital resources. The first indicator “accessing digital resources” appears dominantly in 11 English learning materials. Below are some of the evidences of the incorporation:

Open these two links. Discuss with your classmates to respond to these questions. Link 1: <https://www.youtube.com/watch?v=ujPidSx7Vus>  
Link 2: <https://www.youtube.com/watch?v=BI7SN9MTyQ> (*In Listening section of English learning material 1 (Announcement/Song – Coursebook)*)  
Study the dialogue, search in the website the example of congratulating between Yunita and Winni in

<https://www.youtube.com/watch?v=a9hL2qanJwI> (*In Exercise 1*)

English learning material 3 (Congratulation and Compliment – English Module)

English learning material 4 (Cause and Effect – English Module)

Watch the video and answer the questions carefully. [https://youtu.be/G4H1N\\_yXBIA](https://youtu.be/G4H1N_yXBIA) (*In Task 8*)

The second indicator to appear frequently is “Incorporates searching for digital resources.” See below:

In your group, find the video about saving the earth and answer the similar questions above. (*In Task 9*) English learning material 4 (Cause and Effect – English Module).

Do in groups of four. Find 8 pictures on internet about activities, events, accidents or disasters. (English learning material 12 -Suggestion and Offer – PowerPoint Slides)

The third indicator ‘Incorporates understanding digital resources’ is shown below:

Open these two links. Discuss with your classmates to respond to these questions. Link 1: <https://www.youtube.com/watch?v=ujPidSx7Vus>  
Link 2: <https://www.youtube.com/watch?v=BI7SN9MTyQ>  
(*In Listening section of English learning material 1 (Announcement – Coursebook)*)

Study the following examples of introducing oneself. Introduce yourself in English, make a record. The link: <https://www.youtube.com/watch?v=z7QmHKgVn5s> (*In Exercise 2*) English learning material 2 (Introduction – English Module)

Study the dialogue, search in the website the example of congratulating between Yunita and Winni in <https://www.youtube.com/watch?v=a9hL2qanJwI> (*In Exercise 1*) English learning material 3 (Congratulation and Compliment – English Module)

The fourth indicator “Incorporates understanding the purpose of digital resources” only appears in one English learning material, pertaining to procedure text in the form of PowerPoint slides.

Then, think about the purpose of the writing. Is it to inform you or to teach you or is it to promote something to you? For example, if the article is telling you all about a famous politician and how important and amazing, they are, be careful. Its real purpose may be to make you vote for them, so the information in it may not be objective. (*In the example of procedure text*) English learning material 11)

The fifth indicator fulfilled is “Incorporates identifying digital resources” which appears in two English learning materials.

Then, think about the purpose of the writing. Is it to inform you or to teach you or is it to promote something to you? For example, if the article is telling you all about a famous politician and how important and amazing, they are, be careful. Its real purpose may be to make you vote for them, so the information in it may not be objective. (*In the example of procedure text*) English learning material 11 (Procedure Text/PowerPoint Slides)

Do in groups of four. Find 8 pictures on internet about activities, events, accidents or disasters. English learning material 12 (Suggestion and Offer – PowerPoint Slides)

The sixth indicator “Incorporates managing digital resources” is found in one English learning material

Do in groups of four. Find 8 pictures on internet about activities, events, accidents or disasters. (English learning material 12)

The seventh indicator of information processing that appears in the English learning materials is “Incorporates filtering digital resources.” It appears in two English learning materials.

Here are five ways to spot fake news: (1) Number one, look for unusual URLs. If they end with lo. or com.co, chances are they aren't legitimate news sites. (2) Number two, dissect the layouts. Look for grammatical errors, incorrect dates, both claims with no sources, and sensationalist images. These are all red flag. (3) Number three, dig deeper. Find out who wrote the article and who supports the site. If this information doesn't exist or you need to register to get it, then question why. (4) Number four, crosscheck. Use fact checking sites to confirm information and see whether other credible news outlets are reporting

similar news. (5) Number five, try a reverse image search. If the same picture appears in unrelated stories, you may have a reason to be suspicious.

English learning material 7 (Procedure Text – Video)

However, there are millions of websites. Some of them have accurate information, but some do not. This is why we should evaluate a website before we accept what it is telling us. Imagine you have found an article that seems useful.

Here are some tips to help you evaluate it. (1) First, check the URL. It may tell you something about the website, its creator and its country of origin. (2) Then, think about the purpose of the writing. Is it to inform you or to teach you or is it to promote something to you? For example, if the article is telling you all about a famous politician and how important and amazing, they are, be careful. Its real purpose may be to make you vote for them, so the information in it may not be objective. (3) Next, check the writer's credentials. Look for a link to their ‘about me’ page so you can read more about their education and experience. She or she a professional in this area? Do you think person is qualified to write about the subject? (4) After that, check to see whether any information has been taken from another website. If it has, go to the original source to check that information hasn't been changed. (5) Also, look at the date of publication. Old articles can be unreliable because they miss out the latest evidence, or because the situation has recently changed. (6) Finally, weigh everything up and decide if you trust the information

(*In the example of procedure text*) English learning material 11 (Procedure Text – PowerPoint Slides)

Similar to the seventh indicator, the eight indicator “Incorporates analyzing digital resources” also appears in two English learning materials.

Watch the video and answer the questions carefully. [https://youtu.be/G4H1N\\_yXBIA](https://youtu.be/G4H1N_yXBIA), (1) What is video about? (2) Find some statements that show the cause and effect of the discussion! (3) Who is the speaker most likely? (4) What should people do after watching the video? (5) What can you do at school to support this information? (*In Task 8*)

English learning material 4 (Cause and Effect – English Module)

Giving an oral presentation can be scary, but we're here to help you. Watch two students giving presentations in the video on our website and then read the tips below. Which tips do they follow? Which ones don't they follow?

(Link: [www.britishcouncil.org/learnenglishteens](http://www.britishcouncil.org/learnenglishteens))  
English learning material 5 (Oral Presentation – Web Article).

The last indicator of information processing to be present in the English learning materials is “Incorporates evaluating digital resources.”

However, there are millions of websites. Some of them have accurate information, but some do not. This is why we should evaluate a website before we accept what it is telling us. Imagine you have found an article that seems useful. Here are some tips to help you evaluate it. (1) First, check the URL. It may tell you something about the website, its creator and its country of origin. (2) Then, think about the purpose of the writing. Is it to inform you or to teach you or is it to promote something to you? For example, if the article is telling you all about a famous politician and how important and amazing, they are, be careful. Its real purpose may be to make you vote for them, so the information in it may not be objective. (3) Next, Check the writer's credentials. Look for a link to their ‘about me’ page so you can read more about their education and experience. She or she a professional in this area? Do you think person is qualified to write about the subject? (4) After that, check to see whether any information has been taken from another website. If it has, go to the original source to check that information hasn't been changed. (5) Also, look at the date of publication. Old articles can be unreliable because they miss out the latest evidence, or because the situation has recently changed. (6) Finally, weigh everything up and decide if you trust the information. (*In the example of procedure text*)

English learning material 11 (Procedure Text – PowerPoint Slides)

Four out of 13 information processing indicators which read “Incorporates synthesizing digital resources, incorporates organizing digital resources, incorporates reformulating digital resources in different formats/modes, incorporates creating innovative digital resources” are absent in the English learning materials.

The only indicator of critical thinking and problem solving found in the English learning materials is “Incorporates solving problems by using digital technology.” This indicator appears in one of the materials.

Number four, crosscheck. Use fact checking sites to confirm information and see whether other credible news outlets are reporting similar news.

Number five, try a reverse image search. If the same picture appears in unrelated stories, you may have a reason to be suspicious.

Three out of four indicators that are not fulfilled, are “Explains the impact of technology, explains the differences between real and virtual world, and incorporates solving technical problem.”

The indicators of incorporation of communication and collaboration for each English learning material cover digital communication, an interrogation by using digital technology, communicating digital resources, and socializing with people in digital environments.

The first indicator “Incorporates digital communication” appears in all five English learning materials analyzed.

Responding to an email/a letter. Imagine that you're Alia. Write an email or a letter responding to the email or letter you've read and discussed. Use the following questions to guide you. (*In Writing*) English learning material 1 (Introduction – Coursebook)

Ask these questions using telephone or WhatsApp to each of your friends, write his/her name and answer based on his/her experiences. (*In Exercise 10*) English learning material 2 (Introduction – English Module)

Writing skills practice: A more formal email – email (*see Appendix 16*) English learning material 4 (Formal Invitation – Web Article)

The second indicator “Incorporates an interrogation by using digital technology” appears in English learning material 2 pertaining to introduction.

Ask these questions using telephone or WhatsApp to each of your friends, write his/her name and answer based on his/her experiences. (*In Exercise 10*) English learning material 2 - module

The third indicator which reads “Incorporates communicating digital resources” is present in one

English learning material analyzed. It is in a section of a book pertaining to an announcement.

Open these two links. Discuss with your classmates to respond to these questions. Link 1: <https://www.youtube.com/watch?v=ujPidSx7Vus>

Link 2: <https://www.youtube.com/watch?v=BI7SN9MTyQ>  
(in *Listening section*) English learning material

The last indicator of communication and collaboration “Incorporates socializing with people in digital environments” is fulfilled in one English learning material pertaining to introduction.

Responding to an email/a letter. Imagine that you’re Alia. Write an email or a letter responding to the email or letter you’ve read and discussed. Use the following questions to guide you. (*In Writing*) English learning material 1 – Course book

Four of eight indicators are not fulfilled: incorporates the awareness of people having diverse interpretations, incorporates a presentation by using digital technology, incorporates communicating with people in any formats/modes/contexts, incorporates a collaboration with people digitally.

The indicators of incorporation of ethics are not fulfilled entirely. Only one indicator is found in one English learning materials, which reads “Incorporates ethics awareness in digital environments.”

Top tips for writing: (1) If you know the name of the person you’re writing to, use *Mr.* for a man and *Ms.* for a woman. (2) Start by saying why you are writing or what you are responding to. (3) Use indirect questions such as *I would be grateful if you could ...* to ask for information politely. (4) Use words like *Firstly*, *Secondly*, and *Finally* to order you points. (5) Use this standard phrase to finish a formal letter or email. (6) If you’ve begun the email with *Dear* and the name of the person, finish with *Yours sincerely*. If you have used *Sir* or *Madam*, finish with *Yours faithfully*.

Three out of four missing are: incorporates legality awareness, incorporates copyright/plagiarism awareness, and incorporates understanding how values and point of views are included or excluded.

Regarding the incorporation of operation skills, three indicators are fulfilled in 13 English learning materials. The first indicator “Incorporates the

understanding of the purpose of digital technology” is incorporated in one of the materials.

Number four, crosscheck. Use fact checking sites to confirm information and see whether other credible news outlets are reporting similar news. English learning material 8 (Procedure Text – Video)

Two indicators which read, “Incorporates accessing digital technology” and “Incorporates operating digital technology” have the same evidences, except for English learning material 7 and 8 which do not incorporate the latter indicator.

Responding to an email/a letter. Imagine that you’re Alia. Write an email or a letter responding to the email or letter you’ve read and discussed. Use the following questions to guide you. (*In Writing*) English learning material 1 (Introduction/Announcement/Song – Coursebook)

Ask these questions using telephone or WhatsApp to each of your friends, write his/her name and answer based on his/her experiences. (*In Exercise 10*) English learning material 2 (Introduction – English Module)

Study the dialogue, search in the website the example of congratulating between Yunita and Winni in <https://www.youtube.com/watch?v=a9hL2qanJwI> (*In Exercise 1*) English learning material 3 (Congratulation and Compliment – English Module)

The evidence for the fulfillment of this indicator, which reads “Incorporates accessing digital technology” is as follows:

There’s more about this on our website at [bbclearningenglish.com](http://bbclearningenglish.com). Join us again for more 6 Minute Grammar. English learning material 7 (If Conditional – Audio)

The only indicator that is absent in 13 English learning materials analyzed reads “Incorporates the activity of programming.”

Having got the occurrence of digital literacy indicators, the next focus of this study is to seek how digital literacy is incorporated in the materials. In this analysis, the learning materials components are classified into three: contents, assignments, and miscellanies. The component with the highest number of occurrences of digital literacy is *Assignment* with 53 out of 82 occurrences (64.6%),

followed by *Miscellany* with 15 occurrences (18.3%) and *Content* with 14 occurrences (17%). In each of the component, digital literacy is incorporated unevenly in information processing (42.7%), making them the most frequent indicators to be incorporated in the materials.

Indicators for critical thinking and problem-solving occur to be incorporated in merely one component of the English learning materials, the content. The number of the occurrence is one, causing them to be the least frequent indicators incorporated in the English learning materials analyzed (1.2%).

Communication and collaboration indicators are incorporated in two components of the English learning materials: the content and assignment. There are five occurrences (50%) in the content, as well as in the assignment (50%). In total, there are ten occurrences (12.2%) of communication and collaboration indicators in the English learning materials analyzed.

Ethics indicators share the same exact amount of number in occurrences with critical thinking and problem-solving indicators, which is one occurrence (1.2%) in only one component of the English learning materials, the content. The evidence is as follows:

The indicators that define operation skills are incorporated in every component of the English learning materials analyzed. The amount of the indicators incorporation in the assignment is the largest with 26 occurrences (74.3%), followed by their incorporation in the miscellany with eight occurrences (22.8%), and in the content with one occurrence (2.8%). The total occurrences of operation skills indicators in every component are 35 occurrences (42.7%).

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The findings reveal that 17 out of 42 English learning materials analyzed have incorporated digital literacy indicators. However, not every indicator of digital literacy is fulfilled. Two out of

seven categories of indicators (citizenship and safety) occur to be absent in all 42 English learning materials. Thus, the incorporation of digital literacy in the 42 English learning materials is 3.7% (63 out 1722 indicators are incorporated).

In specific for each category, sequenced from the highest to the lowest level of incorporation, information processing indicators are 46% incorporated (29 out 63), operation skills indicators are 38.1% incorporated (24 out of 63), communication and collaboration indicators are 12.7% incorporated (8 out of 63), and critical thinking and problem-solving indicators as well as ethics indicators have the same results which are 1.6% incorporation (1 out of 63).

The findings of this present study appear to be similar with the previous ones in terms of digital literacy deficiency (Eryansyah, 2019; Perdana et al., 2019). Both studies show that students participating in their studies possessed a deficient-level digital literacy due to several causes, while this present study found the English learning materials utilized by teachers have incorporated only 3.7% digital literacy indicators.

The findings regarding five components of digital literacy (information processing, critical thinking and problem solving, communication and collaboration, ethics, operation skills) that are incorporated in the three components of English learning materials (content, assignment, and miscellany) analyzed are discussed in the following. The discussions focus on describing how each abovementioned component is incorporated in the English learning materials.

Information processing are incorporated in 13 out 17 English learning materials with the first indicator dominantly appearing in 11 of them. However, there is no specific topic category in which these indicators are incorporated. Even if the indicators show dominance in a specific category, it cannot be regarded as dominant since there are merely one or two indicators that are fulfilled in the English learning materials analyzed with a certain topic.

Speaking of the English learning materials' components, the component that appears to largely incorporate these indicators is the assignment. They appear in the instructions, for example, an instruction to watch a video on YouTube by clicking the link provided, or to search for digital resources to be used in learning. But there is a

special case which is when the researcher determines the incorporation of this indicator “Incorporates analyzing digital resources.” Besides determining the incorporation of this indicator by analyzing the instruction, the researcher also analyzed the questions that follow the instruction, for example:

“Giving an oral presentation can be scary, but we’re here to help you. Watch two students giving presentations in the video on our website and then read the tips below. Which tips do they follow? Which ones don’t they follow?”

The questions act as a determinant point of whether or not the indicator is incorporated. By looking at the questions, the researcher assumed that students have to analyze the digital resource, in this case is a video, to answer the two questions. In Bloom Revised Taxonomy (BRT), the instruction of analyzing employs these verbs: analyze, arrange, break down, categorize, classify, compare, connect, contrast, etc., (Anderson, 2001).

The contents in which the indicators of critical and creative information appear are pertaining to evaluating digital resources. They fall into the procedure text category of topic. The examples of procedure text provided are rather sophisticated as they comply with the current situation, where information can be created and published vastly by anyone, regardless of their education or occupation. Such content can hinder the consumption and dispersion of hoaxes.

As for the miscellany component, the indicators are found on the link directed to a video or website, or closing statement containing links that provides further information.

Regarding Critical thinking and problem solving, out of 17 English learning materials that incorporate digital literacy, only one English learning material incorporates one of the indicators that define critical and problem solving in the context of digital literacy. The indicator “Incorporates solving problem by using digital technology” was found in the content of the English learning material, here is the evidence:

“Number four, crosscheck. Use fact checking sites to confirm information and see whether other credible news outlets are reporting similar news.”

The problem is whether or not the information is credible, and using digital technology such as fact

checking site can be the solution to solve the problem.

Going further with Communication and Collaboration, four communication and collaboration indicators are fulfilled in five English learning materials. The indicators are located in two components of the English learning materials analyzed, which are: content and assignment. In the content, the incorporation is marked by examples of digital correspondence like email, and how to form it (*see Appendix 1, 11 and 16*). Whilst in the assignment, the incorporation is marked by instructions to use digital communication such as email or WhatsApp in learning. This evidence shows the incorporation of communication and collaboration indicators in the assignment:

“Ask these questions using telephone or WhatsApp to each of your friends, write his/her name and answer based on his/her experiences.”

The use of digital communication in learning might help hone students’ digital literacy. Since the previous study by Saripudin et al. (2021) assert that the frequent use of digital technology will enhance individuals’ digital literacy as they gradually become used to it. Nonetheless, the utilization of digital technology must be under the supervision of the adults, like teachers or parents.

From all the English learning materials analyzed, one English learning material incorporates one of four indicators for ethics. The indicator “Incorporates ethics awareness in digital environments” is found in the content of the English learning material pertaining to formal invitation. Here is the evidence:

Top tips for writing: (1) If you know the name of the person you’re writing to, use *Mr.* for a man and *Ms.* for a woman. (2) Start by saying why you are writing or what you are responding to. (3) Use indirect questions such as *I would be grateful if you could ...* to ask for information politely. (4) Use words like *Firstly*, *Secondly*, and *Finally* to order you points. (5) Use this standard phrase to finish a formal letter or email. (6) If you’ve begun the email with *Dear* and the name of the person, finish with *Yours sincerely*. If you have used *Sir* or *Madam*, finish with *Yours faithfully*.

The content contains tips for writing a formal email, that is generally used in companies’ correspondence nowadays. This is in alignment with the aim of vocational high schools which is to



equip their students with skills, knowledge, and attitudes necessary for entering the work industry. However, the finding shows the deficiency of ethics indicators fulfillment in the English learning materials. As stated by Supratman & Wahyudin (2017), inadequacy of digital literacy education, specifically ethics, causes Indonesian students to possess no knowledge nor ability to use social media in wise and responsible manners. Consequently, the responsible adults (teachers/parents) have to keep an eye on students' activity in digital environments.

Indicators for operation skills appear to be present in every component of the English learning materials analyzed. The following are three indicators fulfilled in the 13 English learning materials: (1) The first indicator, "Incorporates the understanding of the purpose of digital technology". (2) The second indicator, "Incorporates accessing digital technology". (3) The third indicator, "Incorporates operating digital technology"

The evidences of operation skills incorporation are the same as information processing. Since students are instructed to process digital resources, the initial step they would take is accessing digital technology and then, operating it. The two indicators "Incorporates accessing digital technology" and "Incorporates operating digital technology" are interrelated as in order to access digital technology, individuals have to possess the ability to operate it. The first indicator, "Incorporates the understanding of the purpose of digital technology" is found in the content of one of the English learning materials analyzed. The evidence is as follows:

"Number four, crosscheck. Use fact checking sites to confirm information and see whether other credible news outlets are reporting similar news."

The proper explanation of the use or purpose of digital technology helps students determine which digital technology is best to cater their needs. This activity needs to be facilitated with proper tools like a personal computer, laptop, tablet, or smartphone. Moreover, a study conducted by Bawack & Kamdjoug (2020) found that a steady access to reliable digital information sources, with the use of digital technology, will be likely to give a positive impact on students' academic experiences.

The two categories of indicator that are found absent in the English learning materials analyzed

are citizenship and safety. Citizenship competence widens individuals' horizon as it comprises the awareness of social, cultural, and political diversity. Social, cultural, and political diversity is inevitable in consequence of the connection with no geographical boundaries through the internet. Safety awareness is as crucial as the other categories. The deficiency of this awareness will generate serious and harmful issues. According to Supratman & Wahyudin (2017), without any proper safety guidance in conducting digital activities, individuals are at risk of negative exposure of the internet such as cybercrime.

This study has explained the concept of digital literacy and the indicators that are used to analyze their incorporation in the English learning materials. The findings have also exhibited that not every indicator is fulfilled and not every English learning material incorporates digital literacy indicators. The three components of the English learning materials divided by the researcher: content, assignment, and miscellany appear to incorporate some of the digital literacy indicators. The topic category of the English learning materials analyzed is varied, from the topic for grade X, XI, to XII.

## CONCLUSION

The study found that not all English learning materials analyzed have incorporated digital literacy; only five out seven digital literacy components, sequenced from the highest to the lowest number of incorporations, information processing, operation skills, communication and collaboration, critical thinking and problem solving, and ethics are incorporated. Citizenship and safety, which are as crucial as others, are found absent in all the English learning materials. There are three components in which digital literacy indicators are incorporated, which are: content, assignment, and miscellany. In addition to the findings, digital literacy indicators are largely incorporated in the assignments of the English learning materials, followed by the contents and miscellanies (outside the content and assignment).

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