Promoting EFL Learners’ Autonomy through Digital Literacy in Facing Industrial Revolution 4.0

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1. INTRODUCTION

The world is now facing a new wave of industrial revolution propelled by the development and immersion of digital technology called as the fourth industrial revolution. The emergence of this revolution, technologies such as the internet of things, artificial intelligence and autonomous vehicles have embedded in everyday life and adopted by the industrial sectors. The impacts of these technologies will transform the way individuals live, work, and learn (Schonberger & Cukier, 2013).

In term of a sustainability relationship between humans and technology, people are encouraged to be equipped with skills that control themselves to achieve optimal results through technology. Developing personal competence and literacy is beneficial to be fully engaged in the revolution since rapid technological advancement will be driven better by a higher level of literacy skills. Therefore, the Minister of Research, Technology, and Higher Education of Indonesia in 2017 proposed a model of literacy education that should be introduced to the students at different levels, such as digital literacy (Supratman & Wahyudin, 2017).

This new form of literacy concerns the utilization of various types of technology ranging in different modes. It derives from the idea of Gilster (1997) as cited in Yuan (2017) claiming that digital literacy is the ability to understand and use information from various digital sources in different contexts, academic, career, and everyday life. Moreover, Tang and Chaw (2016) boldened the definition of digital literacy by centering on computer and information literacy. Concerning a higher educational context, many students bring their experience of making meanings by using digital tools and in digital environments (Yamada-Rice, 201; Koltay, 2011). Consequently, more has been written on the complexity and variety of activities associated with emerging technology and the need to further match school learning with those of real-life (Burnett, 2014). Some studies argue that instead of treating classrooms as areas necessarily disadvantaged by an emerging process through which exposure and usage are constrained and controlled by curriculum restrictions, the emphasis will be more focused on improving the distinctive aspects of the classroom that can help the company to create effective sites for communicating with social technology (Yuan, Wang, & Eagle, 2019).

As far as digital literacy is concerned, Ting (2015) asserts that digital literacy requires autonomous learning because autonomy in digital literacy evolves as students seek to overcome the difficulties they face while assessing information through the internet and gathering fact by using their critical thinking skills. Different types of online learning platforms such as Youtube, Facebook, Twitter, Quizizz, Google Classroom enable students to become more autonomous in their learning. Informal learning and growth online platforms are critical places where digital literacy is both utilized and developed (Meyers, Erickson, & Small, 2013). Besides, Meyers, Erickson and Small (2013) emphasize that the informal settings may also promote the growth of digital literacy among young people by presenting them with problem-based tasks that reinforce the process of adopting the habit of mind to daily circumstances and real-world scenarios.

This is also supported by McLoughlin and Lee (2008) who argued that online informal learning environments enable students to direct their learning since they may select tools and collect resources
to organize, create, and shape their learning content and task to learn more effectively and efficiently. Meanwhile, Lotherington and Jenson (2011) highlighted that students should be able to exchange, source, and learn from accurate materials in conducting online learning. It can be done through critically engage, analyse, and evaluate materials retrieved from the web.

Considering the explanation above, this study attempts to investigate the implementation of digital literacy in EFL senior secondary schools to challenge the fourth industrial revolution challenges. It will provide guidance for EFL teachers about the strategy in planning, using, optimizing, and evaluating online materials in learning practices. Thus, the students will be more independent in managing their learning and ready to face the challenges of the fourth industrial revolution.

In this study, the researchers focus on the implementation of digital literacy by the EFL teachers in the classroom to promote learners’ autonomy. Besides, they want to answer the following research questions: (1) How is the digital literacy implemented in teaching English to promote EFL learners’ autonomy? (2) What are the challenges faced by the teacher and how to overcome them? Furthermore, the results of this study are expected to contribute to broadening the horizon of the teachers in integrating digital media in English classroom.

From the research explanation above, the researchers want to describe about “Promoting EFL Learners’ Autonomy through Digital Literacy in Facing Industrial Revolution 4.0.”

2. THEORETICAL REVIEW

The industrial revolution 4.0 demands people to use information and communication technology (ICT), or digital devices, usually referred to as computer skills or digital literacy. This idea leads us to the creation of the new occupations and increasing levels of mechanization and automation works and impact upon practically every aspects of our lives, including education (Min, Kim, & Song, 2019; Gleason, 2019). As far as digital literacy is concerned, Ting (2015) posits that digital literacy involves autonomous learning because autonomy in digital literacy develops when students try to resolve the difficulties they encounter when exploring the web and collecting resources for learning.

According to McLoughlin and Lee (2008) online learning environments supports students to manage their own learning since students select tools and collect resources to organize, create, and shape their learning content and tasks to learn more effectively and efficiently. Additionally, students should critically engage, analyse, and evaluate materials that they retrieve from the web. Digital literacy necessitates that the user is able to self-manage his/her learning, to use and work with the technology, to exploit its functions, and to discover further functions and possibilities of technology in order to develop greater digital literacy (Lotherington & Jenson, 2011). In addition, Ting (2015) asserts that digital literacy requires autonomous learning because autonomy in digital literacy evolves as students seek to overcome the difficulties they face while assessing information through the internet and gathering facts by using their critical thinking skills. Different types of online learning platforms such as YouTube, Facebook, Twitter, Google Classroom enable students to become more autonomous in their learning. Informal learning and growth online platforms are critical places where digital literacy is both utilized and developed (Meyers, Erickson, & Small, 2013). Besides, Meyers, Erickson, and Small (2013) emphasize that the informal settings may also promote the growth of digital literacy among young people by presenting them with problem-based tasks that reinforce the process of adopting the habits of mind to daily circumstances and real-world scenarios.

On the other hand, some indicators were proposed by Azedo and Aleven, (2013) focusing on several aspects, such as learners’ motivation, experience with Internet technology, time management skills, study environment management skills, learning assistance management skills (help seeking)

<table>
<thead>
<tr>
<th>Table 1. Indicators of Learners’ Autonomy</th>
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<td>Self-regulatory Abilities</td>
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<td>Motivation</td>
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<td>Experience with Internet technology</td>
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<td>Time management skills</td>
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<td>Study environment management skills</td>
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<tr>
<td>Learning assistance management skills (help seeking)</td>
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Some studies related to teaching digital literacy in EFL classrooms have been done by some researchers focusing on different aspects. A study conducted by Anggeraini and Mujianto, (2019) explored the teachers’ perceptions on their digital literacy in EFL classroom. The findings showed that English teachers provided digital tools and online teaching, used social media, and evaluated the downloaded materials and online resources. It can be concluded that the most of the teachers were moderate by having basic digital literacy competence and intermediate digital literacy in competence. Meanwhile, 54% of them have very low ability to guide others in operating a new application dealing with teaching media.

On the other hand, another study done by Pratolo and Solikhati (2020) focused on the implementation of digital literacy in an urban school with high-advanced technology facility. It aimed at investigating the implementation of digital literacy in a private senior high school, identifying teachers’ attitude in practicing digital literacy, exploring the challenges in implementing digital literacy. As the participants of this study, it involved two EFL teachers who were regarded as millenials teachers and capable to utilize technology. The findings showed that the teacher-participants showed positive attitudes by considering the syllabus as a core, understanding a teacher’s position, developing effective learning, using multiple literacy and enhancing the four language skills. However, the teacher also claimed that they faced some challenges especially related to the lack of technology, understanding toward the students’ background, less time and limited budgeting to implement the digital literacy practices in the classroom.

From some examples of the studies emphasizing the digital literacy practices, little have conducted the studies on teaching digital literacy to promote students’ learning autonomy. Therefore, this study attempted to fill the gap by considering some strategies implemented by the teacher in teaching digital literacy and their impacts on students’ learning autonomy.

3. METHODOLOGY

This study was designed in a qualitative method with case study. It was conducted in one private Senior High School in Surakarta, Central Java, Indonesia. Besides, the researchers took 26 participants which consist of 1 teacher and 25 students. In addition, the teacher involved as participant in this study was considered by her competences and experiences in teaching English.

To collect the data, the researchers used three instruments covered in observation, interview and document analysis. Due to the pandemic of Covid-19, the observation was conducted by the online classroom using digital application such Google Meet, Zoom, etc. Besides, it was done by using observation guide, audio-video recording and some note-taking to capture all single details of learning which is aimed to get detail information about how the digital technology was integrated in EFL classrooms and see the response of the teacher also the students in using such devices. In order to get the information deeply about the data, they took the interview. This technique was carried out to complete the information in observation techniques when there was unclear information during observation. In addition, Document analysis is applied to get some information related to the promotion of students’ learning autonomy and digital literacy skills. The documents come from lesson plans, students’ written works, and teacher’s material. Furthermore, the researchers applied data analysis technique proposed by Hamilton and Corbett-Whittier (2013).

3.1. The Activity in Teaching Digital Literacy in EFL Classroom to Promote Students’ Learning Autonomy

The researchers joined and observed online classroom out on June 30, 2020, in which aimed to capture information in learning focusing on the strategy of implementing digital literacy to promote students’ learning autonomy. Besides, the materials were delivered by teacher using such as Zoom, Google Meet, and Google Classroom in 90 minutes. The learning process were divided into three
phases, namely warm-up/or review, introduction, presentation, practice, and evaluation which every phase was done by the teacher through some strategies.

The topics covered at that time were the future tense where the teacher explained about the patterns of the time and to achieve the goal of the lesson, the teacher applied some strategies including brainstorming and mind-mapping to encourage the students focus on the topic. Besides, the teacher also stimulated the students to think about their future plans either their personal or career plans. By using this strategy, it was believed that giving the students personal knowledge was considered as one of the teacher’s strategy to raise the students’ autonomy.

In addition, the establishing the interpersonal relation between teacher and students or students to students become an important part to create lively online classroom at the beginning of the lesson. It was done by the teacher because the class was in passive class. However, based on the classroom observation, the teacher seemed to do those activities quickly without sharing the opportunity to the students, especially passive students to involve in the lesson.

Dealing with the teachers’ competence in managing the lesson, she was required to keep implementing the opening strategy through mind-mapping and brainstorming frequently. It caused that the teacher will promote the students’ autonomy well if it is done. Thus, having finished encouraging the students in the opening session, the teacher perceived obviously in guiding the students to get their lesson and actively participated in the interaction.

At the beginning, the teacher started to introduce new materials discussed in that meeting. In this session, the teacher was observed to use digital media such as digital video and visual pictures showing some activities relating future jobs. This alternatives activity made the teacher trust that digital media gave more contribution to the students especially in searching learning materials although they still asked their teacher guidance because they sometimes were not sure whether they could search by themselves.

Presentation was another phase of learning implemented by the teacher after introducing the lesson. In this phase, the teacher dominantly used digital technology to aid her in delivering the materials. The students were required to highlight some keywords gained from the video such as the name of the jobs, the verb use in future tense, and time indicators in the sentences stated by the man. Once the teacher had shown the video, she gave some questions to the students aiming at inviting them to collect their critical perspectives. By the questions, it indicates that the students had their own choices in responding the teachers’ questions. Besides, the students’ answers was identified that they connected their prior knowledge and experience to answer the questions. It implies the students’ own perspectives in giving the idea. From the teacher’s voice, this strategy revealed something good meaning that the teacher did not limit the students’ space to give their opinion but she encouraged them to feel free giving their points. This evidence was another indicator that autonomy was promoted well through offering students to answer the questions based on their personal views. Instead of the written document above, it was strengthened from the results of online classroom observation showing that the students seemed to be curious to present their ideas. In addition, it was executed through several ways such as responding in chat box of Zoom platform, filling out online attendance, using Canveto present their ideas. Also, the students used presentation by double tools which help them maximize their presentation without depending on their computer screen. By using tablet, they could write, explain, animate, and record their voices to perform multimodality literacy in presenting the materials. Furthermore, from the observation and interview the findings showed that it was done both individually and collaboratively. In term of collaborative presentation, the teacher let the group choose their own topic, strategy, and the job distribution.

**Table 1. Teacher’s Questions to Gain Students’ Critical Perspectives**

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<tr>
<th>No</th>
<th>Teacher’s Questions</th>
<th>Students’ Answers</th>
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<tr>
<td>1</td>
<td>If you were the man in the video, why did you choose those jobs?</td>
<td>Because it was interesting.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Because it was in line with my education.</td>
</tr>
<tr>
<td>2</td>
<td>Do you think the jobs are relevant to his life goals? Why?</td>
<td>Not exactly, but still related.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not at all. But he will try his best.</td>
</tr>
<tr>
<td>3</td>
<td>If the man could not reach his dream jobs, what would he do?</td>
<td>He will find another one but still related.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>He will enjoy whatever the job is.</td>
</tr>
<tr>
<td>4</td>
<td>Did the man have the idea to get more jobs?</td>
<td>I don’t think so, because he looks lazy and passive.</td>
</tr>
</tbody>
</table>
The last phase is evaluation. It is purposed to know the running program of using digital literacy in promoting learners’ autonomy. The teacher evaluated both herself and the students including the lesson plan she made, students’ projects, learning media, and some statements of the students in presenting the materials. In evaluation phase, the teacher found that the lesson plan did not match the expected outcomes of the students. She admitted that the students went beyond her expectation because usually they were very dependent to the teacher, particularly in learning new materials. The teacher flashed back to her experience in teaching the students by stating that they were frequently irresponsible in finishing their task. The teacher was required to remind the students about the task and re-explain the materials before proceeding to the other activities.

Table 1. Assessment Results of Learners’ Autonomy made by the Teacher

<table>
<thead>
<tr>
<th>Self-regulatory Abilities</th>
<th>Assessment Results</th>
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<tr>
<td><strong>Motivation</strong></td>
<td>Students have strong confidence in ability and skills to perform their learning tasks. They appealed to technology that helped them construct new projects based on the materials which have been delivered previously. The students could state their reasons to engage in a learning task.</td>
</tr>
<tr>
<td><strong>Experience with Internet technology</strong></td>
<td>All students claimed that they were familiar with the use of internet to support their learning. Consequently, they have a strong confidence in using the internet to find related learning resources and literatures.</td>
</tr>
<tr>
<td><strong>Time management skills</strong></td>
<td>They independently distributed the learning tasks to their colleague and managed their learning time effectively and productively. As a result, they finished their task on time.</td>
</tr>
<tr>
<td><strong>Study environment management skills</strong></td>
<td>The students knew how to make their learning environment became comfortable for them, either synchronous or asynchronous.</td>
</tr>
<tr>
<td><strong>Learning assistance management skills (help seeking)</strong></td>
<td>They could determine when they needed the help of the teachers and their friends. They tried to finish their job by themselves and evaluate the tasks which required teacher’s aids.</td>
</tr>
</tbody>
</table>

To make it clear, the results of the assessment were summarized by the teacher in the form of the table as seen above. The teacher further stated that she assessed the students’ learning autonomy based on the learners’ autonomy rubric assessment proposed by Azedo and Aleven (2013) covering motivation, experience with Internet technology, time management skills, study environment management skills, and learning management skills.

### 3.2. The Challenges Faced by Teachers and the Strategy to Solve Them

The success of teaching of digital literacy skills successful in promoting students’ learning autonomy does not guarantee the teacher to avoid the challenges in performing digital-based English materials. The data from the classroom observation revealed that the teacher got overlapped in delivering the materials, especially in setting the learning sequences to the students. The teacher frequently repeated the same activities in learning and asked some questions which were very confusing for the students. Thus, it means that the experience of the teacher does really matter in determining the success of learning particularly to promote students’ autonomy. The teacher’s experience will help her designing learning purposes and activities which facilitate the students to work independently and collaboratively by using digital devices.

Another challenge comes from the teacher’s understanding about the materials that would be covered both in the lesson plan and learning activities. From the analysis results to the teacher-made lesson plan, the teacher only focused on teaching grammar (simple future tense) in a direct way rather than through various activities. In fact, her performance in teaching this type of sentence was done differently by implementing several strategies, including video-project.

To overcome the challenges, the teacher explained that she committed to join some teachers’ webinars in professional development. These programs broadened her horizon about digital literacy especially to integrate digital devices for teaching English in this century. The teacher also mentioned that these programs allowed her to practice to use digital media that are students-friendly and easy to use.
Based on the data analysis results, it can be found that digital literacy in EFL classroom can promote students’ learning autonomy. The teacher enables to improve the students’ ability in using the technology independently. Besides, the digital literacy covers five competence areas including information and data literacy, communication, collaboration, digital content creation, safety, and problem-solving. It is also added by Eshet-Alkalai (2004) who claimed that digital literacy involves more than the mere ability to use software or operate a digital device, but rather it consists of a large variety of complex cognitive, motor, socio-logical, and emotional skills, which users need in order to function effectively in digital environments. This perception is in line with the data from the interview with the teacher who claimed that digital literacy is not about technology or digital skills that should be mastered by the students, but rather it is a collaborative process in which the students could communicate, share ideas, and make an innovation from their knowledge and experience through digital devices.

Regarding this, digital literacy is expected to provide students to become more independent, goal-directed, and technology literate. Unlike traditional approaches, self-directed learning through technology requires both the teachers and the students to have specific knowledge, skills, and disposition to successfully navigate their autonomy in learning (Liu, Liu, & Tu, 2020). To teach digital literacy in EFL classroom, the data from the classroom observation imply that the teacher followed the model of teaching digital literacy to promote students’ learning autonomy proposed by Lotherington and Jenson (2011) which covers several interrelated elements under the digital literacy umbrella. It started from the basic access, awareness and training to inform students and build their confidence in using sophisticated and complex technologies to learn. The teacher acclaimed that they did not need to follow the strict and rigid sequences of learning since it relates to the need analysis of the students. According to Lotherington and Jenson (2011) digital literacy acts as the fundamental skills towards the higher, more transformative levels, and does not need a sequential process since it depends on the needs of individual users. More importantly, the implementation of digital literacy in EFL classroom should cover three main points, such as use, understand, and creativity (Lotherington & Jenson, 2011).

Use, according to Lotherington and Jenson (2011), refers to the technical fluency that is needed to engage with the computers and internet. The data from the interview with the students revealed that they have already familiar with computers and other digital devices but they do not know how to use these devices in language classroom. The teacher should stimulate them to use the technology in their learning practices to access information and broaden their knowledge. The students also claimed that by using digital devices in learning, they could manage themselves to be more informative since they could access information and reading sources from search engine.

Understand, as the second point indicates the set of skills that help individuals to comprehend, contextualize, and critically evaluate digital media so that they could make informed decision about what they do and encounter online. It is proved by the data from the observation that the students tried to work independently and collaboratively through technology applying the knowledge they have gained in the classroom. They discussed one another to find the strategies in accomplishing the task (video group projects). The teacher also believed that understand is the essential part of teaching digital literacy because it affects their behaviour and perceptions, beliefs, and feelings about the world around them. It prepares both of the students and the teacher to be open-minded and tolerances toward others.

Lastly, creating is the ability to produce content and effectively communicate through a variety of digital media tools. The data from the classroom observation shows that the students present their creativity in the end of the learning through a video they made addressed to the various contexts and audiences, create, and communicate with them. The video made by the students covered their voices responding to some issues given by their students. The teacher also believed that create in digital literacy enabled students to think at higher levels and produce them in the form of digital products.

4. CONCLUSION

Based on the data analysis results, it can be concluded that digital literacy is able to promote the students’ learning. The results of this study also show that technology requires students to collaborate, think critically, and communicate one another with the aid of technology to solve the problems. In
other hand, the teachers were not ready yet to teach digital literacy skills in English classroom as seen in the challenges faced by them. The teacher assumed that digital literacy is entirely dependent on the function of technology without considering the roles of the students and the teacher in the learning process. In addition, digital literacy provides students various experience in learning which can improve the students’ skill in elaborating, collaborating, integrating, thinking critically, and communicating in using technology. Furthermore, by having this skill in learning, the students are expected to be able a problem solver and decision maker in 21st century.

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