

Developing Online Critical Literacy Assessment for EFL Learners

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ABSTRACT

The purpose of this research is to develop a critical literacy assessment in online context for EFL learners through designed based research. The assessment was developed through multiple iterative cycles of development, pilot testing, and refinement. The first phase, the development process, include conceptualizing online critical literacy, analyzing the needs for assessing the online sources credibility, and analyzing the aspects of critical literacy in online context. The second phase is expert review which involved the two experts in reading and the teaching of EFL. The third phase, the pilot testing, was conducted through online test and involved think-aloud protocol and interview. Findings of the research shows that this online critical literacy assessment has fulfilled the standard, which include clarity of the assessment, the relevance of the tasks according to the critical literacy concept and the new media ecology, and the appropriateness of the assessment based on the level and the goal of the learning at the tertiary education. Implications of this study include the adjustment of the online critical literacy assessment and the additional instrument to explore the strategies students use to evaluate online sources, their perceived ability of using online tools, and their communicative practices.

Keywords: *Critical literacy, Digital media, Assessment, EFL, Pre-service teachers, Designed-based research.*

1. INTRODUCTION

The advancement of digital technology has resulted in the new media ecology and influenced the communication in the 21st century. The most crucial aspect of the 21st century is the undeniable change in literacy practice. Before the turn to the millennium, most of us received our information from the newspaper, books, and other printed materials and television. The new communication technologies have amplified the reliance on digital information supported by the Internet.

Scholars argue that digital revolution have contributed to the changing in the way information is disseminated and accessed. Purcell [1], for example, have noticed three changes in how people access information. The first change is related to the form of news. People used to rely on the news distributed in fixed place and at the fixed time. Consumers are relying more and more on mobile news accessed at the consumers' convenient time. The second change is

based on the type of news. Right now news is customized and tailored to the consumers' needs and desired. Finally, the third change is on how people access news. Instead of relying solely on printed news or the online news provided by the traditional media organizations (the big dominant media companies), people also access their information made available by distributed forms of discovery through their social media and the search engines [2].

In the same vein, Nelson and Taneja [3] acknowledged the increased role of social media sites as the sources of news. The flexibility of social networking sites in providing platform for sharing news, entertainment, and personal connection has provided aggregated way of mixing various types of information that appeal to people.

The ubiquity of social media and internet-based information has required redefinition of being a literate person. Being able to read and write constitutes the vary basic skill that needs to be expanded by including the ability to evaluate information.

Hobbs [4] identifies core competences of citizenship in digital age, which include the ability to:

- a. make responsible choices and access information by locating and sharing materials and comprehending information and ideas;
- b. analyze messages in a variety of forms by identifying the author, purpose and point of view, and evaluating the quality and credibility of the content;
- c. create content in a variety of forms, making use of language, images, sound, and new digital tools and technologies;
- d. reflective on one's own conduct and communication behavior by applying social responsibility and ethical principles;
- e. take social action by working individually and collaboratively to share knowledge and solve problems in the family, workplace and community, and by participating as a member of a community.

Research on students' ability to locate and evaluate information has shown that students are not well-equipped to handle the flow of online information. The national survey conducted by Stanford University History and Civic Group middle school, high school, and college students revealed that many students were not able to distinguish reliable information from the bad ones [5].

Most assessments on locating and evaluating information were conducted in the settings in which the participants were speakers of English as the first or second language [6, 7, 8]. While many users of English information are people whose main language of communication is not English, there are limited, if not at all, assessments that can give perspective regarding EFL learners' ability to access and evaluate online sources in English.

This research is aimed to develop a critical literacy assessment in online context that is suitable for EFL learners at the tertiary level.

This research draws from the conceptual framework of the multiliteracies and critical literacy. The notions of multiliteracies and critical literacy have challenged the idea of "old literacy" that focuses too much on the core basic skills of reading and writing as isolated skills. The "old literacy" promotes restricted form of skill practice based on "the assumptions of applicability across all contexts" [9].

The New Literacies Studies (NLS) tradition, that contributes to the development of multiliteracies concept and aligns with the notion of critical literacy in online contexts, has challenged the idea of learning literacy as a set of isolated skills. Scholars within this tradition regard literacy as situated social practice in

which reading and writing function as forming parts of purposive, relational, and social action [9, 10].

The concept of literacies has developed along the advancement of information and communication technologies. Goodwin [11] describes the evolution of literacy in three phases: the first one is the pre-digital age which is characterized by the existence of technologies that functions in one dimensional way (e.g. magazine, newspaper). In this phase, literacy is defined as the ability to read, write, speak, and listen; the second phase is mid-digital age which is described as transition time between the early acceptance of digital tools and the full immersion of digital tools in our mainstreamed life. In this second phase, literacy is still regarded as the four skills mentioned earlier; the third phase is post digital age, which is what we experience now. In this current age, digital technologies become inseparable part of our daily life. Our understanding of literacy has also changed as the result of the changing in our communicative practices due to the affordances of digital technologies.

Responding to the changes in information and communication tools, The New Literacy Studies paradigm perceives literacy as social practice that entails a new approach to conceptualizing and theorizing literacies. Multiliteracies is the concept rooted in this paradigm. Multiliteracies is the notion that acknowledges multiple literacies rather than singular literacies. This is also an approach to reconceptualize meaning making construction in digital contexts and to accommodate multimodal way though which meaning occurs [12][13].

The engagement with information in various forms and sources calls for the ability to think critically and evaluate the sources. These abilities are essentially the focus of critical literacy. Critical literacy is a necessary defense against misinformation and sly prevaricators massively spread in the digital platforms [14][15].

Literacy scholars are convinced that there are overlapping literacy skills for both the printed (offline) reading and online reading as well as the need for new media literacy skills. Kymes [16], for example, argued that good readers used the following strategies when they read printed text and online text:

- a. awareness of purpose;
- b. skimming, scanning, and reading selectively;
- c. activating prior knowledge and maintaining the dialectic;
- d. discovering new meanings of words;
- e. rereading and notetaking for retention of key information;
- f. interpreting or paraphrasing text and "conversing" with the author;
- g. evaluating text structure and quality;
- h. reviewing information;

Despite these similarities, literacy activities in online contexts also require competences unique to the online environment.

1.1. Critical Literacy and Digital Media

Digital media have drastically evolved in the past years because of sophisticated technologies and the rise of start-up technology companies. Technologies have supported the development of various digital platforms, such as social networking sites, Wikipedia, live-streaming, cloud computing, and Machine Learning. The ubiquity of critical digital media literacy in our daily life has required digital literacies which involve the ability to read and write across various media platforms in different modes (i.e. written, visuals, sounds, video, animation) and to participate in digital community [17, 18].

Furthermore, Chaka [19] supports the integration of critical digital literacy in the context of semio-technologies, which have colonized and disrupted our everyday life. Semio-technologies are defined as constellation of techno-cultural assemblages working through and using signs to mediate, configure and translate data, information and linguistic symbols which integrates with cultural practice in the process of communication in online environment [20].

With the increased reliance on these semio-technologies for information, critical literacy and media competence are key qualities of a person's effective engagement as a member of a mediatized civic society.

1.2. Model of Assessment

As students engage more with technologies in school as well as out-of-school contexts, their literacy practices have shifted from dominantly printed texts to digital texts. Despite the digital divide, computers and tablets have been used widely in the learning process in school [21][22].

This increased used of digital texts and engagement with technologies to get information have implications of how we assess students' comprehension and their ability to locate and evaluate information. Leu and his colleagues at the University of Connecticut [6][7], for instance, have done extensive research on online reading comprehension assessment (ORCA) for students at the elementary and middle school levels. ORCA measures online research and comprehension in virtual world through the use of social network, web pages, and Google search engine.

Sormunen, et.al. [23] assessment designed a competence-based performance, called NEURONE Assessment, to measure adolescents' competences in online inquiry. Their assessment consisted of four dimensions, namely, searching and selecting relevant

sources, identifying the main ideas presented in the sources, evaluating the credibility of the sources, and synthesizing information across sources. The tasks in this test were open-ended and reflected complex problem requiring students to use higher order thinking. The case study that implemented this assessment showed that this assessment captured a comprehensive set of complex skills. The author also argued that this assessment could also be used to the online literacy ability of students at the elementary level.

At the national level, research conducted by the researchers at Stanford university has assessed how students at middle school, high school, and college distinguished the valid information from the mis-information and evaluate the sources. The assessment include analyzing information from a website article, Facebook, YouTube video, Twitter, and online magazine. The tasks vary according to the level of students in which the assessment is intended for [5][24].

All of these models of assessment are implemented in the classroom where students speak English as their first and second language. They are also intended mostly for students at the elementary, middle, and high schools.

2. METHOD

This study employed design based research to develop a critical literacy assessment that focuses on evaluation of information credibility in the online environment, following the principle of designed-based research as the development and research which take place through continuous cycles of design, enactment, analysis, and redesign [25][26]. Furthermore, the research is intended to reflect an inquiry that "involves producing demonstrable changes at the local level" [27]. The changes in local level refers to the situated critical literacy assessment for the context of EFL learning

Design based research was suited to develop a prototype of online critical literacy assessment through two stages that include a series of phases which is described in Figure 1.

2.1. The First Stage

The first stage comprises of four series of phases described below.

2.1.1. Analysis of Literature and Needs Analysis

The first phase is conceptualizing critical literacy in relation to internet-based communication. The researchers focused on conceptual and empirical research articles related to critical literacy in the context of online practices. The selection was based on the following criteria:

- a. The conceptual/theoretical paper is written by the scholars who have consistent publication track on the topic of reading in online contexts
- b. The article focuses on online reading comprehension and evaluation and was published in a reputable journal or book chapter

In addition to the analysis of the existing literature on online reading assessment, the researchers also conducted a focus group discussion with students to know their preferred technological tools and media to access news and entertainment, to connect with people, and to support schoolwork.

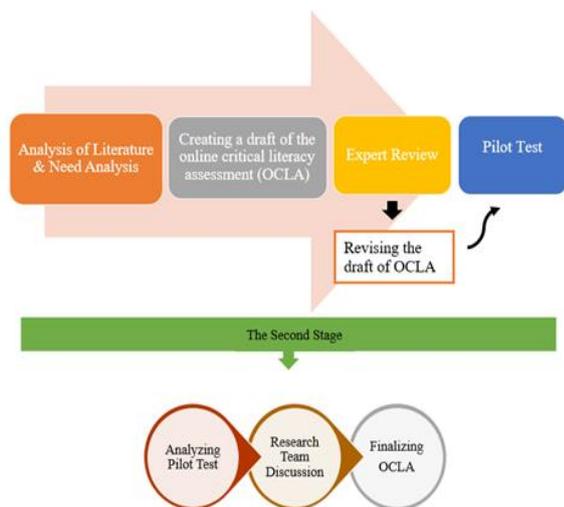


Figure 1. The two-staged process in developing the online critical literacy assessment

2.1.2. Creating a draft of the online critical literacy assessment

Based on the meta-analysis of the previous research on critical literacy coupled with the need analysis, the draft of the online critical literacy assessment was constructed. The first design used paper-based construction for easy development. After the paper based-draft was complete, the researchers transferred and modified the assessment for the online version. Researchers opted for Google form for the online assessment because of its flexibility and familiarity for most students.

2.1.3. Expert Review

This online critical literacy assessment was reviewed by two experts in the field of reading and TESOL. The first reviewer was a professor with over 40 years of teaching experience and is an active researcher in the field of reading. The second reviewer was a PhD degree holder in TEFL and literacy and a lecturer who has experience with reading research.

The qualifications of these reviewers warrant a good judgement of the quality of the test. Their suggestions

would also improve the quality of the online critical literacy test.

2.1.4. Pilot Test

The pilot test was conducted to see how the online critical literacy assessment was implemented. This pilot test involved fifteen participants from English education major. The participants were from the third, fifth and seventh semesters.

The pilot test was conducted online through Zoom meeting. The participants were given the access to Google form that hosts the online assessment. Throughout the pilot test, the participants turned on their camera and shared screen of their activity in doing the pilot test. Think-aloud protocol was also done throughout the test. Think aloud is a strategy to capture what readers are thinking when they are doing the reading process.

This online test was then followed by interview. The interview was intended to understand what was going on during the online test. It was also a way to know what strategies the reader used and what difficulties they experienced during the test.

2.2. The Second Stage

The second stage consisted of three phases, which began with the analysis of the results of the pilot test. The research team revisited the observation notes and recording of each pilot test session to glean insights from the pilot participants' engagement with the tasks. This is followed by discussion among the research team members to revise according to the reviewers' suggestion and the findings from the pilot test. The final step includes creating rubric for each task in the assessment, and editing and finalizing the assessment for practical use.

3. RESULT AND DISCUSSION

Findings are comprised of three sections; the findings and discussion of analysis of key literature and needs analysis, the findings and discussion of reviewers' evaluation, and the findings and discussion of the pilot test.

3.1. Findings on analysis of key literature and needs analysis

Scholars of literacy have examined critical literacy within an involving digital landscape. With the changing in literacy landscape in the past decade, the discussion of critical literacy has focused on digital practices. Despite some similarities, studies have emphasized that skills traditionally associated with print-literacy are not always isomorphic with the skills needed for comprehending online information [28, 29,

30]. The nature of online texts are multimodal which require readers to navigate design elements and visual images in addition to understanding the written language [31].

Research on critical literacy in online contexts suggest that skills in locating, organizing, and comprehending information are not enough to participate in online civic participation. The crucial skills to thrive in the digital era include the ability to analyze and evaluate the credibility of the information [32, 33, 34].

Critical literacy for online context cannot be assessed with multiple choice test because this type of test, even though is easy to administer and grade, is not suitable to assess the reasoning process involved in evaluating the credibility of information. Instead, researchers of online literacy suggest open ended tasks that require students to:

- a. evaluate the credibility of the websites by considering who is behind the sources [35].
- b. determine trustworthiness, readability, and usefulness [36].
- c. navigate the online landscape [37].
- d. employ digital practices and critique online information [38].

The focus discussion with the students informed the researchers about their preferred social media and their access and use of technologies. In contrast with the older generation, the university students age 18 – 21 admitted that they did not consider Facebook as their main social media. In their view, Facebook is only for catching up with their older relatives and some lecturers who used Facebook in their teaching. The students used Instagram to engage in social interaction and catching up with current information. They also used WhatsApp to communicate with various audience.

Based on the analysis of the literature and needs analysis, the online literacy assessment consists of six tasks:

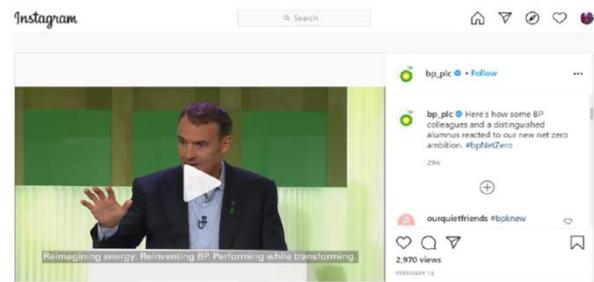
- a. Evaluating credibility of visual information.
- b. Evaluating WhatsApp Group Message
- c. Comparing and evaluating two websites
- d. Distinguishing between news and advertisement or sponsored content within an online magazine
- e. Evaluating the credibility of a YouTube video
- f. Evaluating Instagram post

The topics in the assessment relate to current events and controversial topics that require students to think more deeply. The topic includes determining the credibility of an image regarding ‘nuclear-impacted

flower’, COVID19 prevention, climate change, various topics related to factual article and sponsored articles (tacit advertisements), video of conspiracy theories regarding COVID19, and Instagram post on the company’s commitment/promotion of their program in net zero on carbon.

Task 6 Instagram Post

Companies use Instagram to promote their programs and improve their images. In this Instagram post, the company focuses on reimagining energy for net zero on carbon.



<https://www.instagram.com/p/B8tw0AOn4xE/>

Question: Do you trust this video as the proof regarding the company’s commitment to the environment? Please explain your answer.

Figure 2. An example of task in online critical literacy assessment

3.2. Findings on reviewers’ evaluation

3.2.1. Reviewer Feedback

Reviewers assessed the draft of the Online Critical Literacy Assessment (OCLA) focusing the following aspects:

- a. Clarity of the assessment
 - The instruction in the assessment is clear
 - The question in each task is clear
 - This online critical literacy assessment is easy to navigate (for students)
 - This assessment is easy to administer (for teachers).
- b. The relevance of the tasks according to the critical literacy concept and the new media ecology
 - The types of online sources used in this assessment reflect the commonly used online sources young people use to get their information.
 - The topics selected for this assessment are relevant for the current situation
 - The assessment reflects critical literacy skills needed to evaluate online sources
- c. Appropriateness of the assessment based on the level and the goal of the learning at the tertiary education
 - The assessment’s level of difficulty is appropriate for ESL students at the university level.
 - The assessment requires higher order thinking skills.
 - The assessment assesses students’ competencies of critical online reasoning, i.e. who is behind the

information, what is the evidence, and what other sources say.

Table 1. Reviewers' evaluation of each aspect in the instrument

No.	Statement	Reviewer 1	Reviewer 2
1.	The instruction in the assessment is clear	Agree	Strongly Agree
2.	The question in each task is clear	Agree	Strongly Agree
3.	The types of online sources used in this assessment reflect the commonly used online sources young people use to get their information	Strongly Agree	Strongly Agree
4.	The assessment reflects critical literacy skills needed to evaluate online sources	Strongly Agree	Strongly Agree
5.	This online critical literacy assessment is easy to navigate (for students)	Agree	Strongly Agree
6.	This assessment is easy to administer (for teachers)	Agree	Strongly Agree
7.	The assessment's level of difficulty is appropriate for ESL students at the university level	Strongly Agree	Strongly Agree
8.	The topics selected for this assessment are relevant for the current situation	Agree	Strongly Agree
9.	The assessment requires higher order thinking skills	Strongly Agree	Agree
10.	The assessment assesses students' competencies of	Agree	Strongly Agree

No.	Statement	Reviewer 1	Reviewer 2
	critical online reasoning, i.e. who is behind the information, what is the evidence, and what other sources say		

3.2.2. Reviewer Feedback

3.2.2.1. Reviewer 1

In general, it is good since:

- it requires the respondents to be responsible to what they have filled in;
- respondents are given freedom to do the tasks based on their own pace;
- it allows respondents to use whatever language they feel comfortable with;

However, you may want to revise the task no. 1 due to those related to the spelling, capitalization, and spacing.

1.1.1.2. Reviewer 2

I think the assessment instrument is useful in eliciting students' critical thinking. Therefore, the questionnaire can be used for the research. Other than the questions provided in the questionnaire, the researcher can also ask the participants to provide one example or more of trustworthy online news, reports, etc.

The experts' opinion and comments show positive review regarding the three aspects of the assessment. The draft has met the criteria of good assessment for online contexts, which include: clarity of the assessment, the relevance of the tasks according to the critical literacy concept and the new media ecology, and the appropriateness of the assessment based on the level and the goal of the learning at the tertiary education. The reviewers' feedback was only on some language revision (editing and proofreading) and a possibility of adding some questions regarding students' use of technology. These feedbacks were accommodated in the revised version on the online critical literacy assessment.

3.3. Findings on the pilot test

The pilot test has shed light on some issues related to technology access and use, flexibility of the online platform, and students' reading strategies.

In terms of the technology access and use, the participants in this pilot test mostly rely on mobile phone to do the tasks. The ownership of mobile phone is ubiquitous in Indonesia, especially in the context of higher education. It is pretty hard to find a university student without a mobile phone. The current pandemic that requires institution to shift to online learning has also encouraged more reliance of mobile phone and internet for schoolwork.

In the pilot test, 9 out of 15 participants used mobile phone to do the online critical literacy assessment. Some of the participants did not own laptop, but share desktop computer with the rest of their family. Some of them who own personal laptop could not use it because of the bad connection. For most of them, the internet service is best used with their mobile phones.

The use of mobile phone affected the way the participants did the tasks in the assessment. The use of mobile phone did not provide flexible opening of multiple tabs to open the link or other supporting tool, such as dictionary. Using laptop provided easier access to multiple sources and allowed fast typing of the answers. Figure 3 and figure 4 show the different layouts of the assessment visually.

From these two figures we can see the contrast of displays between two digital tools, the mobile phones and the laptop. The laptop provided access to multiple tabs seamlessly, so it is faster to check for the information.

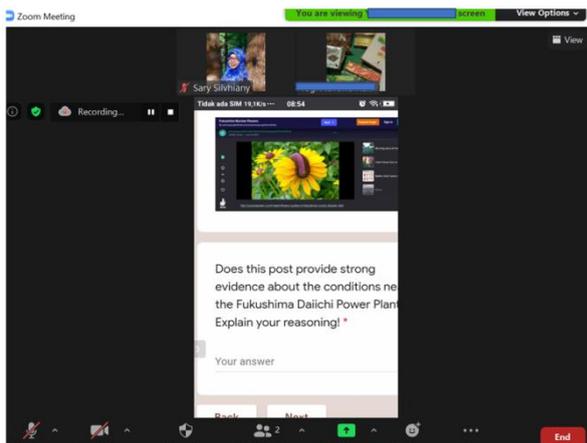


Figure 3. The online critical literacy assessment as displayed in the participant's mobile phone

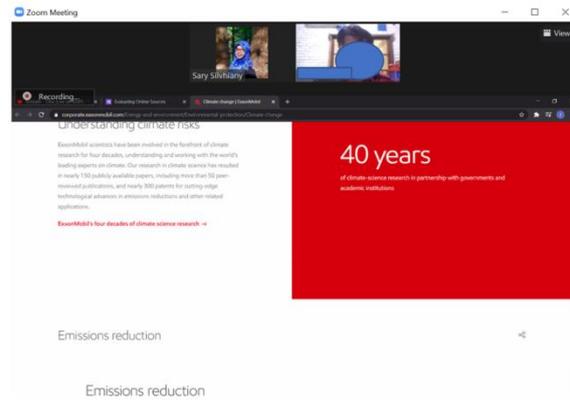


Figure 4. The online critical literacy assessment as displayed in the participant's laptop

From the observations of the pilot test and the evaluation of the whole process, the researchers also considered the need to develop additional instrument that can replace think aloud protocol. Think aloud protocol was helpful when the participants verbally active during the reading process. However, most of time the participants were too focused on doing the task and made infrequent verbal comments. This finding suggests the need to design additional instrument that can capture the students' reading process and habit.

4. CONCLUSION

This online critical literacy assessment has fulfilled the standard, which include clarity of the assessment, the relevance of the tasks according to the critical literacy concept and the new media ecology, and the appropriateness of the assessment based on the level and the goal of the learning at the tertiary education.

Following the results of the pilot test analysis that recommend the additional instrument to gather information regarding students' strategies and habits, the researchers added a survey. The survey consists of questions regarding students' perception about the tasks (e.g. which one is the most challenging, what difficulties they face as they evaluate the online information), the strategies they use to complete the task, and some questions related to students' reading and technology habit.

The revised online critical literacy assessment (OCLA) combined with the additional survey instrument will provide a strong assessment to understand how EFL students at the tertiary level process and evaluate online information and to make informed decision about the best practices to teach critical literacy at the EFL class.

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