



## Exploring the Digital Literacy of Indonesian Generation Z Teachers in English Instruction

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<http://dx.doi.org/10.18415/ijmmu.v9i5.3767>

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### **Abstract**

There have been lots of studies revealing the digital literacies of generation z students. However, few researchers discuss the digital literacies of generation z teachers. Being the digital generation, especially working as educators, means that digital literacy is inescapable. This research will lead to some interesting facts about the readiness of Indonesian generation z teachers to teach English digitally. This research tries to find the stages of digital literacy of generation z teachers based on the technology integration theory by Puentedura (2012). This research applies a qualitative approach. Using purposive sampling, the researcher has selected 10 generation z teachers who teach English at Indonesian schools. The data are then analyzed and divided into four categories which are substitution, augmentation, modification, and redefinition. Of the four categories, it's obtained the result that the grand mean of substitution is 72%. For the augmentation level, the percentage mean obtained is 66% followed by the modification level with 55%. The lowest level received is in the redefinition level with only 36 %.

**Keywords:** *Generation Z; Teacher; Technology; Integration; Digital Literacy; English*

### **Introduction**

The birth of the internet in 1995 has resulted in the birth of new generations (Seemiller & Grace, 2017). This generation is then named the Z-Generation (Gen-Z) with the characteristics of being digital natives. Z-generations have been affected deeply by technology due to the easiness of their access to information by being born in a world that is widely connected to the internet (Rothman, 2016). Many researchers then consider this field as a separate topic that is important to study.

There are more than 2.7 million teachers registered in the Indonesian ministry of education including civil servants and honorary teachers. The young teachers including millennials and generation Z, represent small percentages in the big numbers but these are the generations who interact with digital technology a lot. However, being exposed to the internet and digital technology does not guarantee that a person has good digital literacy.

In addition, Indonesian citizen possesses a low literacy level. It's proven by the survey of Digital Civility Index (DCI) Microsoft saying that Indonesian internet users rank the lowest in Southeast Asia (Coconuts, 2021). In other words, it is the most disrespectful in the region. In addition, the DCI by Microsoft said that three factors are being the reasons for putting Indonesia as the rudest internet user in Southeast Asia.

Those three factors which influence the risk of modesty in Indonesia are (1) the highest were hoaxes and fraud, which rose 13 points to 47 percent. (2) Then the hate speech factor increased by 5 points to 27 percent. And the third is (3) discrimination by 13 percent, which is down 2 points compared to the previous year.

The other indications of low literacy level are tangible from the habit of Indonesian students and teachers who have low interest in reading and writing. The low level of literacy in the school or educational environment can cause cyber-bullying, fraud, or being dragged into negative and also offensive action.

According to ILA's 2018 report, digital literacy tops the list as the most prescient topic to be addressed in literacy education. This is actually in line with the motto of our education about literacy movement. In addition, a research conducted by (Durriyah & Zuhdi, 2018) indicates that many teachers who are active users of digital technologies do not implement digital literacy for teaching purposes. In addition, acquiring literacy is fundamental for one's development. In addition, people whose literacy skills are developed are more likely to explore and reach their potential.

Based on these concerns, the writer is interested in taking this case deeper into research to find and reveal the digital literacies of Indonesian generation z teachers based on the technology integration theory of. Specifically, the writer focuses on English instruction.

## ***Literature Review***

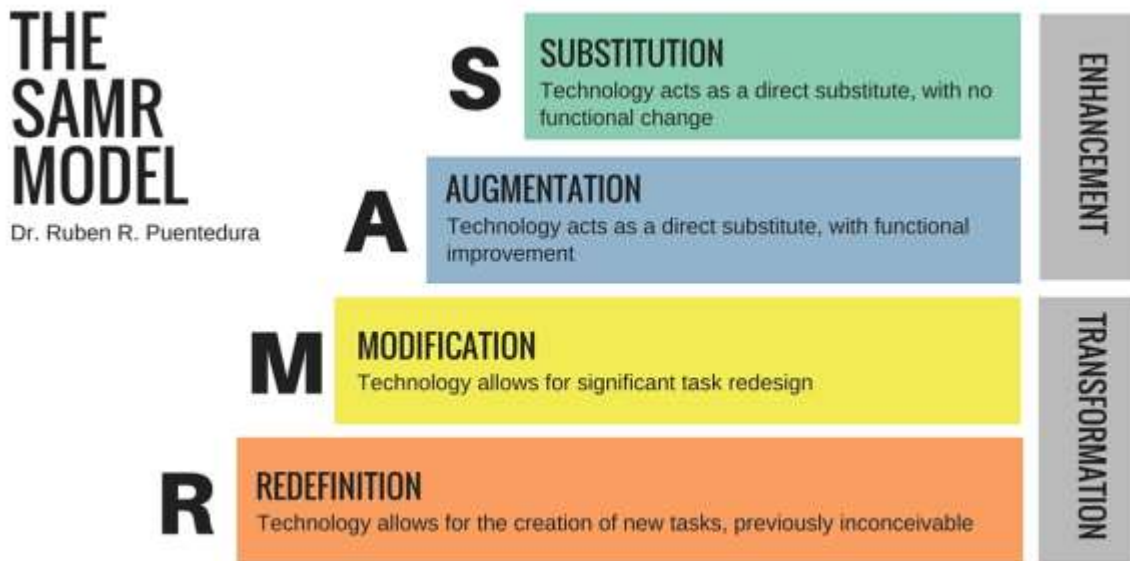
Digital literacy is defined as "the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers" (Gilster, 1997). Basically, "digital literacy represents a person's ability to perform tasks effectively in a digital environment, with 'digital' meaning information represented in numeric form and primarily for use by a computer" (Jones & Flannigan, 2006).

One of the implementations of digital literacy is technology integration. EdTech Connect (1999) define technology integration as a learning activity that combines the use of technology and learning materials simultaneously to enhance teaching and learning (educational technology). Meanwhile, Ogle, Branch, Canada, Christmas, Ed Goddard, Loudat, Purwin, Rogers, Vinson (2002) suggest technology integration can be interpreted as synthesizing technology resources and technology-based practices into daily life, work, and school management. Technological sources can be in the form of computers and special software, network-based communication system, and supporting facilities and infrastructure.

The researcher applies SAMR Model in this study to observe the digital literacy integration, so the definition provided below is about SAMR by Puentedura (2010). SAMR model is a learning model integrating technology. The model appears to be simple yet able to describe technology integration into the learning process comprehensively Puentedura (2010).

Puentendura classifies the degree of use of ICT for pedagogical purposes into two major levels: Enhancement and Transformation. The first one emphasizes the use of ICT with the goal of improving the learning process, its use is rather moderate and the activities according to this step could equally be

performed in a traditional way, while the second one is focused on transforming learning in student, since those tasks that correspond to this step are of a more complicated nature, being very difficult, or even impossible, to carry out without making use of ICT. However, at the same time, these two levels are divided into two different steps each. The four level SAMR model comprises Substitution, Augmentation, Modification, and Redefinition.



Puentedura (2012)

### **Methodology**

This research was conducted to find out the digital literacy of generation z teachers in English instruction. An observation and semi-structured interview were employed to collect the data. Then, the data were analyzed by using the qualitative technique.

A semi-structured interview was conducted with ten selected participants randomly to gain in-depth data. The interview questions were adapted from (Alkaromah et al., 2020). The participants were asked to share their teaching experiences using technologies. The result of the interview was collected, transcribed, presented, and summarized as the findings of the research.

### **Findings and Discussion**

The findings show that all four levels of integration of digital literacy into English instruction have been implemented by generation z teachers. To make it more comprehensive, the writer has categorized the findings into four divisions which are elaborated as follows:

#### **The Implementation of Substitution Levels of Generation Z Teachers**

The substitution is the basic level of the four integration stages proposed by Puentedura (2012). 10 Observation aspects have been distributed to see how far the integration of substitution levels in the classroom practices.

Table 1. The description of substitution Levels and Mean

No.	Questions	N	Mean
1	The participant uses ICT devices to prepare lessons and assessments	10	100%
2	The participant uses digital taking notes instead of printed book	10	80%
3	The participant uses presentation tools (such as power point, canva, etc) to deliver the lesson	10	100%
4	The participant uploads the teaching and learning materials on WhatsApp or other electronic sites/devices for students to access.	10	70%
5	The participant refers students to an electronic database for reference materials instead of hard copy textbooks.	10	30%
6	When supporting his students, the participant communicates with them using his cell phone and other devices.	10	80%
7	The participant prefers students submit their coursework assignment through email	10	50%
8	The participant has specific folder in his laptop to manage file of his students works.	10	100%
9	The participant records his teaching learning process on CDs/other media and gives them to his students.	10	30%
10	The participant takes video/audio recording of his self while lecturing and uses them in the upcoming class to teach the same course to another group of students.	10	80%
Grand Mean			72%

From the table, it can be seen that the perfect levels are available in the observing question number 1, 3, and 8. One of teachers in the interview said

*“Of course, we use digital device for preparing the teaching materials. The students will be more captivated if the lessons given are interesting. To make it interesting, I make it through computers and sometimes phones”.*

This notion is congruent with Puentedura (2012) who said that in substitution level, the teacher converts the conventional teaching aids with the digital teaching aids. Using computer and laptop to do the teaching preparation and assessment actually changes the previous method of conventional teachers who used to prepare everything in textbook. The generation Z teacher use digital devices to do the teaching preparation and assessment. This is one of the implementations of substitution in teaching.

In addition, the teacher’s opinion is also in line with Andrews (2003) who stated that motivation

and enrolment are identified as the major benefits of using technological tools to support literacy teaching. The main reasons why the teacher prepares the lesson using digital devices is so that it creates the fun and enjoyable experiences. This goal can be reached by designing the interactive teaching materials which promotes the activeness of students' participation.

The grand mean obtained is 72%, however, there are some observing question which is indicating the low percentages such as recording every class and giving the electronic references in the class. Those two aspects have 30% respectively.

### The Implementation of Augmentation Levels of Generation Z Teachers

The Augmentation is the second level of four integration stages proposed by Puentedura (2012). 10 Observation aspects have been distributed to see how far the integration of augmentation level in the classroom practices.

Table 2. The description of Augmentation Levels and Mean

No.	Questions	N	Mean
1	The participant highlights text in the digital devices with color and different font size	10	100%
2	The participant uses a search engine (e.g. Google) to look for the reference to the teaching material	10	100%
3	The participant uses the editorial tools in the word processor to correct grammatical errors in any documents.	10	20%
4	The participant uses the editorial tools in the word processor to receive alternative words to use in essays.	10	60%
5	The participant uses digital libraries (e.g. Digilib, Mulib) as sources of useful content for the learning.	10	100%
6	The participant modifies the folder to be more attractive and orders the folder by its name then it can be found easily.	10	100%
7	The participant uses a group chat list to contact students in matters related to their academics.	10	100%
8	The participant used bulk messaging to contact students in matters related to their academics.	10	0%
9	Subject students' work/ teaching material to a plagiarism test using plagiarism detection software.	10	20%
10	The participant provides feedback to the students' reports, papers and assignments through their social media or email.	10	60%
Grand Mean			66%

There are five observation questions which have shown 100% respectively. It means that all generation z teachers have implemented those aspects in their teaching practice. The tangible one, which is also in accordance with one of the interviewees, is question number 2. One of the teachers said

*"Sometimes, the specific materials are difficult to see in the certain reference, by using the search engine teacher can be directed to the suitable learning sources which can help for saving the time, and for the sake of efficiency of course".*

Augmentation according to Puentedura (2012) is a technology that acts as a direct tool substitute, for functional improvement. The improvement which is carried out by the teacher is initiating to find it on google search instead of going to the specific reference since the materials are rare to find in the references. By typing the exact and proper keywords, the teacher will be brought to the teaching source that they need. This action is also in accord with Hew & Brush (2007), saying that technology integration means the use of technological devices such as computers, laptops, tablets, software, and/or the internet for learning purposes.

The grand mean is 66 %. This number is lower compared to the substitution level since the augmentation stage is obviously higher than the previous one. The zero percentage is obtained in the question about using the bulk messages to give the blast message to the students. The teachers argued that they do not know the essence of the feature since they have already used LMS in communicating with students.

### The Implementation of Modification Levels of Generation Z Teachers

Modification is the third level of four integration stages proposed by Puentedura (2012). 10 Observation aspects have been distributed to see how far the integration of modification level in the classroom practices. Many experts said that this is the minimum level that teachers should integrate into their teaching and learning practices.

Table 3. The description of Modification Levels and Mean

No.	Questions	N	Mean
1	The participant ever combined audio, video, and text notes in presenting material using an application such as Moviemaker	10	100%
2	The participant includes hyperlinks to online dictionaries and other sources for the teaching material.	10	0%
3	The participant administers multiple-choice questions for test examinations through Google Forms or other devices.	10	100%
4	The participant uses Google drive to manage and collect files of students' work.	10	60%
5	Lecture modules in the discipline using e-learning platforms (e.g. MUELE, Edmodo).	10	100%
6	The participant uses open education resources on the internet to use group discussion facilities (e.g. Blog, social media, web).	10	0%
7	The participant uses online tools (e.g. RM assessor) to assess students' achievements/score	10	0%
8	The participant uses note-taking applications such as Sling note, and Google note program to curate online sources or to do the automatic typing.	10	40%
9	The Participant uses video conferencing or skype to teach students when the teacher is not at the school.	10	100%
	Grand Mean		55%

There are four observation questions that indicate 100 %. This perfect number is dealing with the ability to create multimodal literacy such as combing audio, video, and text in a movie editor for the students. The next one is the capability of teachers to design multi-form assessments using assessment

tools such as g-form, Kahoot, etc. The third one is using LMS which stands for Learning Management System and the last one is using video conference to teach. The definition of the modification itself is that technology allows for significant task redesign (Puentedura, 2012). The obvious implementation of Modification is that the school has used LMS. One of the teachers said

*“For delivering materials, checking the students’ attendance, and submitting works, we all use Google Classroom since it is the easiest and the most practical to use, and many teachers in the school where I teach have been so familiar with this.”*

What has been uttered by the teacher above is in line with the idea Floris and Renandya (2019) saying that technology can be systematically embedded in teachers’ instructional practice. Using the LMS (Learning Management System) eases and facilitates the teachers to control the whole class activity using one online system. It can be stated that all of the essential actions in the classroom including teaching and scoring can be carried out in a practical way.

Table 4. The description of Redefinition Levels and Mean

No.	Questions	N	Mean
1	The participant ever invited speakers or teachers from other countries / foreign institutions to give materials virtually	10	100%
2	The participant enables the students to interact with other learners from different places virtually	10	10%
3	The participant possess his/her online platform such as (blog, youtube channel, website, etc) to share knowledge with students from different places	10	10%
4	The participant has held an activity that enables the students to share knowledge with other students from different schools virtually	10	20%
5	The teachers collaborate with other teachers from different schools virtually to formulate the best teaching method, materials	10	80%
6	The participant uses Virtual Reality Devices to enable the students to interact with more tangible learning experiences.	10	0%
Grand Mean			36%

Redefinition is the highest stage in the technology integration theory by Puentedura. It can be seen that the grand mean is just 36%. There is only one activity that shows 100% in practice. It is the event of inviting speakers from different institutions/ places to give a talk virtually. Redefinition means that technology allows for the creation of new tasks, previously inconceivable Puentedura (2012).

Since inviting a person who is in a long-flight distance is impossible, then the teacher can still invite the wanted person using a virtual meeting. This is one of the implementation Redefinition in this case. One of the interviewees said

*“Annually we invited speakers from different institutions to give motivation so that the students are*

*encouraged to study foreign languages, especially English. Sometimes we use gmeet and sometimes we use zoom”*

The teacher’s answer above indicated one of the practical uses of technology, specifically the use of technology in providing opportunities to create well– a designed, learner-centered, affordable, interactive, officiate, flexible e-learning environment (Khan, 2005).

## **Conclusion**

The research overall shows that all stages of technology integration have been implemented by the Indonesian generation z teachers. In the substitution level, where the teacher substitutes physical materials with digital materials, the grand mean obtained is 72%. For the augmentation level, the percentage obtained is 66% followed by the modification level with 55%. The lowest level received is in the redefinition level with only 36 %. There have been many factors influencing the different levels of each stage. The limited facilities and knowledge about implementing digital tools related to education are the factors observed.

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