



## Reinforcing Teacher's Instructional Capability: Web-Designing

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### ABSTRACT

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Coronavirus has made the educational system around the world paralyzed, including in Aceh, Indonesia. The only technique left to manage the teaching-learning process now is by attempting online learning. This study aims at testing the teachers' in Nagan Raya in concern to their ability in web design. This study was carried out in quantitative approach; single group experimental design where 15 teachers involved in this study as the sample. In the pretest, they were given 10 questions to see their understanding in web design. Later, after 4 months of treatment, they were given post-test to see their progress. The data collection was clearly done through test: pretest and post-test. And the data were analyzed using Normality test and T-test in order to test the hypothesis. The result shows that there is increase in the teachers' knowledge in relation to web design knowledge. The score before the treatment was only 38.3 and it increased to 79.3 after the treatment. There is score inclination for 41.6. additionally, the t-test result is 4.041 which is still within the critical area, and conclusively, this proves that there is a significant difference to th teachers' web design knowledge before and after the treatment. The implication from the result is that it is important to host a program to train teachers on how to develop web design because during this pandemic, websites have been the main sources for learning.

### Keywords:

online learning, web design, distance learning, COVID-19 pandemic.

### INTRODUCTION

of the projects in education sector is to keep up the advancement of training in Indonesia by distance learning (otherwise called online learning) so the objectives of Indonesian schooling can be acknowledged as ordered in Law No. 2 of 1985. Specifically, the reason for Indonesian instruction is to teach the country's youth and foster people who are content to learn but unfortunate to possess respectable characters, free, outfitted with strong character, and responsible for the country so Indonesia has sufficient of valuable assets to expand the country progress. Unexpectedly, in view of information from *Badan Pusat Statistik (BPS)*, presently there are 45 million Indonesian students who do not get proper education and do not go to class as a result of Coronavirus.

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More explicitly, in Aceh alone, it was recorded that in excess of 4,000 kids could not adequately get learning materials from any online classes during the pandemic (BPS Aceh, 2020). Nagan Raya, one of the areas in Aceh, additionally adds to the quantity of learning limitations in accomplishing ideal education for 235 students enlisted as casualties of Coronavirus (BPS Nagan Raya, 2020). Accordingly, the teachers need to focus on the advancement of inventive and creative methodologies in internet learning models to expand the students' accomplishment all through the exercises. One technique for distance learning that is accepted to have the option to build student accomplishment in learning is a website design approach. This effort can be planned by the teachers as alluring as possible so that students can effectively access and interestedly study the learning materials. Although online learning is seen as a mental burdence to most teachers (Syahputri, Idami, & Ismail, 2020), Susyatna (2015) indicates that learning through website can be energetically suggested in concern to the fact that they are encouraging students' motivation in

learning; furnished with precise materials planned by educators; no time and distance requirements; enhancing students' in finding out all the information required; planned in such way that students can leave remarks which are critical for the teacher as the web designer; and effectively, and it can be rapidly and monetarily reached.

Unluckily, this advantage has not been completely perceived and executed by teachers who live in the Agrarian space of Nagan Raya district. In view of the consequences of perceptions, the English educators of secondary school and senior secondary school in the Agrarian district have extra exercises, for example, cultivating their rice fields, this leads to their prompting less spotlight on teaching-learning endeavors. Optional teachers are recorded to have a low instructor capability test score, which is just 45 (Nagan Raya MGMP Information, 2018). In light of the ability test scores, educators should be enabled to access higher goals and their fundamental abilities should be improved with the goal so that students get the information from the responsible and proficient figures who comprehend students' capability well. In brief, it can be said that distance learning with a fundamental ability is important in website designing approach for teachers in agrarian regions. And this needs to be executed quickly so it upholds the public authority in understanding the objectives of Indonesian education (Rahma, Syahputri, and Mardhiah, 2020).

This study further offers the development of a distance learning model during the pandemic through a life skills-based web design approach. Teachers were given training and socialization on how to design attractive web designs so that the material to be taught can be prepared in advance on each relater website. After going through a training period of 6 months, the final ability of these teachers were measured through a post-test and then the material that has been designed was given to students. Students can easily access the material in question just by typing the website given by the teacher without time and space limits. The next monitoring and mentoring were carried out 2 months after the program had been implemented, namely by interviewing students as targets using the web design that has been designed by the teacher as a sample.

In website application, users are offered new methods for getting to information on the websites and sharing those information and thoughts for other people. However, from that technical perspective, website applications have gotten more responsive and better in managing network inactivity (Bates, 2013). Website applications recognizes the prior occasions where the rapport between teachers and students need to be built and materials need to be manually conveyed. The website applications have transformed from a medium learning to a platform learning, which assembles information from various sources and gadgets progressively, permits people to contribute thoughts and substance, and conveys

programming as a consistently refreshed assistance (Umbach, 2006). One result of the website applications as stage is that the applications and administrations stay in a sort of interminable-idea stage and are continually refined and improved. In this way, new sorts of instructing ability for instructors have risen to proceed with the way toward the process of teaching and learning development in the future.

The novelty that is offered in this study is to, theoretically, benefit the ontology of technological expansion and merging into the teaching-learning literature and theories. Meanwhile, this study practically helps teachers in the agrarian area to gain a new skill in carrying out the teaching and learning process at this point, where the conventional classroom activities have changed and the physical classroom meeting should be minimized. The majority of classroom activity now moves into digital platforms but teachers (as well as student) are not ready. The research question which is trying to be answered is: Is there any significant difference related to score for teachers who have been trained using web-design approach to understand more about designing digital material on websites?

Since this is an experimental study, the hypothesis below is shown:

H<sub>0</sub>: there is no significant difference related to score for teachers who have been trained using web-design approach to understand more about designing digital material on websites.

H<sub>a</sub>: there is significant difference related to score for teachers who have been trained using web-design approach to understand more about designing digital material on websites.

## **LITERATURE REVIEW**

there are several theories on distant learning as elaborated in the following. Stewart, Keagen and Holmberg (in Juhari, 1990) distinguish three main theories about distance learning, namely the theory of autonomy and independent learning, industrialization of education, and interactive communication. Martinez & Clark (2001) state that, in independent leaning, it is basically influenced by the view that every individual is entitled to equal opportunities to obtain education. The learning process should be pursued by each individual so that it can provide freedom and independence to learners in the learning process. Learners are free to independently determine or choose learning material to be studied and how to study it. In conventional education, learners communicate more with humans, which are teachers and other learners whereas in distant education, students perform more intrapersonal communication in the form of information or learning materials in electronic, printed, or non-printed form. Besides, distance learning is a form of teaching and learning activity characterized by a mass division of teachers and learning materials. Distance learning is a method for teaching knowledge, skills and attitudes by applying and utilizing technology that can

produce quality learning materials so that they can be used simultaneously by learners whose places of residence are scattered everywhere. In addition, independent learning does not mean studying alone. Learners need to interact and communicate with the other parties or components of the distance learning provider such as their teachers or other learners. To achieve this goal, the learning material needs to be designed as attractive as possible so it can attract the learners' interest. The learning material must also be self-instructed that can promote individual learning. Although not completely, distance education implies the separation of teachers and learners. The independence of learners is expected to be relatively higher than the independence of the learners performed in conventional learning approach.

Just to mention, on this teaching approach, the learning material is stored on a computer with the internet connection, so that it can be accessed by teachers and learners anytime and anywhere as they need it. Although distance learning is widely implemented by utilizing information and communication technology, there are several obstacles it faces. They are including limited technological facilities, such as the absence or lack of computers compared to the number of learners who will use them, limited internet services as a means of communication, or limited electricity in a certain area. This obstacle causes a reduction in technology users, such as computers with internet connection (Alessi & Trollip, 2001). There are several steps that can be done to design learning websites.

The first step is determining the websites. By determining the right type of website, the teachers will have an idea of what kind of website concept will be built. This is important because it will affect the choice of web hosting package, domain, and theme used. So in this step, the teachers were immediately be directed to create a combined website with a personal website type and a forum website where a personal website is a type of website that prioritizes updating information. Not surprisingly, blogs generally feature the most recent information at the very top. A blog can be used by personal or business. The virtue of blogs is the ease of building engagement thanks to the comments column, while the forum website is a forum for sharing information for an online community, in this case the school community in Nagan Raya. Second, it is vital to determine the website platform. By using WordPress, the teachers can design a website more easily without having to master programming skills. All needs to be done is one click of installation: entering the name, website description, and choosing the template. By doing so, the website is ready to access with the internet connection. Later, hosting should be determined. Hosting is performed to store all website files so that they can be accessed online. All files such as themes, plugins, text, media, HTML code, and draft content are stored on hosting. In essence, all changes that are made in WordPress will be stored on the hosting. Apart from hosting, teachers also need a domain to build a website.

Domains are also vital to websites. In simple terms, domain and hosting are addresses for websites. The domain serves as a website address so that students can easily access the website. For example, when people want to visit the Niagahoster website, they only need to type [www.niagahoster.co.id](http://www.niagahoster.co.id) in the browser and the Niagahoster website appears. Domains do not always have to end in .COM. It is possible to choose one of the various domain extension options available such as .CO.ID, .WEB.ID, .NET, .INFO, .ONLINE, .SITE, .WEBSITE, to .XYZ. Last, contextualize the website contents with the pedagogical goals.

## **METHODOLOGY**

This type of research is quantitative study using one-group experimental design. This research was conducted in the agrarian area of Keude Liunteng Village, Seunagan District, Nagan Raya Regency, which is the largest rice field area in Nagan Raya. The total sample was 15 people. They were 4 junior high school English teachers, 4 MTsN English teachers, and 7 high school English teachers. These teachers have rice fields as a side livelihood, causing lesson preparation and material delivery to be less than optimal, especially during the pandemic, where economic problems become more complicated. On average, teachers spend 5 to 6 hours in the fields. Therefore, it is necessary to treat and empower human resources so that the potential that exists in teachers can be maximized. Before being given training, the teachers were given a pre-test about the insights and knowledge about distance learning during the pandemic, appropriate methods, and web design concepts as well as several questions regarding life skills improvement. The instruments in this research are test in concern to the teachers' knowledge and ability in designing a learning website. This study aims to see the effectiveness of making web design as a method of learning English during the pandemic so that students' understanding can improve. Later, the intervention was given for 6 months. Every month, there were 3 meetings (following health protocols during the pandemic period). In the last meeting, the teachers were given a post-test to measure the effect of the education and knowledge transfer that was given. During the data collection process, the teachers were given trainings on web design. The procedures are as follows:

1. Pre test,
2. Explaining about internet concepts, how to access internet, and other related information,
3. Explaining distance learning methods and examples,
4. Explaining the concept of web design,
5. Creating a website,
6. Designing a web,
7. Uploading learning materials,
8. Entering a list of questions into the web design that has been designed,
9. Practice teaching with each other using the web,

10. Provide mutual evaluation and input,  
 11. Assistance by the IT team in case of difficulties, and

12. Post test.

**RESULTS AND DISCUSSION**

In the following is the result calculation for pretest and posttest.

**Table 1. Result of the study**

No	Sample	Pretest	Post-test	Score increase
1	S1	40	75	35
2	S2	35	80	45
3	S3	30	70	40
4	S4	45	90	45
5	S5	40	75	35
6	S6	30	80	50
7	S7	35	85	50
8	S8	40	85	45
9	S9	35	75	40
10	S10	40	75	35
11	S11	40	85	45
12	S12	45	80	40
13	S13	35	80	50
14	S14	45	75	30
15	S15	40	80	40
<b>Mean</b>		<b>38.3</b>	<b>79.3</b>	<b>41.6</b>

From the score increase above, it can be seen that there is development in term of knowledge expansion for teachers in relation to the importance of effective website design in teaching and learning process during the COVID-19 pandemic. The highest increase is for sample 6 (S6), sample 7 (S7), and sample 11 (S11). They had 50 points increase. Then, other samples followed from 45 points increase, 40 points increase, 35 points increase, and 30 points increase. The point of 30 is the least increase. These scores were later calculated.

The function of t-test is to perform the hypothesis testing: which is to prove whether  $H_a$  is accepted or rejected. This is carried out to draw conclusions on the application of web design in distant learning for teacher in agrarian areas. The hypothesis can be claimed accepted if the t-value lies in the critical area. Meanwile, if the t-value is outside the critical

area, the  $H_a$  is rejected. Before determining the critical area, the  $df$  should be determined. The  $df$  of this study is calculated using the following formula:

$$df = N - 2$$

$$= 15 - 2$$

$$= 13$$

Hence, the critical are for  $df=13$ ,  $\alpha=0.05$ , one-tailed test is 2.16. this means that the t-count value should be  $t\text{-count} \geq 2.16$ . besides, to be continued to the t-test, the data distribution of a dataset should be normal. Hence, the normal distribution of the dataset in this study was calculated using Kolmogorov-Smirnov test ( $\alpha \geq 0.5$ ). The result is as shown below.

**Table 2. Tests of Normality**

		pretest
Kolmogorov-Smirnov <sup>a</sup>	Statistic	.241
	df	30
	Sig.	.000
Shapiro-Wilk	Statistic	.827
	df	30
	Sig.	.000

a. Lilliefors Significance Correction

The table above shows that the  $\alpha$  value of the data distribution is 0.241 which is higher than 0.5. This means that the data distribution is normal and the statistical

operation to the hypothesis testing (t-test) can be progressed. Consequently, the hypothesis is as shown in the table below.

Table 3. Independent Samples Test

		Pretest-posttest		
		Equal variances assumed	Equal variances not assumed	
Levene's Test for Equality of Variances	F	.016	-	
	Sig.	.900	-	
t-test for Equality of Means	t	4.041	4.041	
	df	28	27.810	
	Sig. (2-tailed)	.000	.000	
	Mean Difference	41.000000	41.000000	
	Std. Error Difference	1.860193	1.860193	
	95% Confidence Interval of the Difference	Lower	-44.810432	-44.811603
		Upper	37.189568	37.188397

From the table above, it can be seen that the t-count value for pretest and post-test is 4.041 which is higher than 2.16. This means that the  $H_a$  is accepted and  $H_0$  is rejected. Practically, this means that there is an improvement for teachers after they were trained on how to perform website design in relation to distant learning during COVID-19 pandemic. The table above reported that in the hypothesis testing, the mean scores between pretest have been compared to post-test mean score. The mean score of pretest, which is 38.3, is much lower compared to the mean score of the post-test (which is 79.3). The T-Test functions to prove whether the alternate hypothesis is accepted or

rejected. Concerning the  $t_{value}$  for  $df=13$  which is 4.01, it certainly lies in the critical value for one-tailed test. The critical area for one-tailed test with  $df=13$  should be above 2.16 for level of significant  $\alpha= 0.05$ . It can be concluded that the alternate hypothesis ( $H_a$ ) is accepted and the null hypothesis ( $H_0$ ) is rejected.

In addition, below are shown several results from the teachers’ outcome in designing the website. The website url address is <https://www.cakrawalaguru.com/>. First, the teachers are able to design the website welcoming platform. The details are as shown in the following.



Figure 1. The website headline

In the figure above, it can be seen that the teachers have succeeded in creating an educative jargon which is *Cakrawala Guru* ‘horizon for teachers’. The image they

chose also supports the contextual needs of the websites which are the images of books.

Then, the teachers are able to create menu as it can be seen in the following figure.



Figure 2. The website menu for materials

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The figure above shows the menu of materials. The materials are about Asking and Giving information, Telling time, and Greetings. The materials were uploaded in .pdf format. Materials are the main contents of online teaching and learning as supported by Alenezi (2020). She found that

the greater provision of materials on the e-learning system, the more engaged the students become and the more effective the teaching and learning process is.

Later, the teachers are now able to insert images into the website.

### Senior High School

The primary goal of Cakrawala Guru is student success. To be successful and safe in school, students must meet the minimum requirements for English language proficiency (high intermediate at minimum, with advanced level preferred).

- Asking And Giving Opinions
- Expression Of Compliment
- Asking And Giving Personal Information In English

Call Now



Figure 3. The website image

From the figure above, we can see that the image was inserted in a correct position. The image depicts senior high school students which is in accordance with the menu on the left. Images in educational websites are vital as they show the visual representations to actual learning atmosphere. As supported by Lenzner, Schnotz, & Muller (2013) that books are the general symbol used for educational contexts. They

add that pictures can enhance affectional sides of learning, hence the cognitive side is being strengthened. Rayn (2016) further supports that visuals can increase learners' analytical thinking skills.

Finally, the teachers are able to insert the relevant videos to English lessons, as shown below.



### Welcome To Cakrawala Guru

Cakrawala Guru is a safe and friendly community who welcomes you with open arms.

Know More

Figure 4. The website video URL redirectory

The figure above shows that the teachers now can insert or redirect the website to any relevant videos from another platform, namely Youtube. This is an important skill that they have achieved. As Rayn (2016) supports, videos in learning are considered significant because videos generally give contextual and clear explanation. Besides, videos are also good platforms to teach language skills such as speaking. Since speaking is learned by involving facial expressions and sound tones.

### CONCLUSION

Based on the research findings of teaching reading using web design approach to teachers in the agric area, the

conclusions that can be drawn are as in the following. In finding out the teachers' knowledge before and after the treatment, there is a significant difference in their score between before and after the intervention. There was a mean score raise which is from 38.3 to 79.3 with the t-value obtained is 4.041 for the hypothesis testing; it shows that the value is higher than the t table which is 2.16. The limitation of this study is that it only scrutinized limited samples in the regency of Nagan Raya teachers. For future research, it is suggested that larger sampling can be provided.

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