Proceedings of the 1st International Conference on Maritime Education

3-5 November 2021, Tanjungpinang, Riau Islands, Indonesia

ICOME 2021

General Chairs
Gatot Subroto, Raja Ali Haji Maritime University, Indonesia

Technical Programme Chair
Dios Sarkity, Raja Ali Haji Maritime University, Indonesia
Preface

The Faculty of Teacher Training and Education Universitas Maritim Raja Ali Haji (UMRAH), Indonesia, organized the 1st International Conference on Maritime Education on 3-5 November 2021 in Tanjungpinang, Riau Islands, Indonesia. The number of participants who joined the zoom room was recorded at 296 participants and 30 participants attended the conference directly at the Aston Hotel, Tanjungpinang, Indonesia. The 27 full papers presented were carefully reviewed and selected from 41 submissions. The papers reflect the conference sessions as follows: teaching methods and approaches, testing and evaluation, educational management and policy, designing syllabus and production of teaching materials, teacher training and professional development, digital literacy and technology usage for education, challenges and barriers in coastal education, character education in maritime context, curriculum development for maritime context, international, cross-national and domestic forces in the shaping of educational ideologies, educational systems, and patterns of teaching and learning.

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(General Chair of ICOME 2021)
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The Effectiveness of Online Learning in Higher Education: A Survey of Undergraduate Students in Riau Archipelagos, Indonesia

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Abstract. Online learning became popular during the covid-19 pandemic and is essential in maintaining learning activities in higher education. This study aimed to analyze the students' perspectives on online learning effectiveness. The analysis involved identifying the online media used for classes, learning quality and satisfaction, and the students' learning preferences. The data were collected using a semi-structured questionnaire in an online survey from 125 students from five universities in Riau Archipelagos. The result showed that online classes should be limited to 1-2 hours to avoid monotonous learning. Furthermore, fewer student-teacher interactions affected learning success, hence blended learning was preferred.

Keywords: Effective Learning, Online Learning, Higher Education

1 Introduction

The Indonesian Ministry of Education and Culture ensured continuous learning activities amid the pandemic by implementing online learning. It is a virtual space that facilitates learning using supporting tools. The basic requirements of the online learning system include electronic devices like laptops and smartphones, Internet connections, and educational platforms. The online system's effectiveness also depends on the teachers' and students' willingness to adapt. Therefore, their interactions and engagement improve the learning process.

Riau Archipelago province in Indonesia faces educational challenges due to its various remote islands limiting online learning. Several universities are located in the province's two largest islands, Batam and Tanjungpinang. The students from the remote islands are forced to learn from home, following the government regulations.

Most research focused on the online learning efficacy, such as the teachers and students in Jakarta were assessed on their readiness and ability to apply online learning and was found effective [2]. In Bandung, it was found that practical subjects could not be effectively conducted online [3].
However, the online learning effectiveness in the Riau Archipelagos has not been explored. This study provided a general overview of online learning efficacy in higher education in Riau Archipelagos, Indonesia. It also analyzed e-learning from the students' perspective. Comprehensive results in the various contexts will enlighten education practitioners and policymakers to evaluate online learning as an alternative solution.

2 Method

The research questions were answered through the survey method involving 125 students from five universities in Riau Archipelagos. The snowballing technique was applied in the participant's selection by requesting colleagues and relatives to distribute the questionnaire in google form in their respective universities. The participant criteria included active undergraduate students applying to online courses. The questionnaire consisted of 4 indicators described in nine questions; preferred online media, learning quality and satisfaction, and learning preference. The questionnaire on the online learning effectiveness in the Riau Archipelagos is displayed in table 1. The data was confidential and only used for research purposes, analyzed descriptively.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Indicators</th>
<th>Items</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>The effectiveness of online learning in the Riau Archipelagos</td>
<td>Media</td>
<td>1, 2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Learning Quality</td>
<td>3, 4, 5, 6</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Learning Satisfaction</td>
<td>7, 8</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Learning Preference</td>
<td>9</td>
<td>1</td>
</tr>
</tbody>
</table>

3 Result

3.1 Media

Question 1 and 2 asked the students’ media preference. Figure 1 shows that four common platforms were selected. Google Classroom was the most preferred at 67.4%, whereas Zoom/google meet was the second choice at 65.1%. Furthermore, 60.5% preferred WhatsApp, and 31.8% used YouTube.
The students submitted their reasons for the preferred media, stating that they facilitated student-teacher interactions in the learning and teaching activities. The following selected-response supports the perspective:

“Google classroom eases the teacher’s delivery of the learning materials and assignments. The app reminds students on submission deadlines for timely assignments submission. Google meet application facilitates the learning process where the teachers explain the material effectively. Online learning demands students to study independently, and the teachers uploads further explanations on YouTube for self-study. The students can find similar references in the app to enhance their understanding.” (R1)

“In my opinion, using zoom or google meet makes student-teacher interactions better and students understands the teachers’ explanation effectively even though the learning is conducted online. WhatsApp and YouTube are additional apps where the learning material can be distributed and easily accessed by students.” (R2)

The participants were asked the ideal time for an online class, and the average response ranged from 1-2 hours. They argued that long classes caused exhaustion, boredom, lost focus, and spending a lot of internet quota. The comments are displayed as follow:

“I think the duration for effective learning conducted via zoom or google meet is an hour. More than that causes boredom, and gets worse when it lacks student’s engagement.” (R3)

“Two hours because too much exposure from the screen could cause bad effect. I think there should be a break in between learning and conducting full-day class online must be avoided.” (R4)

3.2 Quality
Learning quality also measures the online system effectiveness as asked in questions 3, 4, 5, and 6. The first question on learning quality was about the online learning disadvantages. Figure 2 shows the top five factors affecting online learning effectiveness. 74.4% stated that poor networks constrained the teaching and learning process. In contrast, 62% found spending a lot of internet quota as burdensome. 53.5% felt that online learning reduced teachers’ interaction, whereas 50.4% compared online learning to an enormous task, and 41.9% experienced boredom.

**Fig. 2. Students’ opinion on the disadvantages of online learning**

The responses were further investigated for elaborative students’ reasons. Those comments are presented as follow:

“Many students live in the various islands in Riau archipelagos provinces. This condition causes bad weather which affects the network”. (R5)

“I do not prefer online learning due to poor network. Teachers gave enormous task before the students understood the learning material.” (R6)

“Some learning apps such zoom, google meet, and YouTube requires large internet quota. Some regions in Riau Archipelagos have poor networks which affects learning. Further explanation of learning material by the teacher is required because the students cannot comprehend the learning material with the minimal interactions. Contacting the teachers sometimes is less effective as they do not respond immediately.” (R7)

Online learning advantages were also investigated. Figure 3 shows the top five advantages, with 62% stating that time flexibility enhanced online learning. 57.4% agreed that it promoted students to learn independently, whereas 40.3% found it easily accessible and 27.9% cost-effective.
Fig. 3. Students’ opinion on the advantages of online learning

The following selected-response described the students’ perceptions of those advantages.

“In my opinion, online learning is cost-effective because we are not required to be physically present in the classroom; hence saving rent money in the institutional environment. Online learning forces me to be independent as I have to perform most tasks individually.” (R8)

“If we conduct the class online, we save some costs on transportation, meals, and boarding fee. online learning allows us to save because all the assignments could be submitted in e-file depending on the teacher’s instructions.” (R9)

The students were asked about their teaching and learning process participation and whether online learning promotes active engagement through questions and responses. Figure 4 below shows that 45.7% were neutral, 26.4% agreed, and 20.2% disagreed.

Fig. 4. Online Learning activity triggers the students’ participation in class

Their reasons are shown in the students’ responses below:
“I don't think online learning builds curiosity to ask questions because all instructions are always available.” (R10)
“Due to fewer teacher-student interaction, question and answer activities are ineffective. Students sometimes do not comprehensively understand the learning material.” (R11)
“In my opinion, I have not experienced that. Several challenges experienced by students hinders teachers from reaching them through the online class. Some do not want to ask questions, experience boredom, uninteresting lessons, or enough understanding.” (R12)

The last question was the student's acceptance of learning material delivered by teachers through online learning. The figure below shows the results below at 38% as good, 36.4 % as fair, and 17.1% with poor acceptance.

![Fig.5. The acceptance of learning material delivered by the teachers through online learning](image)

The students’ supporting responses are shown below.

“There are various ways for teachers to deliver the learning material, through videos, PowerPoint presentation, and video conference” (R13)
“The teaching and learning activities are usually interrupted by poor signal, affecting the acceptance of learning material.” (R14)
“Long duration of the virtual meeting is boring and limits our willingness to participate.” (R15)

3.3 Satisfaction

The students were asked about their satisfaction with their learning outcomes and their institution's online learning facilitation. This was asked in questions 7 and 8, with question 7 investigating students’ progress. Figure 6 below shows that 48.8% were neutral, and 33.3% agreed. These selected responses below present the perspectives:

“neutral. I could easily find the learning material that I did not understand on the internet.” (R16)
“neutral. On one hand I like the flexibility of online learning but on the other, I hardly understand the material because of poor signal”. (R17)
Fig. 6. Satisfying students’ achievement during the online learning

Question 8 asked the students’ opinions on the overall teaching and learning process by the institution. This question shows the correlation between students’ achievement and the institution’s online learning services. Figure 7 shows that 41.1% were moderately satisfied, 27.1% were very satisfied, and 22.5% were slightly satisfied.

Fig. 7. Online Learning Services performed by the institution

The students’ response below supports the finding:

“The institution facilitates alternatives to complete the administration requirements. Some requirements are performed offline, but the institution allows other students to represent those living out of the island”. (R18)

“The institution does not provide free zoom meeting access; hence we have limited time for the asynchronous class online.” (R19)

“Some of the students have not received mobile data promised by the education ministry; hence some of us are not satisfied.” (R20)

3.4 Learning Preference

Students’ learning preference measures the effectiveness of online learning based on their experience in various learning environments. Therefore, their learning preference determines the
effective methods. Figure 8 below shows that 41.1% preferred blended learning, 36.4% offline learning, and 22.5% online learning.

![Chart showing learning preferences](chart.png)

**Fig.8.** Students’ Preference on Learning

The students’ reasons were further investigated to provide deeper perspectives. The responses are presented as follows:

“Blended learning is more effective than other methods due to subjects that require offline classes. Subjects convenient for online learning can stay” (R21)

“I think blended learning is more effective and can be applied to reduce the crowd, some of us can sometimes meet for material discussions.” (R22)

### 4 Discussion

The findings described online learning effectiveness in Riau Archipelagos. Following previous studies, most students selected Google Classroom, Zoom/Google Meet, WhatsApp, and YouTube as their preferred media [4]. The applications facilitate online learning, as shown by the students’ response that they virtually communicate with fellow students and teachers through asking questions, performing assignments, and learning independently. However, the students argued that virtual meetings should be limited to 1-2 hours for effective learning. This follows the finding in 2021, that long virtual meetings drains energy which affects participants’ engagement [5]. The lack of student involvement caused by fatigue from virtual meetings reduces learning outcomes and online learning effectiveness.

The learning quality is affected by students’ lack of internet connectivity and inadequate learning environment, and alternative solutions are required. Teachers and students require great internet access to prevent online classes interruptions [6]. Therefore, third parties like the government should facilitate basic requirements for effective online learning. The students also experienced online learning advantages such as time flexibility despite poor internet connections.

The results showed that the students were neutral on whether the online system promotes an active learning process and the teachers’ acceptance of the learning material. Therefore, online learning does not influence students' class engagements or learning material acceptance. Students
revealed that this was because the learning environment by the teachers did not facilitate engagement. This can be solved by increased engagements by the teacher as the class protocol. Positive student - teacher interactions build students’ intimacy and trust, increase their learning process contributions, and support their cognitive and learning outcomes [7].

Based on the analysis, the students were also neutral regarding online learning satisfaction. A previous study in 2017 found that students learning satisfaction positively affects the e-learning systems [8]. Learning satisfaction is measured through student productivity and timely completion of tasks. However, their neutral position showed that online learning is ineffective in their learning progress. Furthermore, this is contributed by the institution's online learning services. The students were moderately satisfied with the institution's learning facilities despite providing easy administration access. They were not provided with free zoom meeting access, and some did not receive mobile data to support their learning. Therefore, this challenge affected their achievement because student satisfaction significantly affects academic success. Students that are less satisfied with the institution have negative learning outcomes [9].

Consequently, students preferred and viewed the blended learning method as the right choice amid the pandemic. A similar finding reported in 2020 also revealed that the advantages of blended learning were flexibility, increased motivation, and interaction, and improved ICT skills [10]. Poor internet connection and incomprehensible materials that hindered the learning process can be solved through blending online and offline systems.

5 Conclusion

This study explored online learning effectiveness in higher education. Students found online learning ineffective showed through the learning quality and satisfaction. Furthermore, the students admitted that online classes caused fatigue. Despite the poor network and many quotas, the students managed their time and learned independently. They also benefited from minimized costs compared to offline classes. Fewer teacher interactions and engagements increased their dissatisfaction, hence, they preferred blended learning as an alternative.

Online learning has become popular amid the pandemic, however, education practitioners should effectively optimize the system. The main online learning challenge is to promote more active student-teacher interactions. The government should also facilitate internet network availability as the basic online learning requirement.

References


Does Mind Mapping Technique Affect Creative Thinking Skill and Cognitive Learning Outcomes?

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Abstract. Education in Indonesia is gradually shifting from being oriented towards cognitive learning outcomes to 21st-century skills. Therefore, this study investigated the ability of the mind mapping techniques to affect students’ creativity and cognitive learning outcomes. This pre-experimental study employed an intact-group comparison design with data collected from 68 eighth-grade students of SMP Negeri 5 Tanjungpinang. The students were selected for experimental and control groups based on the homogeneity and normality tests results. The instrument used to measure their creativity, and cognitive learning outcomes were easy and in multiple-choice tests. The result showed that the mind mapping technique has no effect on creativity but affects cognitive learning outcomes. Meanwhile, its simultaneous implementation affects both learning outcomes.

Keywords: Cognitive Learning Outcomes; Creativity; Human Respiratory System Subjects; Mind Mapping.

1 Introduction

Although creative thinking has long been a concern for teachers, it starts to be prioritized by students in this 21st century [1]. According to Ramadhan, the teacher is one of the main factors that support the growth and development of students' knowledge and skills. Therefore, they do not just carry out learning as part of their routine work, rather they act as role models [2]. Young peoples' creative abilities are most likely to be developed in an atmosphere where the teachers are properly engaged [3]. Creativity is characterized by the ability to perceive the world from a different perspective, make connections between seemingly unrelated phenomena, and generate solutions [4]. Creativity skills enable students to develop, implement, and convey new ideas to others while being open and responsive to new and different perspectives. Both students and teachers need to apply this skill in their learning process, especially with the complex challenges associated with the 21st century.

Although educators claim to value creativity, they do not always prioritize its usage while teaching in the classroom [5]. Some researchers used the term ‘creativity gap’ to describe the inconsistency between its perceived value and committed usage. Several educators do not prioritize the creativity possessed by their students, despite agreeing to the need for them to be creative in a classroom or environment learning. This skill is limited to certain contexts, such as painting on Learning Arts and Culture, which is unfortunate because creativity does not only cover art. When the creativity of students is low, the potential for development in the cognitive realm becomes narrow, thereby decreasing the learning outcomes. Therefore, it can be concluded that creativity is needed for students to easily understand difficult lessons with
adequate information capable of broadening their knowledge. Teachers as decision-makers need to be able to choose and determine appropriate strategies, models, methods, and learning techniques in delivering material to ensure students achieve the right learning outcomes.

One of the learning techniques that can be applied to understand better the use of mapping techniques is creativity. According to [6], this process is effective and requires a lot of writing or note-taking activities [6]. In mind mapping, the theme is written in the central part to ensure other related ideas are emitted. Hence, it is easy for someone who applies mind mapping to focus on the main ideas to understand better the information collected. Mind mapping is a tool used to make even the most boring task fun and interesting, thereby improving concentration and recall while promoting the flow of thoughts more smoothly. Furthermore, it increases creativity and enhances one's ability to remember [7]. Mind mapping learning technique is applied to improve students' memory, creativity, and ability to understand a concept.

During the initial observation process at SMP Negeri 5 Tanjungpinang, the result represented that the students' creativity was quite good. However, this was not fully visualized in the science learning process, as indicated when students were asked to mention examples of monocot and dicot plants during a quiz on Plant Structure and Tissue material. Some were only able to give general examples such as those in books even though many types of plants in their school environment can be mentioned. The low variety of answers signifies a decrease in the creativity and fluency section. When the group was tasked with making a wall magazine (mading) on Simple Aircraft material, some only displayed pictures of simple planes and their formulas, leaving a space filled with unrelated decorations. This is quite unfortunate, considering that they can insert the meaning and function of each simple machine in the unused part. The low quality of the variety of answers provided by students in the making process illustrates their low creativity in the flexibility section.

The interview results with 3 of the 4 science subject teachers at SMP Negeri 5 Tanjungpinang, show that (1) The common difficulties encountered by teachers in class are when students become passive fail to focus on the learning process. (2) The three teachers interviewed had no knowledge of mapping, (3) The method that is often used in learning is the discussion and assignment with learning techniques in the form of memorization. (4) Students' learning outcomes are lacking in the material that contains physics and quite good in those containing biology. (5) Student creativity is sufficient, but only a few are active and have not seen it thoroughly in science subjects. Finally, (6) the learning outcomes of superior and regular class students have completeness of almost 75% and 62-70%, with a minimum completeness criterion value (KKM) of 73 in junior high school.

This research is based on several relevant sources, including preliminary studies conducted by [8], [9], [10], [11], and [12], which show a positive influence from the use of mind mapping. This research aims to determine the effect of applying mind mapping techniques on the creativity, cognition, and outcomes of class VIII students on the respiratory system material at SMP Negeri 5 Tanjungpinang in the 2020/2021 academic year.

2 Method

This is a pre-experimental study with an intact-group comparison design used to investigate the mind mapping techniques affecting students’ creative thinking skills and cognitive learning outcomes. The sample population is the 220 students from 6 classes in the eighth grade at SMPN 5 Tanjungpinang. From the sample, data were collected from 68 students equally assigned to
the experimental and control groups. The classes selection was based on the result of the equality test containing multiple choice questions on the materials studied by the students. The experimental (X) and control (C) groups were taught mind mapping and summarizing techniques. The research design carried out in this study, which was conducted from August to November 2020, is shown in Figure 1.

![Figure 1: Research design](image)

The independent variable of this study is the students’ creative thinking skills measured using seven essay questions. The instrument was developed by first making a grid that refers to the indicators fluency, flexibility, originality, and elaboration [13]. The creative thinking assessment was performed using a rubric. Furthermore, test instruments were used to obtain data on students’ cognitive learning outcomes through the provision of posttests with 20 multiple-choice questions. The questionnaire instrument was used to obtain student response data from the experimental class regarding the application of mind mapping techniques.

Data collected were grouped into creativity and cognitive learning outcomes and further processed using Ms. Excel 2010 and SPSS 24.0. Furthermore, the data collected were analyzed using comparative and multivariate analysis to determine whether or not there is a significant difference in the sample mean of the two variables. The comparative and multivariate analysis performed Normality, Homogeneity, Hypothesis and F-MANOVA Tests using Kolmogorov Smirnov, Lavene, Independent Sample T-Tests, and multivariate analysis.

## 2 Result and Discussion

### 2.1 Result

#### 2.1.1 Students’ Creativity thinking skills

According to Guilford [14], creativity in this research covers aspects of fluency, flexibility, originality dan elaboration. The results is represented in Table 1.
Table 1: Recapitulation of the results of the creativity assessment in the two groups

<table>
<thead>
<tr>
<th>Creativity aspect</th>
<th>Experiment group (X) mind mapping technique</th>
<th>Control group (C) summarizing technique</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tes ke-1</td>
<td>Tes ke-2</td>
</tr>
<tr>
<td>Fluency</td>
<td>54.3 (Good)</td>
<td>55.3 (Good)</td>
</tr>
<tr>
<td>Flexibility</td>
<td>54 (Good)</td>
<td>56 (Good)</td>
</tr>
<tr>
<td>Originality</td>
<td>53 (Good)</td>
<td>56 (Good)</td>
</tr>
<tr>
<td>Elaboration</td>
<td>49 (Good)</td>
<td>47.5 (Good)</td>
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<tr>
<td>Average (%)</td>
<td><strong>48.25</strong> (Good)</td>
<td><strong>44.5</strong> (Good)</td>
</tr>
<tr>
<td>Average creativity score</td>
<td>79.5151</td>
<td>76.441</td>
</tr>
</tbody>
</table>

Table 1 shows that students' creativity in each group is good, with average creativity greater in the experimental group by 48.25% compared to the control (44.5%).

2.1.2. Cognitive Learning Outcomes

Learning is carried out online through Google Classroom using mind mapping and note-taking techniques in the experimental and control groups. The next step is to give a post-test to determine students' cognitive abilities from the two groups. The questions given are compiled based on the cognitive aspects of Revised Bloom's Taxonomy and validated by expert lecturers. The minimum completeness criteria value (KKM) of students in science lessons at SMP Negeri 5 Tanjungpinang is 73. Meanwhile, their classical mastery diagram and the average learning outcomes in both groups are shown in Table 2.

Table 2: Comparison of cognitive learning outcomes data in the two groups

<table>
<thead>
<tr>
<th>Group</th>
<th>The result of cognitive aspect (%)</th>
<th>The learning outcomes</th>
<th>Classical completeness (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C3</td>
<td>C4</td>
<td>C5</td>
</tr>
<tr>
<td>Experiment (X)</td>
<td>91</td>
<td>97</td>
<td>94</td>
</tr>
<tr>
<td>Control (C)</td>
<td>82</td>
<td>76</td>
<td>85</td>
</tr>
</tbody>
</table>

Based on Table 2, it is known that the difference in the results of the percentage of cognitive aspects that include the abilities of C3, C4, and C5 is greater for students in the experimental group than those in the control group.

2.1.3. Students response

Questionnaires were given to 34 students in the experimental group (X) to determine their response to mind mapping techniques in the implemented learning process. The questionnaire was distributed online due to the current situation of the Covid-19 pandemic, while their response is shown in Table 3.
Table 3: Student response to the implementation of mind mapping techniques

<table>
<thead>
<tr>
<th>Aspect</th>
<th>No</th>
<th>Questionnaire statement</th>
<th>Questionnaire interpretation (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The feeling when making a</td>
<td>1</td>
<td>I feel happy and excited when assigned to create a Mind Map</td>
<td>74.2</td>
</tr>
<tr>
<td>mind mapping</td>
<td>2</td>
<td>I became confused when the teacher gave the task to make a Mind Map</td>
<td>58.8</td>
</tr>
<tr>
<td>Clarity of assignment</td>
<td>3</td>
<td>I find it difficult to make Mind Maps because I don't know what it is</td>
<td>57.3</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>I prefer only to be asked to take notes by summarizing rather than making a Mind Map</td>
<td>50.7</td>
</tr>
<tr>
<td>Easy to understand lessons</td>
<td>5</td>
<td>I find it easy to remember the subject matter if I make a Mind Map</td>
<td>73.5</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>I find it difficult to understand the concept of material when making a Mind Map</td>
<td>52.2</td>
</tr>
<tr>
<td>Cultivation of creativity</td>
<td>7</td>
<td>I am able to generate creative ideas when making Mind Maps</td>
<td>76.4</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>I feel the need to find additional information to explore ideas when creating a Mind Map</td>
<td>77.2</td>
</tr>
<tr>
<td>Overall interpretation</td>
<td></td>
<td></td>
<td>65% (Good)</td>
</tr>
</tbody>
</table>

Table 3 shows that the lowest percentage of questionnaire interpretation is found in the 4th questionnaire item at 50.7%, with the statement "I prefer being asked to take notes by summarizing rather than making a mind map." This indicates that students feel happier taking notes on how to summarize compared to making a mind map. Furthermore, the highest percentage of questionnaire interpretation is in the 8th item at 77.2%, with the statement "I feel the need to find additional information to explore ideas when making mind maps." This shows that students need to find additional information to explore their ideas in taking notes with mind mapping techniques. Overall, though the results of the total percentage of the questionnaire are 65%, it can be concluded that students respond well to the application of mind mapping techniques in their learning.

2.1.4. Mind Mapping

This data was obtained by observing the instrument used to determine the quality of students' mind mapping in the experimental group. It consists of 5 assessment aspect, namely Structure, Explanatory, Communication, Connection between the sections, and Extent of coverage. The results of the mind mapping assessment are shown in Table 4.

Table 4: Mind Mapping assessment results

<table>
<thead>
<tr>
<th>Mind mapping aspect</th>
<th>Score (%)</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure</td>
<td>63</td>
<td>Good</td>
</tr>
<tr>
<td>Explanatory</td>
<td>70.30</td>
<td>Good</td>
</tr>
<tr>
<td>Communication</td>
<td>60</td>
<td>Good</td>
</tr>
<tr>
<td>Connection between sections</td>
<td>66</td>
<td>Good</td>
</tr>
<tr>
<td>Extent of coverage</td>
<td>60</td>
<td>Good</td>
</tr>
<tr>
<td>Overall value of mind mapping</td>
<td>65</td>
<td>Good</td>
</tr>
</tbody>
</table>
2.2 Discussion

Several factors are used to describe the data obtained from the research results. First, the acquisition of the average value of creativity in each experimental and control group is 79.515 and 76.441, with a significance value of 0.270 (Sig. > 0.05) showed no difference in using the mind mapping technique. It can be concluded that students' creativity in both groups is at the same level, while those from the experimental group have more potential for good creativity. Hennessey & Amabile stated that a person's creative potential can be developed based on internal and external supporting factors in the form of openness to sources of information or ability to assess and select thoughts without being influenced by criticism or praise from others and the level of cognitive abilities and conditions of the social environment [14]. From the process, it was known that through student response questionnaires in the experimental group, those that used the mind mapping techniques felt the need to look for additional information from books or internet sources. Meanwhile, the learning process carried out by students in the control group using the summarizing technique indicated their need for relevant information to the topic of the summary and need to evaluate the sources of information and ideas generated through their thoughts to be able to put together the main ideas which are then written down properly. Kaufman and Baghetto grouped the level of creativity into 4 categories, and from the comparative results possessed by students in both groups, the fourth category, namely Mini-C Creativity, is based on experience, action, or events that occur when the individual shows flexibility, intelligence, and novelty in thinking by generating ideas [15].

After knowing their creativity level, the next step is to see how the criteria for student creativity are based on the 4P dimensions described by Rhodes [16], namely Person, Process, Product, and Press through the fulfillment of the creativity aspect proposed by [13], namely Flexibility, Fluency, Originality, dan Elaboration. Person criteria are determined by observing students' habits and thoughts in showing their interest in a problem by questioning or expressing their opinion. This shows the character is always curious and able to think critically through the things asked or the opinions conveyed. The fulfillment of the creativity aspect is in the form of the quantity of fluency to produce a variety of questions or opinions on a problem and the quality of the flexibility of questions. Process and Product criteria are identified through the Originality and Elaboration creativity in determining the authenticity of the opinions raised by students based on their critical thinking and analysis explained in detail. Then the Press criteria are analyzed from the influence of the environmental conditions of learners or students. This is in accordance with Hurlock, environmental conditions that can be in the form of the time needed to explore ideas, the opportunity to develop imagination and thinking, motivation to be creative, supportive means, and self-confidence and independence due to good interpersonal relationships [17].

The existence of a significant influence on the application of mind mapping techniques to students' cognitive learning outcomes is shown by the hypothesis testing results using the Independent Sample T-Test with a Sig value of 0.002. This indicates the Sig. <0.05, and the mean value of cognitive learning outcomes in the experimental and control groups are 87.647 and 80.441. Therefore, the comparative analysis results on hypothesis testing are accepted with a significant effect on mind mapping application to students' cognitive learning outcomes. The benefits of mind mapping proposed by DePorter, which stated that making mind mapping help students in compiling information will be more patterned and visually directed to help them record or store information, strengthen understanding, and easily recall activities [18]. This also strengthens Buzan's statement that when individuals make a mind mapping, there will be a connection between the newly received information obtained, thereby resulting in a new and
different mind mapping process. According to Supratik, each student's learning outcomes differ in accordance with their experiences, abilities, acquisition, and skills [19].

The research conducted on applying mind mapping techniques to student creativity is also in line with preliminary studies. Examples are the research conducted by Rumanti, which showed a significant difference in the cognitive learning outcomes of the experimental and control groups that applied mind maps and lectures as well as questions and answers [8]. Subsequently, the research conducted by Tantowi showed that there are differences in student learning outcomes tests between the experimental and the control classes, thereby producing an effect of the application of mind mapping techniques on students' mathematics learning outcomes [10]. Meanwhile, Zahra's research shows the influence of mind mapping learning methods on students' Fiqh outcomes [11].

The acquisition of F and significant -values of 3.575 and 0.040 (Sig. > 0.05) indicates and influences mind mapping techniques' application to creativity and student cognitive learning outcomes. The average value of the group of students that applied the mind mapping technique showed better results than those that used the summarizing technique. However, in terms of creativity, the difference was not significant, while in learning outcomes, the group in the experimental group gained new knowledge and skills regarding note-taking techniques. Cognitive learning outcomes obtained from the posttest in the experimental group showed that students' abilities in cognitive aspects of C3, C4, and C5 were in very good interpretation. This research is in line with the preliminary studies regarding the effect of using mind mapping on creativity and student cognitive learning outcomes. Examples include the research conducted by Zahra showing the influence of mind mapping learning methods on creativity and students' Fiqh learning outcomes [11]. The implementation of the mind mapping model with scattergories game can also improve creativity and learning outcomes in national education materials [20]. In economic subject, the mapping learning model can improve students' creativity and learning outcomes [21].

3 Conclusion

Based on the research conducted, the following conclusions were drawn. First, the average value of the creativity of the experimental group is better (79.515) than the control group (76.441). However, the significance value (Sig. 0.270 > 0.05) shows no difference, therefore the application of mind mapping techniques does not affect the creativity of class VIII students on the material of the human respiratory system. Second, the average value of cognitive learning outcomes of experimental group is better (87.647) than the control (80.441). Also, the significance value (Sig. 0.002 <0.05) shows a difference, therefore the application of mind mapping techniques has an effect on the results. Third, the acquisition of an F-score of 3.575 and a significance value (Sig. 0.040 < 0.05) indicates that the application of mind mapping techniques has a significant effect on creativity and cognitive learning outcomes of class VIII students on the human respiratory system material.

References
[1] Irwan, F., Zubaidah, S., Sulisetijono, & Astriani, M: Does remap-STAD have the potential to promote students' creative thinking skills?. AIP Conference Proceedings. pp. 1-7 (2021)
Abstract. Several preliminary studies have found the importance and promising effect of ethnomathematics in mathematics education. Therefore, this research aims to identify and describe the ethnomathematics in creating Malay male headgear called *tanjak*. This ethnography research collects data from local creators *tanjak* in Tanjungpinang, Riau Archipelagic Province through observation, interview, and document. The data collected were processed through reduction, presentation, and drawing conclusions. The results showed that some types of mathematical activities, such as creating rectangular and triangular shape, halving plane area, plane symmetry, measuring the length using standard and non-standard units, and generating a relationship between the length of cloth and predicted of an average person's head circumference are used to create tanjak.

Keywords: ethnomathematical research; creating *tanjak*; mathematical activities

1 Introduction

According to E.B. Tylor, culture is the totality of human activities, including knowledge, belief, art, morals, law, customs, and other habits [1], [2]. Linton conveyed that it is a configuration of learned behavior and behavioral outcomes whose elements are shared and transmitted by community members [3]. Therefore, culture can be defined as a way of life essentially shared by a group of people or a nation and passed down from one generation to another. It plays a very important role in human life with the ability to control the behavior of a group of people.

Conversely, behavior is also associated with how people think and react to their environment when faced with problems. Mathematics is one of the common tools used to determine the solution to problems. Many sources reported that it is used to illustrate the ways and techniques used to carry out daily activities developed and carried out by humans to respond to the environment. These include explaining, understanding, experiencing, and finding solutions to surrounding phenomena [4], [5], [6], [7].

According to James, mathematics is a science that discusses the shape, magnitude, arrangement, and concepts and logic related to one another [8]. Mathematics is based on real results and human thoughts related to ideas, processes, and reasoning [9], [10]. Furthermore, it is integrated, influenced, and developed in culture, covering historical, environmental, social, and geographical aspects [7]. For these reasons, mathematics and culture are closely related to each other, and this connection is known as ethnomathematics.
Ethnomathematics is the research of mathematics, which reflects cultural considerations with understanding the reasoning and mathematical systems [11]. It is a way of learning and combining ideas, ways, and techniques previously undertaken, practiced, and developed by groups or members of different cultures [6], [7]. These standpoints inform that mathematics is practiced and developed within the activities of a group of people, hence, it is rooted in the everyday life activities of humans.

On the other hand, the purpose of understanding ethnomathematics is associated with the ability to change the perspective and concept of mathematics, which is only viewed as a scientific discipline. According to preliminary studies, ethnomathematics plays an important role in mathematics education. [12] stated that it is related to the local culture of researching and teaching mathematics in society. Ethnomathematics tries to relocate mathematics to be based on different cultures by accommodating different ways, ideas, and techniques for students to become critical reasoners, democratic, and tolerant [7], [13]. Therefore, it can be the solution to teaching mathematics to get students motivated and understand in-depthly.

Furthermore, ethnomathematics is always addressed to educate those that are unaware of such mathematics-related intellectuality perceived from daily activity. In fact, on separate occasions, mathematics is described as ready-made knowledge gained while having a formal education in school and as a culture-free subject that is not related to the reality and activity of daily life [14]. Hence, it is considered a difficult and meaningless subject to learn [15]. Finally, it is important to understand the concept of ethnomathematics to educate people and provide a meaningful contextual of mathematics. Many studies have identified and described ethnomathematics as a rich cultural and natural setting in some places, especially in Indonesia.

Several preliminary research on ethnomathematics have been conducted in various places in Indonesia. [16] found mathematical concepts in the Balinese calendar system, while the geometrical patterns were discovered in making Batik in Javanese culture [17]. [18] also explored the mathematical concepts within the daily practice in Sundanese culture. A more recent research by [19] also found some mathematical concepts associated with the local activity of catching fish at the Musi river. Subsequently, [20] found that the ethnomodelling developed by people in Yogyakarta is related to Pranatamangsa system and the birth-death ceremonial.

This rapid increase in ethnomathematics research performed in several places triggers further research in other places such as Riau Archipelagic Province. Research by [15] found rich mathematical concepts in designing and creating a kite named Wau by local people of Lingga due to its length, ratio, proportion, relationship, and linear equation modelling.

The expansion of ethnomathematics is also undertaken in Tanjungpinang, a province with many cultural aspects. One of them is the famous male headgear called tanjak, which is usually used by local people in several ceremonial events. There are many shapes of tanjak, which are dependent on the wearer and the event. One of them is called Elang menyongsong angina tanjak, with a triangular-based shape on its top. Many local people show their skill in creating this kind of tanjak and sell them through the stores. The highly recognizable piece of art from this city makes it possible to be explored. Therefore, this current research tried to identify and describe the mathematical activity or concepts in creating tanjak by local people of Tanjungpinang.

2 Research Method

This research used the ethnographic method because it aligns to identify and describe ethnomathematics which includes exploration of ideas, methods, and techniques of a cultural
Ethnographic comprises seven main descriptions: language, the system of technology, economics, the organization of society, knowledge, art, and religion [23]. Based on these descriptions, this research mainly focuses on art by investigating the mathematics behind the process of creating *tanjak*. Data were collected from local manufacturers of *tanjak* in Tanjungpinang through observation, interviews, and documentation to identify the underlying ethnomathematics. The creator’s name is Mrs. Muarni.

The data obtained from the instruments were analyzed based on the ethnographic research, according to Spradley. [24] designed the data analysis into four, namely domain, taxonomic, componential and cultural theme. In each analysis, data reduction, presentation and conclusion were performed. Finally, all processes were directed to identify the ethnomathematics needed to create *tanjak* and provide ideas of how this research was conducted. Table 1 shows an overview of this recent ethnographical research.

<table>
<thead>
<tr>
<th>Guiding Questions</th>
<th>Initial Responses</th>
<th>Analysis Stage</th>
<th>Point of View</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where to start analyzing it?</td>
<td>In the activities of creating <em>tanjak</em> by the craftsman in Tanjungpinang the associated potential mathematical practices were analyzed</td>
<td>Domain</td>
<td>Culture</td>
<td>Carrying out the observation and interview with the local people of Tanjungpinang as the creators</td>
</tr>
<tr>
<td>How to look at it?</td>
<td>Looking into the aspect of creating <em>tanjak</em> by the craftsman in Tanjungpinang to determine the potential mathematical practices</td>
<td>Taxonomy</td>
<td>Alternative thinking, art as ethnography description</td>
<td>Determining the potential ideas, ways, or techniques used by craftsmen in creating <em>tanjak</em> related to mathematical practice or activities</td>
</tr>
<tr>
<td>What is it?</td>
<td>Evidence (Mathematical activities/concepts as the outcome of alternative thinking)</td>
<td>Componential</td>
<td>Mathematics and Mathematical philosophy</td>
<td>Recognizing and distinguishing potential specific characteristics in the activity of creating <em>tanjak</em> related to mathematics</td>
</tr>
<tr>
<td>What does it imply?</td>
<td>The value of culture underresearch</td>
<td>Cultural Theme</td>
<td>Anthropologist</td>
<td>Describing the ethnomathematics of creating <em>tanjak</em> by focusing on the relationship between activities and mathematical ideas or concepts.</td>
</tr>
</tbody>
</table>
3 Result and Discussion

Observation and interviews were used to determine the processes and techniques in creating tanjak. These initial processes were followed by recognizing the potential mathematical activities or concepts rooted in creating tanjak described in the following stages.

3.1 Measuring and cutting clothes

Tanjak is created using two pieces of cloth, the first is a soft material used to cover the outer layer. The second cloth is a harder material, and it is treated as the inner layer that makes tanjak look rigid. The common shape of the top part is in a triangular form that affects the cutting process of cloth by the craftsman.

The choice of a square shape for soft cloth is because it is easy and convenient for symmetrical folding. In obtaining this shape, firstly, the length of the sides of the cloth to be cut is measured. The common dimension chosen for the outer layer cloth is 75 cm x 75 cm, which is a standard unit. However, the choice of the length will later be discussed in the last step of creating tanjak. The outer layer of cloth is shown in Figure 1.

![Fig 1: Outer layer of tanjak](image)

As previously stated, soft cloth is used to cover the tanjak, while a harder one is applied to the inner layer. Its function is to give the tanjak a sturdy and upright look, hence the inner cloth should be cut in a triangular shape. According to the craftsman, the inner layer needs to be half of the size of the outer layer, which is in a square shape. Furthermore, the creator needs to cut the inner layer by halving the size of the outer part into an isosceles right-angled triangle. Later, the harder layer is covered by folding the soft square-shaped cloth on the diagonal symmetry. Figure 2 shows the process cut the cloth into an isosceles and right-angled triangle.
**Fig 2:** Harder cloth for inner layer cut in an isosceles right-angled triangle from which later be the fill

### 3.2 Folding cloth to create the final shape of *tanjak*

Folding the cloth starts from the hypotenuse side of the isosceles right-angled triangle by creating a belting component of *tanjak*. During the folding process, the width of every fold is measured using three fingers simultaneously brought near, which is a non-standard unit, as shown in figure 3. To make the top part proportional to the overall body, it is folded five times to obtain the final process, as shown in figure 3.

**Fig 3:** Folding the cloth

The process shows that the total length of all folds occupies almost one-third of the hypotenuse, which is equivalent to the average length of an adult's three fingers of approximately 6-7 cm. The decision to use three fingers together in five-time folds makes sense since two-thirds of the unfolded area is the top part.

Moreover, the process entails that the choice leads to the way of thinking around the
maximum number of the fold, which is relative to the length of the triangle's hypotenuse, as shown in figure 4.

![Diagram of Folded Triangle]

**Fig 4:** The before-after look of *tanjak* in the folding process

After achieving the shape, the craftsman irons all body to make the cloth sturdy. The next step is creating the function of the belt from the folded section of the *tanjak*.

### 3.3 Creating the head belt of *tanjak*

The final look of *tanjak* as the result of the previous step produces an easy belt-like function, hence length is adjustable to fit the circumference of user head, as shown in figure 5.
To create the belt, the folded part is rolled and tied both tips, using an average circumference length of 55 cm, thereby creating a knot. Furthermore, a side length of 75 cm will result in $75\sqrt{2}$ cm of the hypotenuse, making the belt adjustable. Hence this way of thinking actually reveals the idea of connecting each length of the element. The length of the soft side cloth is based on the idea of the length of the circumference of the average head of a person.

Table 2 provides an overview of the ethnomathematical research in creating tanjak.

<table>
<thead>
<tr>
<th>Activities</th>
<th>Mathematical ideas, ways, techniques</th>
<th>Emerging mathematical concepts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring and cutting clothes</td>
<td>- Constructing two friendly dimensional object: square and isosceles right-angled triangle connected by measuring and cutting</td>
<td>- The relationship between plane figures (square and isosceles right-angled triangle) and their derived characteristics (sides, diagonals, hypotenuse)</td>
</tr>
<tr>
<td></td>
<td>- Measuring cloth using standard unit</td>
<td>- Length measurement using a non-standard unit</td>
</tr>
<tr>
<td></td>
<td>- Recognizing the use of square diagonal in dividing a square into two equal parts (symmetry)</td>
<td>- Diagonal symmetry</td>
</tr>
<tr>
<td></td>
<td>- Halving plane and area</td>
<td>- Area of a plane figure</td>
</tr>
<tr>
<td>Folding cloth to create final shape of tanjak</td>
<td>- Using three fingers together (Tiga jari dirapatan) as a non-standard unit to determine the width or length of the tanjak</td>
<td>- Length measurement using a non-standard unit</td>
</tr>
<tr>
<td></td>
<td>- Deciding the number of folding needed</td>
<td>- The comparison between the result of length measurement using standard and non-standard units</td>
</tr>
<tr>
<td>Creating the head belt of tanjak</td>
<td>- Generating the relationship between the length of cloth and predicting the circumference of a person’s head</td>
<td>- Length prediction, comparison, and proportion</td>
</tr>
</tbody>
</table>

The results of the research indicate that there are visible mathematical activities in creating tanjak, which include ideas, ways, and techniques. Those mathematical activities are measuring, cutting, and folding cloth to create the final shape of tanjak. These mathematical activities emerge some mathematical concepts categorized in three general topics, namely length measurement, plane figure, and comparison.

The art of creating tanjak is a rich source of ethnomathematical research. In a previous research on Malay songket weavers, some basic concepts were found, such as measurement, estimation, and transformation geometry [25]. [26] found the mathematical activities in Bali...
woven handicraft, while Risdiyanti & Prahmana (2017) discovered the geometrical patterns used in making Batik. Recently, [27] found mathematical activities in Jepara sculpture. Conversely, the most noticeable part of the research in creating tanjak is that the mathematical activities were mostly around the length measurement. This is because almost every step in creating tanjak contains the activity of measuring the length. Similar results are also shown by some ethnomathematical research by [25], [15], [27], in which measurement, especially length, becomes the most frequent aspect. The measurement is a very basic form of human activities frequently performed in daily life practices. Therefore, almost every ethnomathematical research ever conducted found that length measurement is the main research result.

This research provides information on the existence of mathematics in the practice of people's lives. It indicates that mastering mathematics more formally can be supported by everyday life phenomena, which are the starting point for its learning. Therefore, this led to the promising effect associated with ethnomathematics in mathematics education. Ethnomathematics fits well within the constructivist theory of having students build understanding and knowledge through what they have already learned and exposed to previously [28]. Several research has demonstrated that integrating ethnomathematics in mathematics teaching and learning has assisted teachers and students in contexts of ideas, ways, techniques used in real life to enhance interest, understanding, and creativity [29], [4], [5].

Moreover, the present research revealed that length measurement is a frequent emerging mathematical idea among others. It is a basic and common practice conducted by people in a community. Therefore, taking the phenomena as the potential mathematics learning context of length measurement, contained in curriculum, and well explored in teaching and learning process is a good idea. Among measurement domains, length is extremely important for students to understand basic ideas and construct bases for advanced topics, such as area and volume [30].

4 Conclusion

In conclusion, some mathematical activities, such as creating rectangular and triangular shape, halving plane area, symmetry, measuring the length using standard and non-standard units, and generating a relationship between the length of cloth and the predicted average of a person's head are used to measure, cut, fold and cut the tanjak. The results indicate that creating tanjak is an activity-rich with mathematical concepts such as length measurement, plane figure, and comparison. However, further research needs to be carried out to determine the potential upbringing of mathematics education.

References


Listening Skills in Learning Process of Indonesian Language for Foreign Speakers at the Tanjungpinang Central Immigration Detention Centre

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Abstract. This study aims to determine the understanding of Indonesian language and to provide basic learning of Indonesian language to detainees at the Tanjungpinang Centre rudimentary through the process of listening skills in order to understand its meaning and facilitate daily communication. Listening skill is one of the basic language skills to help foreign speakers, especially detainees or residents with immigrant status, to learn Indonesian through the Indonesian Language Learning Program for Foreign Speakers (BIPA). This study used case study method and immersion method. Data was collected techniques from this study were in the form of observations, interviews, and discussions between BIPA teachers and the Tanjungpinang Central Immigration Detention Centre regarding information related to the implementation of activities. The results of this study indicate that there were 21 detainees out of the 33 detainees, who show good progress in mastering Indonesian language through the comparison results of pre-test and post-test.

Keywords: BIPA, Learning, Listening.

1 Introduction

The rapid development in global world and the existence of free markeethas a significant impact with the increasing number of foreigners working and studying in Indonesia. Another important aspect that triggers the increasing number of foreigners studying in Indonesia is Indonesia is located in a strategic area and the important position of Indonesia according to other countries because of its role related to politics, economy, culture and tourism. This is proved by data released by the Ministry of Foreign Affairs in 2012 that Indonesia had the fifth most native speakers in the world, as many as 4,463,950 people spread overseas. Then, data in 2009 showed that the local government of Ho Chi Minh City, Vietnam had determined that Indonesian language as the second foreign language after their local language [1]. In the 32nd ASEAN InterParliamentary Assembly (AIPA) session in 2011, the chairman of the Indonesian House of Representatives, Marzukie Alie, proposed Indonesian language to be used as a work language in subsequent AIPA sessions [2]. These facts support the government efforts to improve the function of Indonesian language into an international language which is being worked on by the Ministry of Education and Culture (Kemendikbud) in collaboration with the Language Development and Development Agency as a service provider institution.
for foreign speakers who are interested in learning Indonesian through the BIPA (Indonesian Language) learning program. The development of learning Indonesian language can also be a stepping stone for diplomacy that raises the positive image of the Indonesian nation. Currently, the BIPA program is being opened in many regions and even countries that require Indonesian language learning. Certainly, new opportunities are widely open for prospective Indonesian language teachers or Indonesian language teachers. Many people are asking how to teach Indonesian language to foreign nationals who do not understand and even illiterate Indonesian? All of the method has been arranged in such a way by the team for preparing BIPA teaching materials, similar with when we learn foreign languages.

BIPA learners are categorized into three levels, namely the beginner (novice), intermediate and advanced levels. In general, there are several aspects of skills that students need and must master in learning language. These skills consist of 4 aspects, namely (1) listening, (2) speaking, (3) reading and (4) writing. Everyone really needs language skills, even though in reality only some people can master all these skills.

According to W.J.S Poerwadarminta in the General Indonesian Dictionary, Listening is hearing (maintaining what people say), listening is an exercise in listening carefully. In the process of listening activities, of course, we find several things that can hinder the receipt of information and there are several methods and learning strategies to overcome such things. The application of Indonesian language as a second language for foreign speakers could not free from mistakes [3]. When the number of mistakes was high, then the achievement level of language learning objectives becomes low. Therefore, it is needed to take action in order to minimize mistake in language. Some factors that might trigger language errors, including the influence of mother tongue, lack of understanding on language and imperfect language teaching [4].

Tanjungpinang Immigration Detention Center is one of the agencies that has a structured function in terms of handling foreigners who violate immigration laws. There are foreign nationals and majority come from Southeast Asia including Vietnam, Myanmar, Thailand, Laos and there are also from Africa, one of which is Nigeria. In order to introduce the basics of Indonesian language through BIPA learning teaching materials that are guided by lecturers and students of the Indonesian Language and Literature Education Study Program, Raja Ali Haji Maritime University, Riau Islands, Indonesia, using observation techniques first to the location and in delivering learning materials using materials. teaching BIPA at the basic level and supported by the results of the pre-test and post-test conducted by foreign nationals to assess the level of understanding of the foreign nationals' listening skills.

This BIPA research had been carried out before. However, researchers had not found any research that evaluates the application of listening skills in basic level BIPA learning. A similar study was carried out by Ganesh Education University students, Yuniarti Rahmalia Hapsari, et al in 2017 entitled Implementation of BIPA Speaking Learning for Class IX Students at Gandhi Memorial Intercontinental School Bali [5]. A second similar study was conducted by Ganesh University Education students, Ni Pt Apita Widya Sari, et al in 2016 entitled Learning Indonesian for Foreign Speakers (BIPA) at the Love Language School, Ubud, Bali [6]. The third similar research was conducted by Malang State University student, Sheilla Arumdyahsari, et al in 2016 entitled Development of Indonesian Language Teaching Materials for Intermediate Foreign Speakers (BIPA). The three studies above have similarities with the research conducted by researchers. The similarity is both of them taught and carried out learning based on BIPA teaching materials but the difference is in the research subjects.
and case studies. Thus, this research is important for innovation in education field, especially learning Indonesian language for Foreign Speakers (BIPA).

2 Method

In the learning process of Indonesian language for foreign speakers (BIPA), quantitative research has been carried out. According [7], the approach used in this research is a quantitative approach with a type of one group pre-test post-test. This type of research only one group with a pre-test, after which it is given an explanation of the material and covered with post-test. Based on quantitative research, the data include pre-test and post-test score, observations, and discussions conducted between BIPA (Indonesian for Foreign Speakers) teachers and the Tanjungpinang Immigration Detention Center regarding information related to the implementation of activities. This study focused on acquiring Indonesian language from foreign nationals at the novice level in this learning process. Information on foreign nationals at the Tanjungpinang Central Immigration Detention Center obtained based on research, namely: (1) immigrants status, (2) originating from Southeast Asia, (3) age range 17-50 years, and (4) included in the beginner level (novice) as a BIPA learner.

In the interaction of learning Indonesian language for foreign speakers (BIPA) there are several language choices, namely (1) a single variation of the language used for the beginner level (novice), (2) code switching, and (3) code mixing. The choice of language that is determined is in linguistics subject as its scientific domain. The process of learning Indonesian for foreign speakers (BIPA) used the case study method and the immersion method. Case study method focuses intensively and detail on a case. The case study method generally produces a longitudinal picture, namely the results of collecting and analyzing case data over a period of time.

This study used an observation guide that was carried out in the BIPA learning process, namely language acquisition for foreign nationals. The immersion method was carried out by direct interaction with Indonesian people regarding the real cultural context for a more comprehensive understanding of BIPA learners. In learning by using the immersion method, students experience directly what is the object of their learning. Through the direct experience, the learner becomes more and more aware towards the learning subjects. This method occurs by applying communication in conversation.

There are advantages and disadvantages in this immersion learning method. The advantage of this immersion method is learner could be more comprehensive in studying because students directly experienced something that related to the topic in real situations. While, the lack of this immersion method is related to the allocation of learning time which requires a longer time to understand the learning topic. The application of this method in language learning can support an effective learning process. Besides the linguistic aspect, there is also Indonesian culture aspect that can be learned in this immersion method. They have a mutually supportive relationship with the language acquisition process to foreign nationals, therefore it is suitable to apply in achieving the goals and facilitates learners in the BIPA learning process.

3 Results and Discussions
Language skill is crucial for humans in communicating, especially listening skill. This skill allows us to understand and comprehend something that we are listening to. Listening is the skill of listening carefully to other people's words. Listening skill is the first activities that humans do in the language learning process [6]. Listening skills in learning BIPA at the Tanjungpinang Central Immigration Detention Center are intended to enhance detainees use Indonesian language in communicating with immigration officers and their comrades. The detainees were taught to speak Indonesian to avoid misunderstandings between them. This is the background of this research, so that we can investigate how far the detainees understand Indonesian language properly and correctly.

After observing, we found that the detainees at the Tanjungpinang Central Immigration Detention Center in general still understand Indonesian at a basic level, so we finally decided to provide Indonesian language lessons to the detainees. We had arranged Indonesian language learning for foreign speakers at the Tanjungpinang Central Immigration Detention Center in a simple way to facilitate detainees to understand the material. The material is included in the A1 level which consists of two units, namely; greeting and introducing. Before entering and after completing the learning session, we asked the detainees to answer the pre-test and post-test with total 15 questions[8].

A1 Greeting unit
a. Greeting expression
Greeting expression consists of:
1. Hi
2. Hello
3. Good morning / Selamat pagi
4. Good afternoon / Selamat siang
5. Good evening / Selamat sore
6. Good night / Selamat malam
b. Expression for asking news
The expression of asking for news consists of:
1. How are you? Apa kabar?
2. How about you? Bagaimana dengan Anda?

c. Gratitude expression
Expressions of gratitude consist of:
1. Thank you

d. Apologies expression
An apology consists of:
1. Sorry
2. Thank you

e. Ask for leave
The expression of ask for leave consists of:
1. ask for leave
2. I have to go
3. See you later
4. Goodbye
A1 Introductory Unit

a. Read

Read the text below correctly!
1. Hi! My name is Ani. I am 17 years old. I come from Tanjungpinang. I live on Jalan Nusantara, Tanjungpinang. My hobbies are reading and writing.
2. Hi! My name is Budi. I am 18 years old. I come from Batam. I live on Jalan Pemuda, Tanjungpinang. My hobby is taking pictures.

b. Write

Fill in the questions below correctly according to your personal data!
1. Name:
2. Age:
3. Origin:
4. Residence:
5. Hobby:

Listening

Read the introductory text below, then put a true or false mark on the questions that have been provided according to the introductions that have been listened to earlier!

Hi! My name is Prita Oktavia. I am 16 years old. I come from Tanjungpinang. My hobbies are playing and reading.

Table 1. Answer Column

<table>
<thead>
<tr>
<th>Statement</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>Her name is PritaOktavia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>She comes from Tanjungpinang</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 years old</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Introduction friends

Hi, let me introduce, this is my friend!
His name…. His nickname…. His age…, years
He comes from….  
He lives in….  
His favorite….  

Table 2. The Pre-Test and Post-Test results of Detainees at the Tanjungpinang Central Immigration Detention Center

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Origin country</th>
<th>Pre Test</th>
<th>Post Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Tram Minn An</td>
<td>Vietnam</td>
<td>7/15</td>
<td>13/15</td>
</tr>
<tr>
<td></td>
<td>Name</td>
<td>Country</td>
<td>Pre-Test</td>
<td>Post-Test</td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------</td>
<td>----------</td>
<td>----------</td>
<td>-----------</td>
</tr>
<tr>
<td>3.</td>
<td>Dao Mara</td>
<td>Vietnam</td>
<td>7/15</td>
<td>9/15</td>
</tr>
<tr>
<td>4.</td>
<td>Hug Nr EongMuop</td>
<td>Vietnam</td>
<td>4/15</td>
<td>0/15</td>
</tr>
<tr>
<td>5.</td>
<td>Trian Van Utop</td>
<td>Vietnam</td>
<td>5/15</td>
<td>2/15</td>
</tr>
<tr>
<td>7.</td>
<td>Knapmna</td>
<td>Laos</td>
<td>2/15</td>
<td>7/15</td>
</tr>
<tr>
<td>8.</td>
<td>ThamVam Ham</td>
<td>Vietnam</td>
<td>1/15</td>
<td>2/15</td>
</tr>
<tr>
<td>10.</td>
<td>TranvanTbang</td>
<td>Vietnam</td>
<td>1/15</td>
<td>14/15</td>
</tr>
<tr>
<td>11.</td>
<td>Mong Duan</td>
<td>Thailand</td>
<td>5/15</td>
<td>7/15</td>
</tr>
<tr>
<td>12.</td>
<td>Nauuy Van Hilu</td>
<td>Vietnam</td>
<td>1/15</td>
<td>2/15</td>
</tr>
<tr>
<td>13.</td>
<td>Trvin Van Bi</td>
<td>Vietnam</td>
<td>1/15</td>
<td>2/15</td>
</tr>
<tr>
<td>14.</td>
<td>Tran Van Luoc</td>
<td>Vietnam</td>
<td>2/15</td>
<td>10/15</td>
</tr>
<tr>
<td>17.</td>
<td>Tian Van Hoai</td>
<td>Vietnam</td>
<td>6/15</td>
<td>10/15</td>
</tr>
<tr>
<td>18.</td>
<td>Le Van TuongEm</td>
<td>Vietnam</td>
<td>5/15</td>
<td>9/15</td>
</tr>
<tr>
<td>19.</td>
<td>HaynhNiuongEm</td>
<td>Vietnam</td>
<td>13/15</td>
<td>13/15</td>
</tr>
<tr>
<td>20.</td>
<td>Train Van Hien</td>
<td>Vietnam</td>
<td>6/15</td>
<td>13/15</td>
</tr>
<tr>
<td>21.</td>
<td>Soe The At</td>
<td>Laos</td>
<td>2/15</td>
<td>4/15</td>
</tr>
<tr>
<td>22.</td>
<td>Nyinnyinyinag</td>
<td>Laos</td>
<td>2/15</td>
<td>5/15</td>
</tr>
<tr>
<td>23.</td>
<td>NaingSoe</td>
<td>Laos</td>
<td>9/15</td>
<td>11/15</td>
</tr>
<tr>
<td>25.</td>
<td>Sam Tam Pho</td>
<td>Laos</td>
<td>0/15</td>
<td>0/15</td>
</tr>
<tr>
<td>27.</td>
<td>Ye Thi</td>
<td>Myanmar</td>
<td>6/15</td>
<td>5/15</td>
</tr>
<tr>
<td>29.</td>
<td>Tan Shio</td>
<td>Myanmar</td>
<td>1/15</td>
<td>6/15</td>
</tr>
<tr>
<td>30.</td>
<td>Munfawti</td>
<td>Thailand</td>
<td>9/15</td>
<td>9/15</td>
</tr>
<tr>
<td>32.</td>
<td>Dan Tron</td>
<td>Vietnam</td>
<td>3/15</td>
<td>10/15</td>
</tr>
<tr>
<td>33.</td>
<td>TuamDinhPeudns</td>
<td>Vietnam</td>
<td>3/15</td>
<td>10/15</td>
</tr>
</tbody>
</table>

The table above shows that the comparison of pre-test and post-test results from 21 detainees showed good progress in mastering Indonesian. One of the detainees who showed remarkable progress in mastering the Indonesian language that had been taught was on behalf of Tranyan Tbang who came from Vietnam with a comparison between the results of the pre test and post test of 12 points and the detainee who experienced a setback in understanding the Indonesian language being taught was Hug Nr Eong Muop with a comparison between the results of the pre test and post test of +4 points. This shows that the teaching materials that have been made by researchers have been successfully applied in learning Indonesian language for foreign speakers or detainees at the Tanjungpinang Immigration Detention Center.
4 Conclusions

BIPA learners are categorized into three levels, namely the beginner (novice), intermediate (intermediate) and advanced (advanced) levels. In general, in learning a language, there are several aspects of skills that students need and must master. These skills consist of 4 aspects, namely (1) listening, (2) speaking (3) reading and (4) writing. Listening skills aspects are basic things to understand a language. Based on this, the researchers tried to investigate the relationship between the role of listening skills in the Indonesian language learning process for Basic Level Foreign Speakers (BIPA). The results of this study, indicate that as many as 21 detainees comparing the results of the pre-test and post-test showed good progress in mastering Indonesian. One of the detainees who showed remarkable progress in mastering the Indonesian language that had been taught was on behalf of Tranyan Thang who came from Vietnam with a comparison between the results of the pre test and post test of 12 points and the detainee who experienced a setback in understanding the Indonesian language being taught was Hug Nr Eong Muop with a comparison between the results of the pre test and post test of -4 points. This shows that the teaching materials that have been made by researchers have been successfully applied in learning Indonesin for detainees at the Tanjungpinang Immigration Detention Center.

5 References

https://www.dpr.go.id/berita/detail/id/3095/t/Ketua+DPR+Tetap+Perjuangkan+Bahasa+Indonesia+jadi+Bahasa+Resmi+AIPA
Student Voice: Learning with Gadget vs Learning with Real Teacher

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Abstract. This research explored students' perceptions and experiences of online and offline lecturing in the English Language Education Study Program (ELESP) at Universitas Maritim Raja Ali Haji (UMRAH). The sample population was drawn from fourth-semester ELESP students in the 2021 academic year. Forty students from the essay writing class enrolled in the online and offline program were asked to write a paper on experiences and perceptions of online and offline lecturing. Subsequently, data was collected using open-ended questionnaires and online interviews. The results showed that students preferred offline learning to online learning because it provided incredible benefits and fewer weaknesses.

Keywords: Online learning, Perception, Offline Learning

1 Introduction

Presently, there are three modes of learning, including offline, blended, and online. Offline learning is conducted in a classroom environment using face-to-face interaction, while blended learning is a mixture of online and face-to-face methods and online learning relies on the internet. The method allows students to learn autonomously, although there is an interpersonal relationship with teachers.

The Covid-19 pandemic resulted in lock downs across the globe, including the closure of schools. Before the pandemic, teachers could use any of the three modes of teaching. However, the pandemic compelled higher education institutions to use online learning to overcome academic disturbance. The transformation of the learning mode created various challenges ranging from the infrastructure, students to educators.

Online learning is a relatively new way of studying for developing countries such as Indonesia. Previously, the educators relied mostly on offline learning and blended learning. Consequently, they hadn’t mastered how to prepare and design learning activities. Some studies [5], [6], and [7] have been conducted on how online learning effected developing countries during a pandemic. However, there is little evidence on how students perceive online learning.

Through a narrative, this research aims to explore students’ perceptions and experiences towards online and offline learning.

[1] stated that the teacher plays a critical role in learning as a facilitator, mediator and curriculum designer. Teachers help to create a conducive learning atmosphere and provide learning activities to enable students to remain active. Learners also take an active role by being fully engaged in the learning process.

According to [9], online learning involves using electronic networks from any place and is conducted in real-time. This type of learning has various advantages, including flexibility,
allowing students to allocate time and learn at their own pace. Moreover, it enables students to have online discussions and collaboration with peers and tutors. The feedback from teachers and peers deepens the understanding of the course content.

Following a lockdown, the learning process in Universitas Maritim Raja Ali Haji was shifted to online platforms to keep the academic activities moving. Previously, the lecturers and students had been using offline learning allowing the instructors to manage, observe, and evaluate the learning process directly. The change of the learning mode forced teachers to select applications to manage the e-learning, such as WhatsApp, video conference, google classroom, and more. The transition from face-to-face to virtual classes was also adopted by the English Language Education Study Program (ELESP) for all courses, especially essay writing. The lecturers handling the courses had to transit from conventional to teaching online.

The objective of this research was to investigate the students’ perceptions and experiences on online learning and to have a teacher physically in essay writing classes. The results revealed that the performance of students significantly reduced when they used online learning. Many students who attended online classes were unsuccessful in achieving the learning purposes in the English subject compared to offline studying before the pandemic. The results suggested that there is a need to improve the quality of learning and teaching.

2 Research Method

The research used a narrative inquiry to uncover the students’ perceptions and experiences towards the learning activities applied in ELESP. According to [2], narrative research involves an in-depth description of the ideas and experiences of the participant. The participants were 40 students studying essay writing, who had been studying offline for one year before the Covid-19 pandemic, and online learning after lockdown. The students were asked to write a report about their perceptions and preferences regarding online and offline learning. Online interviews were conducted to confirm their stories, and the data derived revealed the need to improve the quality of learning and teaching activities.

3 Results

The main instrument of this research was an open-ended questionnaire. The students were asked to write two texts: their experiences in teaching before the pandemic (offline learning) and their experiences after the pandemic (online learning). Online interviews were also conducted to confirm the participants’ perspectives and experiences. The research concluded that 90% of the participants preferred offline learning to online learning, while the rest felt that offline learning was as effective as online learning. According to the results, the factors that affect students’ preference for online learning include educators, media, and learning activities.

First, students reported that lectures failed to adapt to online teaching due to a lack of technical skills, resulting in ineffective monitoring. Technology integration was also a big challenge since most lecturers could not operate e-learning tools, which resulted in technical issues. Subsequently, online learning had technical glitches due to poor internet connection, hence distracting the learning environment. However, in offline learning, teachers address issues quickly due to the direct interaction with students.
Second, students were required to buy expensive devices for online learning such as internet connections, mobile phones, computers, and more. With the Covid-19 pandemic, people especially students’ parents, experienced jobs and income losses, hence it is challenging for students to afford online tools.

Furthermore, students found online learning boring and unengaging since lecturers used similar online teaching tools such as WhatsApp, Video conference, and Google Classroom. Failure to change the teaching and learning style resulted in a lack of motivation. Conversely, offline learning allows lecturers to use different teaching strategies. The classroom environment also promotes collaborative learning, interaction, and motivation.

Lastly, students reported that even though online learning offered ‘independent studies’ where learners moved at their own pace to achieve their goals, they neither shared ideas nor built knowledge together. Furthermore, students reported sitting for too long, which they felt was not healthy, especially spending too much time in front of screens.

4 Discussion

The findings indicated that offline learning is certainly a more effective option for students rather than online. The narrative approach found sufficient evidence to indicate that offline learning is practical and straightforward, and it creates interactive learning where students become more engaged. According to [8], students preferred offline learning because they failed to achieve their academic goals while using online learning. Also, [3] stated that students struggled with online learning due to limited access to technology and resources.

Although [4] claimed that English language learners preferred online learning because of flexibility, the findings revealed that lecturers lacked digital literacy, and most students lacked gadgets and online connectivity. Finally, the results showed that offline learning provided students unlimited interaction with a clear voice and precise meaning. In contrast, gadgets had technical issues such as unclear sound since the signal or system in the audio application could not work properly. Therefore, future research should consider the quality of classroom interactions to achieve the learning goals.

5 Conclusion

The results revealed that students had negative perceptions about online education. This was based on the role of the educator, the selected media, and the learning activities. They argued that online educators could not manage and engage students compared to how teachers engaged students using offline learning mode. Furthermore, students experienced technical issues and a lack of understanding while using online learning media. Finally, students reported inadequate online learning activities, which resulted in a ‘learning gap.’

Exploring teachers’ perceptions and experiences toward online learning and offline learning should be an area of further research. Moreover, additional instruments for data collection will give a more comprehensive understanding of this issue. Future research can address the effectiveness of each digital platform upon specific learning skills, such as speaking and writing skills, using a qualitative or quantitative design.
References


Student’s Perceptions of Automotive Engineering Study of Yogyakarta State University on Online Learning During the Pandemic Covid-19

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Abstract. This research was conducted on students of Class C Automotive Engineering Study Program at Yogyakarta State University. The purpose of this study was to determine the perception of students of the Class C Automotive Engineering Study Program at UNY towards online lectures during the pandemic Covid-19. This study uses a descriptive analysis method, namely to examine the perceptions of students of the Class C Automotive Engineering Study Program at UNY regarding the online learning process during the pandemic Covid-19. The results of this study indicate that students of the Automotive Engineering Study Program class C at UNY feel less effective and dissatisfied with online learning with various existing problems. However, using a good learning model can deal with existing obstacles, the right and appropriate communication model and learning style will lead to the success of online learning.

Keywords: Perception; Learning model; Covid-19.

1 Introduction

Education has the meaning of conscious effort to prepare and form learners through guidance, teaching, and training activities for their role in the future. Education has an important role in helping learners achieve the knowledge and skills needed to grow and innovate to achieve targeted goals. Recognizing the importance of education, the Government formulated the National Education Goals in Law No. 2 of 1989. Learning is the main thing in education that implements it continuously. Education is a planned effort to realize learning activities and learning processes for students to develop their potential and the skills they need in the society, nation and state.

Along with the increasing number of positive Covid-19 in Indonesian. The Indonesian Ministry of Education and Culture issued Circular Letter No. 3 of 2020 concerning Prevention of Covid-19 in education units. The pandemic Covid-19 has had a huge impact on various sectors and one of them is the education sector. The crisis really came suddenly, governments in any hemisphere including Indonesian had to make a decision to close schools in order to reduce the spread of the Covid-19 virus. On March 24, 2020, The Minister of Education and Culture of The Indonesian state issued Circular Letter Number 4of 2020 regarding the learning process in the Covid-19 spread period which instructs that the learning process be carried out at home through online learning.
The Covid-19 outbreak requires distance learning that has almost never been done simultaneously for all elements of education, namely learners, teachers to parents. This online learning program has been implemented at the Indonesian education level to the university level. Following up on the advice of the Indonesian Ministry of Education and Culture’s advice regarding the implementation of learning activities during the pandemic Covid-19, the Rector of Yogyakarta State University (UNY) eliminated conventional learning activities and replaced them with a distance learning system.

Online learning is a national policy as the main step in efforts to stop the spread of the Covid-19 in Indonesian. Online learning trends have occurred around the world during Covid-19. This presents a challenge for all parties involved the fields of education. With the government’s recommendation, learning is done from home by using the internet. In the advancement of information technology in the era of 4.0 that is so fast can help facilitate in continuity when doing online lectures. Observing the effectiveness in online learning automotive engineering students in Yogyakarta State University, online learning has a different technicality from the face-to-face system learning model with online learning. Online lectures can help educators and students determine communication patterns in implementation learning.

Online learning activities in lectures conducted in real time make educators choose the right application for continuity during the learning process. In this case, some colleges use policies in the use of distinctive applications. Use universal apps like Zoom, Edmodo, Whattapp (WA), Youtube, Flickr, Twitter, Instagram, and Webblog. Generally students think that applications that are easy in their optimization and save quotas are more effective in supporting online learning. But in its implementation, it does not rule out the possibility that there can be some obstacles. The problems that arise and the carrying capacity in carrying out online treatment experienced by students make learning ineffective. Problems that occur include the lack of networking, home atmosphere and unsanmporitive environment also determine the effectiveness of online learning. The biggest difficulty faced by students is concerned with understanding the material, because the learning style in each student affects the level of understanding in the acceptance of learning materials. Mentioned that full online learning is considered not possible for face-to-face, so all needs cannot be accommodated for learning needs.

This research is devoted to students Automotive Engineering Study Program class C at Yogyakarta State University which in the learning process does not depend on the delivery made by the lecturers, but also needs to be carried out discussions and presentations of assignments by students. With the continued learning process online, some materials that should be done interactively are sometimes constrained by technical problems related to mobile networks. With these constraints, students' perception of the effectiveness of online lectures that lead to learning models with a learning media approach, communication model, and learning process in students of Automotive Engineering Study Program of Yogyakarta State University can determine success in the learning process. With this, the author examined the perception of students of automotive engineering study program class C at Yogyakarta State University to the online lecture system during the pandemic Covid-19.

2 Method

This study uses a descriptive analysis method, namely to examine the perceptions of students of the Automotive Engineering Study Program at Yogyakarta State University
regarding the online learning during the pandemic Covid-19 that was implemented by the Yogyakarta State University. The online learning model can be identified through several approaches, such as online learning application, communication models during learning, and the effectiveness of online learning. Data obtained from observations in the form of giving an online questionnaire. The samples involved were students of the Class C Automotive Engineering Study Program at Yogyakarta State University as respondents in this study. Determination of respondents as a sample is done by using the probability method with a stratified random sampling approach.

3 Result

Here are the percentage results of the perception of students of the Automotive Engineering Study Program class C at UNY towards online lectures during the pandemic Covid-19:

![Circle diagram showing the effectiveness of application media for online learning](image)

**Fig. 1. Presentation of The Effectiveness of Application Media for Online Learning**

The circle diagram above shows the effectiveness of application media for online lectures during the pandemic Covid-19. From the percentage of use of application media to carry out learning in lectures, students prefer the use of application media combined with other application media with a percentage of 81%, using Google Meet as much as 14.3%, and 4.7% choose to use WhatsApp Group. With the selection of media applications the combination of several effective media certainly has obstacles in its optimization, so it can hamper the learning process. And the obstacles that are often experienced are as follows:
The percentage in the circle diagram above shows some of the obstacles that arise when running online learning experienced by students of automotive engineering study program class C at UNY during the pandemic Covid-19. Constraints of useing this application can interfere during the learning process. Obstacles are often experienced when learning in using application media that shows 81% of students choose the internet network, 14.3% choose internet data quota, and 4.7% choose optimization on the platform system in the effectiveness of lectures.

The circle diagram above shows how students of the Automotive Engineering Study Program class C at UNY in dealing with obstacles when using application during the pandemic Covid-19. To solve problems that are scattered unexpected things can interfere with the process in learning in lectures, where each student has his own way to overcome the existing obstacles. Percentage results showed that 57.1% of students chose permission to teacher of the related courses, and 42.9% of students chose to go looking for the internet network to be able to follow the learning process.
The circle diagram above shows the type of communication model in learning that occurred in students of the Automotive Engineering Study Program class C at UNY during the pandemic Covid-19. This communication model can determine how to interact in online learning process of students and lecturers. The above perception results show that 38.1% of students think that communication occurs in two-way communication, 33.3% of students think semi-two-way communication, and 28.6% of students think that communication that occurs is one-way communication in learning process.

The circle diagram above shows the learning style that is easily understood by students of the Automotive Engineering Study Program class C at UNY during the pandemic Covid-19. Learning style is the understanding of each individual in understanding each learning material. In this case lecturers not only provide material in the form of one type of learning style, but can be several types of learning styles to students. Percentage results showed that 85.7% of students chose the learning style visually, and 14.3% of students chose the learning style kinesthetically.
In the circle diagram above shows the percentage of effectiveness of lectures using online application media for students of Automotive Engineering Study Program class C at UNY. Percentage results showed that 38.1% of students not satisfied, 28.6% of students quite satisfied, 23.8% of students are less satisfied, and 9.5% of students satisfied.

The effectiveness of lectures conducted online is influenced by the use of application media that there can be obstacles in its optimization, but in the constraints students can follow it in various ways. With the selection of communication models in learning can determine the direction of learning style for students so as to make online lectures run effectively and smoothly.

3 Discussion

From the results of the study obtained data that give overview the online learning model of students automotive engineering study program class C at UNY. The results showed by gives online question, it could describe the perception of students Automotive Engineering Study Program class C at UNY. The teaching and learning process studied is learning that on carried out online to avoid the Covid-19 virus, contained in the circular issued by the Minister of Education No. 3 of 2020 on the prevention Covid-19 virus that instructs the learning process is implemented at home with online/distance learning. This program is very appropriate to be implemented in the era of the spread on Covid-19 virus where lecturers socialize to carry out physical and social distancing.

As we know today, Indonesia is even the world in the land of the Covid-19 pandemic. The Covid-19 virus is new the name given by the World Health Organization (WHO) to patients who were infected with the corona virus which was first reported from the city of Wuhan. The pandemic outbreak came suddenly, the Indonesian government had to take the tough decision to close all schools to reduce the spread of the virus massively and to save everyone’s lives. Online lectures a solution to respond to the challenges that are present during the pandemic in education at Indonesian today. Its application is done by way of the delivery of material done over the internet synchronously or asynchronously. This makes it easier for students who follow online courses to save more time and energy. This perception leads to learning models obtained
from several approaches, application media in online learning, then there are obstacles in the use of application media, overcome the obstacles that arise, learn communication models, learn styles, and the effectiveness in online lectures.

With the learning done online, of course, many things must be prepared ranging from facilities and infrastructure to the readiness of universities to run the learning process online. Online learning that is done by each lecturer certainly has each way to convey the learn process in lecture. The learning process, of course, many media applications are available for use including Zoom, Whatsapp (WA), Google Classroom, Google Meet, etc. Knowledge of the application media used can determine against students to be able or not in applying learning media.

From a wide range of application media for learning in research (Figure 1) it was produced that 81% of the 48 students who were in the C-class Automotive Engineering Study Program at UNY chose a combination of several application media as the most effective application media as a learning medium during online lectures, in addition 14.3% chose Google Meet, and 4.7% used WhatsApp Group. The percentage of 81% indicates that students who choose to use combination media applications (WA, Zoom, Google Classroom, Google Meet) as learning media applications that are effective during lectures. Information and communication technology in the field of education that is able to digitize the contents of the teaching and learning systems or more popularly called LMS (Learning Management System). Combining applications from several media to support learning is a form utilization in advancement of Information and Communication Technology the presents a new way in the process of distribution of science has changed the role of a teacher in learning process. This term is used to describe learning situations that echo several methods of delivery that aim to provide the most effective and efficient experience. Learning is not enough just by face-to-face meetings, the teaching materials provided can be visualized making it easier to learn it.

Online lectures are a means of learning in lieu of face-to-face lectures, which when in learning will certainly find obstacles in the use of application media. Online learning a form conventional learn delivery to poured into digital formats over the internet which is one of the solutions in the current pandemic emergency. In the selection of various application media to support learning will certainly bring its own obstacles for online learning. These obstacles become important things that must be resolved for smooth learning. Psychological factors originating from outside the student affect learning activities. From the results of the research questionnaire on (Figure 2) showed that as many as 81% of students experienced internet network constraints when optimizing application media at the time of learning, 14.3% on internet data quotas, and 4.7% on the optimization of platform systems. A percentage of 81% indicated that the most obstacles that appeared were on the student internet network. The results of research from respondents, the seen in general a obstacles they experience are fundamental or fundamental, including problems with the internet networks. Most students do not live in urban areas, so the type of provider they use is certainly different and the quality of many internet networks is not so much less supportive of online learning. The advancement of a technology must certainly be supported by a finger that is easy, especially on the internet network, so that in the use of technology in learning can help the learning process.

Students has getting used to online lectures, so that in the online survey questionnaire on (Figure 3) can be known how students deal with the obstacles that arise during online lectures is 57.1% with permission to lecturers related courses, and another way to follow is to go looking for the internet network as much as 42.9%. Students that is a generation Z, cognitive skills and attitudes do not have significant problems in pursuing the online learning. Good communication also affects the online learning process, so the communication model also has a significant
impact. In the implementation of virtual system lectures, the right communication model is needed. From the results of the research questionnaire on (Figure 4) showed as many as 38.1% of students felt that the communication that occurred was two-way communication, 33.3% of communication that occurred was semi-two-collar communication, and 28.6% one-way communication. From the results of the percentage shows that each student has a different learning style each individual that will affect the person in understanding something.

Good communication in learning will certainly shape the learning style that occurs, such as the results of an online survey in (Figure 5) found that 85.7% of students like the style of learning that is done visually (exposure of material using image media, PPT, word), and 14.3% like kinesthetic learning style (learning by searching for material independently). Effectiveness in learning style will certainly determine its own sense of satisfaction in running online lectures in this pandemic. Online learning is technology-based learning that includes use the internet and other things such as in produce materials for learning, teaching, and organizing learning. Of course, each individual student will vary in the level of satisfaction when learning is carried out online, such as the results of research on (Figure 6) in the effectiveness of online lectures of students of Automotive Engineering Study Program class C at UNY as many as 38.1% choose not satisfied in doing online learning, 28.6% are quite satisfied, 23.8% are less satisfied, and 9.5% are satisfied. With the current pandemic Covid-19 situation required to know the crowd and reduce direct interaction, online lectures are a solution. On the other hand, the implementation of online lectures conducted by each lecturer of related courses will certainly be different in the use of application media and of course there are obstacles that will arise. The longer the online lectures, the more students know how to overcome the obstacles that arise in each learning. With this, learning will be effective if from the selected learning model is right and uses a good communication model, as well as the right learning style.

Conclusion

From the results of data processing showed that 22 students of the Automotive Engineering Study Program class C at UNY assessed the effectiveness of online learning in terms of communication models with the application media use approach for learning, students prefer a combination of application media from several applications (Whatsapp, Google Classroom, Meet, Zoom) which is considered to help for receive materials and implement a studying. The optimization of application media certainly has existing obstacles, and the obstacles that often appear are on the internet network. To deal with existing obstacles, most students will permit lecturers related courses to communicate existing problems. In communicating using learning application media, communication is often used, namely two-way communication. Automotive Engineering Study Program students prefer a visual learning style which is usually in the presentation of material using the form of images, power points, and words. The effectiveness of online learning makes it dissatisfied for some students, because it depends on the ability and motivation to learn. But by using learning models such as application media selection, can deal with existing constraints, communication models and appropriate learning styles will lead to the success of online learning.

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Civic Engagement and Higher Education Develop Student in Civic Education Through based Project Citizen Model Learning

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Abstract. The research aims to foster a sense of civic responsibility through service-learning based Civic Education. The research uses qualitative methods with descriptive-analytical approaches that track a variety of actual references to civic engagement in society. The results showed that civic involvement in society can foster a sense of responsibility for citizens. From the analysis conducted, civil and community collaboration in making policies can build learning services through the project citizen model. There are several positive things, namely: (1) students enjoy the implementation of practical activities; (2) Students have the opportunity to study a variety of issues; (3) Students can understand how to position themselves in seeing others; (4) Students experience the conditions to deal with obstacles to various ways of solving problems, and (5) students can learn the culture of the communities they serve.

Keywords: Civic Engagements, Service-learning, Project Citizen, Civic Responsibility, Civic Education.

1. Introduction

In this current era, young citizens are required to strengthen their identity and maximize their engagement in community life by participating in campus, government, and stakeholder’s program or project (Adha, et al. 2019). The students’ engagement becomes more effective if it has been planned and prepared properly. Campus as an academic environment is responsible for managing and involving students in various community-based fundamental projects. Life skills and student participation that develops after participating in community activities aim to increase self-potency (civic skills) and individual responsibilities as part of a community [2].

The fundamental problem in this current era is that young citizens have not been able to be responsible citizens, lack confidence, and unable to make a decision when facing problems. Individualistic attitudes that arise and unfavourable environmental condition to get young people involved in community life activities become factors that weaken social care or social awareness so that they pay less attention to other people around.
The emergence of Civic Engagement by Ernest Boyer responded to this plan to involve students in the community to overcome the existing problems [3]. This is done by the existence of ethical issues that penetrate the community. With this condition, the most important thing to do is to involve the academia or campus world in the middle of the community as a vital line that brings to new changes to be aligned with the education vision and mission as an agent of change in leadership and professional lecturers [4]. This method links to research and practice involving students in a research project in the community [5]–[9]. This concept becomes a pedagogical approach to bring change and develop citizens’ knowledge and skills. Especially for young citizens so that they can overcome the social problems that still exist both locally and nationally. The harmony between education and community has the engagement of social interaction and mutual need between one another, in the end, it will build a sense of unity and responsibility.

In essence, Civic Engagement and Service Learning is an academic process to meet the engagement of students especially to be involved in a community by integrating the curriculum into academics. The development of an integrated curriculum provides opportunities for students to develop their abilities in dealing with the existing problems in a community. Another thing, the integrated program also to directly review the students’ academic results [10]. Besides that, learning service will develop social care so that they will develop responsibility for problems in a community.

Until now, the experts in higher education, government, and businessman, public, and other parts of the community in a real and ongoing demand every campus and university to focus on student learning which more involved them to empower democratic life and realize the citizenship globally. The university’s effort to guide students is the main thing so that the community and organization can accept it as an embodiment of determining a renewal in solving problems [11]. To actualize the program, universities or other related institutions must work together by using various strategies to achieve the goal. It needs a variety of innovations so that the program, strategy, or the objectives of Civic Engagement and Service Learning can be optimally implemented.

1.1. Research Questions
1. How civic engagement studies in college?
2. How service-learning studies in civic education learning?
3. What is the responsibility of students as citizens in providing learning services to the community?

1.2. Research Objectives
1. To investigate the study of civic engagement in college
2. To investigate and identify civic education learning as a learning service?
3. To investigate the challenges of students in providing learning services to the community
4. To identify and recommend effective learning in breaking down social problems.

2. Related Literature

2.1. Civic Engagement
Civic Engagement is often called civic participation which is everything related to citizens action. The citizens action which done both personally and communally aims to jointly
determine policies in governance and community. Many steps of Civic Engagement are positively related to student engagement with results including collaborating knowledge, skills, values, and motivation to change various forms of engagement into academic achievement, and certain institution is more effectively change the students’ engagement into higher performance on critical thinking test [12]. The presence of students in the community participates in the community to improve the condition of the community. Community engagement is a new movement that can change their future for the better [13]. This can help raise awareness of them as citizens. There are 18 civic engagement indicators divided into 3 (three) large civic engagement indicators and that is; (1) civic indicators, community problem solving, regular volunteering for a nonelectoral organization, active membership in a group or association, participation in fund-raising run/walk/ride, other fund-raising for charity; electoral indicators, regular voting, persuading others, displaying buttons, signs, stickers, campaign contributions, volunteering for candidate or political organizations; indicators of political voice, contacting officials, contacting the print media, contacting the broadcast media, protesting, e-mail petitions, written petitions, boycotting, canvassing [14]. Of the 18 indicators surveyed by experts, all indicators are components of community engagement that can change the way groups work better at breaking down problems and creating alternative solutions. All initiatives made should help in raising awareness of the potential involvement of citizens. In addition, it can help change sustainable growth and contribution. Thus civic engagement is a powerful solution that can help change the way organizations think about potential sources that can support them.

2.2. Service Learning

Student activity in practicing academic learning is a form of Service Learning. Student experience activity in the community is not the same as activities like social assistance, work visits, or counselling. However, the Service Learning here is more to a permanent program to be done sustainably. More than that, The Service Learning provides additional academic elements in a visit or social assistance, practical experience in the community in the learning process about the community and provides the elements of community engagement in fieldwork practice. The results of services learning implications obtained by students can train academic and social skills. From this element students can develop their ability to; (a) apply their academic, social, and personal skills to develop communities, (b) make real decisions instead of hypotheses or conclusions, (c) grow as individuals, gain respect for peers, and increase their participation, (d) gain successful experiences that may not match their abilities, (e) gain a deeper understanding of themselves, their communities, and communities, (f) develop leaders who are able to take initiative, solve problems, work as a team, and demonstrate the ability to help others [15].

From the six skills can be done by students through services learning taking into account the needs of the community to be served, students in this position must be actively involved in the community to carry out services activities. Figure 1 the Position of Service Learning can be seen in the following:
Furthermore, there are 3 important criteria that must be considered in Service Learning which relate to the picture above, they are.

a. Services must be as needed and benefit the community  
b. Increasing the quality of academic learning  
c. Preparing students to participate in the community  

The three criteria above are very important in fulfilling the requirements so that it can be included in the Service Learning academic qualification. If there is not one of these three things, it cannot be said as a Service Learning approach.

2.3. Project Citizen

Project Citizen learning model is based on the strategy of “inquiry learning, discovery learning, problem-solving learning, research-oriented learning” (learning through research, learning to find/disclosure, problem-solving learning, research-based learning). This model was packaged by John Dewey called Project Citizen. This model is suitable when applied in Civic learning to build the character of smart and good Indonesian citizens [16]–[18]. This model can be applied in lectures for one semester. Many learning activities of Project Citizen done outside the classroom. Lecturers can do weekly monitoring by the specified time. Thus the overall project citizen learning model helps students in all scientific fields let alone social fields. The learning model is very powerful to help students and the community in solving problems.

2.4. Civic Educations

Civic Education has been applied and developed in every country in this world. This subject is named in various terms in this world such as Civic Education, Citizenship Education even Democracy Education. This subject has a strategic role in preparing smart, responsible, and civilized citizens. John C. Cogan has distinguished the meaning between Civic Education and Citizenship Education. According to John C. Cogan, Civic Education is “…the foundational course work in a school designed to prepare young citizens for an active role in their communities in their adult lives” [19], or a subject which designed to prepare young citizens so that they have been adults they can play an active role in their community. Whereas Citizenship Education is used as a term that has a broader meaning that includes “…both these in-school experiences as well as out-of-school or non-formal/informal learning which takes place in the family, the religious organization, community organizations, the media, etc which help to shape the totality of the citizen” [19], [20]. This means Citizenship Education is a generic...
term that includes learning experiences in school and out of school, as happens in the family environment, religious organizations, social organizations, and media.

From the above opinion, it can be stated that the term Citizenship Education has a broader scope definition includes Citizenship Education in specific meaning (Civic Education). With this broad scope, Citizenship Education includes Citizenship Education in specific meaning (Civic Education). Citizenship Education as an educational process in the context of preparing young citizens for their rights, roles, and responsibilities as citizens, while Civic Education is a Citizenship Education conducted through schooling.

The above description confirms that Citizenship Education is a learning process that focuses on the right to form citizens who understand and do their rights and obligations to be smart, skilled, and characterized citizens. Thus, to develop their abilities, it is necessary to conduct a Service Learning or Civic Engagement through the Project Citizen model as a driving force for intelligent citizens.

2.5. Indicators and Student Participation Process

The following table I will describe the process of student activities in their participation in the community, this is described to show how often or how much they are involved in solving social problems in the community where they conduct field studies of programs that have been run as learning services in the community. The process and indicators can be seen in table I as follows:

Table I. Indicators and Processes of Student Participation

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Participation</th>
<th>Citizenship project Learning Services</th>
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<tbody>
<tr>
<td>Civic Activities</td>
<td>Student involvement in the community in providing learning services</td>
<td>Help identification problems, find problems, discuss problems in the community</td>
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<td>Help solve problems together in the community</td>
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<td>Help determine alternative problem solving in the community</td>
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<td>Help explain the results they have studied together, together with the community</td>
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<td>Helping people discuss important issues in society</td>
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<td>Serving the community to identify problems</td>
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<td>Serving and helping people design solutions to predefined problems</td>
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<td>Helping people evaluate the results of cooperation</td>
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<td>Helping people in holding elections</td>
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<td>Helping the community explain to the community the</td>
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<td>Electoral activities</td>
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Table 1 above is an overview of the process of student activities and the involvement of universities and related officials when in the middle of the community, the process is comparable to what is required as a guarantor of the development of their activities. There are three stages of indicators that they undergo to describe in their activities, namely; Civic Activities, Electoral activities, Political Voice Activities. Students are asked to clarify, make conclusions, and describe their activities while in the middle of society.

3. Methodology

3.1. Research Goal

This research uses a descriptive qualitative method (Creswell, 2017; Creswell, 2015). Qualitative research is research that aims to examine the concepts and their implications in academic practice. This study provides an overview of the effectiveness of service-learning and its intertwining in society. The research focus is aimed at tertiary institutions based on observations that are assumed to be not maximal in implementing civic engagement and service-learning to participate in society. The research begins face-to-face in class, identifies problems, chooses problems, looks for solutions, and continues with the practical field stage providing alternative solutions to problems based on predetermined solutions.

3.2. Sample and Data Collection

The study involved 86 people, consisting of 80 students and 6 lecturers involved in the learning of citizenship education. The research was conducted at Jambi University. The location of the study was chosen by the author has a strong reason basis, the first university Jambi is the largest university in Jambi provision, the two students as a whole have had a variety of scientific
basic, thirdly actually Jambi University has provided learning services in the community with
the concept of real work lectures conducted by students. The research was conducted for six
months by giving questions about involvement in the community both in students and lecturers.
Then given a questionnaire of 16 question items from three indicators to obtain answers.

The choice of answers consists of ‘ever, sometimes, often, not’ and ’a few, a few, quite,
very much. This question requires an ideal answer, to answer the statement. But the answers
needed to meet the ideal score are ‘often’ and very much’. Questions have been developed and
validated by experts. This question item is addressed to students by questioning their
involvement while in the community. Furthermore, there are 4 items from 16 items aimed at
lecturers to know their role in leading and directing students and contributing to society.

3.3. Analyzing of Data

The researchers conducted live interviews with students and lecturers in collecting data. In
addition, the interview was conducted in September 2020. To observe the process of student
involvement in the community, researchers again collected data in December 2020 with the
same question of previous interviews consisting of 16 similar questions because they had
alignment with previous interviews. The data were obtained through questionnaires,
observations, and interviews. Data is analyzed and interpreted through data triangulation

4. Results

Based on the observation and interview process that learning services are carried out on an
ongoing basis. The intertwining of cooperation between universities and communities in
determining the success or lack of learning services. Learning is done through the citizen project
model conducted together both in the college environment in the classroom and in the
community. In universities, lecturers provide provisions about programs that will be carried out
in communities that have been adapted to the existing curriculum. Besides, the student
community implements the program by the plan agreed jointly by the community devices. Thus
service-learning are in theory aligned with what is practiced in society. Project citizen learning
is integrated by the program materials. The steps and stages of learning services through the
citizen project model involve the community by determining problems, identifying problems,
and determining policies. The steps performed are as shown:

<table>
<thead>
<tr>
<th>No</th>
<th>Steps</th>
<th>Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Service-Learning</td>
<td>The initial step that needs to be carried out to encourage the community to work together and provide an explanation of identifying problems that exist in the community where they are given the task of service-learning. The first phase of service-learning connects academics and the community to strengthen each other. The students' engagement in the community provides services to identify what problems need most to find a solution.</td>
</tr>
<tr>
<td>Step</td>
<td>Service-Learning</td>
<td>Description</td>
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<td>------</td>
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<tr>
<td>1</td>
<td>Choosing a Problem</td>
<td>In context, the community has multi problems. At this step, the service-learning of all students and community components discuss together what is most important for finding an early solution. The selected problem will be the project target for all that engaged. This service-learning will provide a definite description of what problems will be taken. Education plans from the beginning to the last stage. This step can be done hierarchically from the superiors to staff and lecturers. The actions are carried out as carefully as possible to bring about change in the community. Service-learning also explores various problems that exist in the community, of course, the initial survey before students are engaged by the university components has comprehensive data so that students can work optimally and recognize various needs in the community to be realized.</td>
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<td>2</td>
<td>Collecting Information</td>
<td>On the third step, the students and community members looking for information as a guide to explore what can be needed to adapt existing problems with new things as a solution. In service-learning, it can directly as a student who interacts with the community members in providing services. As students, the process needs to have a broad understanding and adapt to the culture of the community in collecting information.</td>
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<tr>
<td>3</td>
<td>Portfolio Documents</td>
<td>In this Service-learning step, the students can combine theoretical studies with practical studies in the field. The students can explain the documents theoretically and explain the implementation in the field logically.</td>
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<td>4</td>
<td>Reflecting Studies</td>
<td>The service-learning activities done in this step is, the students invite groups (peers) within the scope that has been formed in the community to provide the results of reflection on activities and efforts that have been done together to assess the effectiveness and usefulness.</td>
</tr>
<tr>
<td>5</td>
<td>Finding New Things</td>
<td>The implementation of new findings that can be applied by the community guided by the students based on the steps and processes that have been prepared previously.</td>
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</table>

From the table above, the purpose of learning in citizenship education through a clearly illustrated citizen project model with structured steps that bring students to learn to explore issues that will be dealt with by both teams and groups. The stage combines theory and practical studies that enable the readiness of students and their groups to go through a mature process. Citizenship education with project citizen learning model as a learning service can train students to build skills both knowledge, skills and values and a sense of responsibility as citizens. Learning services also reflect students and community groups on the effectiveness of usefulness when learning is applied. Thus, project citizen learning measures in learning services involve the community making an important contribution to solving problems in the community.
5. Discussion

5.1. Civic Engagement in University

Civic Engagement or mostly known as Civic Participation is things related to citizens' actions. The citizens’ actions which done both personally and communally aim to jointly determine policies in government and community. Civic Engagement also collaborates knowledge, skills, values, and motivation to create something new Civic Engagement in universities is very complex and instructional. However, Civic Engagement in universities also aims to improve conditions for other people or to create the future of the community. This engagement is not only limited to young citizens but more than that where it embraces the old citizens [13]. For universities, all students can be directly engaged to contribute to the community. The arena of students’ engagement is to create an academic culture in the community on one side and measure the civic learning on the other side [23]. In the context of universities, the learning of documents relevant results in knowledge, skills, values, and engagement of citizens to solve cases to build civic learning and engagement in the curriculum [23].

According to Keeter, there are 18 sub-indicators in Civic Engagement which divided into 3 indicators [14]. The indicators can be seen in the following Table.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Sub Indicators</th>
<th>Civic Engagement in University</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civic activities</td>
<td>Solving community problems • Volunteers for non-election organizations • Active in organization members • Participating in fundraising • Fund distribution</td>
<td>Solving problems • Forming groups as volunteers • Participating in the community • Making a work plan program</td>
</tr>
<tr>
<td>Electoral activities</td>
<td>Voting in general • Encouraging others • Displaying image or symbol • Contributing to campaigns • Volunteer for political candidates or organization</td>
<td>Giving rights • Influencing attitudes • Channeling aspirations • Finding relationships for social engagement</td>
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<tr>
<td>Political Voice Activities</td>
<td>Contacting officials • Contacting print media • Contacting media broadcasts • Protesting • Petition via email/ written • Boycotting • Describing</td>
<td>Maintaining social relationships • Making plans for drawing • Informing activities that can be utilized by the community • Establishing the potential that exists in the community</td>
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</table>
From the three indicators above, there are very comprehensive tasks engaging the citizens to form new things for the community. From social to economic and political aspects become a responsibility in running Civic Engagement as a learning service in the community. The curriculum is as a reference to include what materials and projects need for citizens. Aligning to the goals of the educational mission and vision as an outcome for citizenship learning is needed so the aspects of the citizens’ competence including civic knowledge, civic skill, civic value, civic disposition, and civic competence are fulfilled.

In the context of Civic Engagement through the Service Learning sector, universities are projected to be able to teach or provide important provisions to students in form of citizenship skill or abilities such as getting more information, being able to make considerations in making decisions, aware of differences by prioritizing respect, able to work together to find a creative alternative solution and to find out information in the community.

Civic Engagement which implemented in universities is to encourage students to see themselves as a person who can provide solutions for the problems that occur around where they live while developing or honing their abilities in working with others to a good change. Hence, the universities should provide plenty of opportunities for students to learn and practice in the Civic Engagement program which later can create their citizenship identity, “We must provide opportunities for students to learn about and practice civic engagement so they can create their own civic identities” [24]. Of course, the students’ needs provision for their engagement whether as a neighbourhood life in the community, family member, association member, volunteers, members or leaders of an organization, advocates and activists, professionals, politicians, civil servants, or as business leaders and social environment.

According to Benjamin Franklin and Thomas Jefferson, universities should be more responsive to see the students’ needs in developing nations. Both of these experts described that students who participate, responsible, and have other various important information can be qualified human beings. Furthermore, the most important thing is the application in democratic life. However, the focus of universities in the revolution era is experiencing shift which at the beginning is to prepare “well informed” citizens to an individual that able to build nation since it is known that in 1862 with the Land Grand Act made Civic Engagement more related to agriculture and industry, so this is the shift lies. Furthermore, John Dewey stated that there are three important elements in civic engagement development [24], they are 1) college students in the surrounding community; 2) it should be based on problems to be solved rather than academic discipline; 3) it should collaboratively involve students and faculty.

The strengthening of the Civic Engagement program in America in the 1980s was because at that time America realized that in general, its citizens were apathetic especially the students. Therefore, challenged the academics at that time to focus their attention on education that emphasized Civic Engagement which was a combination of knowledge and its application, in terms of personal self-strengthening by developing aspects of thinking. Furthermore, the presence of students in the community fulfils their role to discuss things that are urgent with other communities in the community as well as how to enable the power of cooperation to make important solutions of one problem in the community. Thus, the learning services presented by universities in the community take an important role and aim to realize that the rights and obligations as citizens can contribute to the nation and the country. On the other hand civic engagement teaches how to be a smart, skilled and responsible citizen.

The experience of students in the community not only gained experience but can develop their knowledge, skills and academic dispositions that build their personal skills. On the other hand one of the cherished results of learning services through civic engagement competencies
of teamwork culture. The purpose of all of this is to lead them to learn to develop critical thinking skills as citizens when there is laziness in the community.

5.2. Service Learning in Civic Education

Service-learning and community engagement are important things that engage all the education components especially the academic studies that participate in the community to strengthen one another. Higher educations are institutions that always have goals for public and academic. These objectives require the readiness of institutions to be more engaged with the public, community, and the community members to actively cultivate a responsibility sense as citizens and aim to prepare young citizens to be the nation’s future leaders [3], [10], [25], [26]. The approach that needs to be taken for service learning emphasizes community engagement, social change, and social justice [27], [28]. Service-learning more emphasizes on political services and social change which will impact on welfare and justice. The approach can be described as follows [28]:

Fig. 2. Relationship between Application of Knowledge Skill and Service-Politic
To integrate Service Learning in civics learning needs a good strategy. The role of lecturers and academic staff is needed to prepare services and facilities so that the learning can be integrated with Service Learning activities. Service Learning requires knowledge that becomes a basis for implemented learning services in real work as citizens. The Project Citizen model in Citizenship Education Learning is in harmony with the concept of Service Learning to engage students in the community to participate in solving public problems. The Project Citizen is a program that encourages students to be actively engaged with government and civil community organizations to solve a problem at school or in community and to hone the important social intellectual and intelligence for responsible democratic citizenship, so the aim of the Project Citizen is to motivate and empower students in using democratic citizenship rights and responsibilities through intensive research on public policy issues at school or in the community in which they interact [16], [18], [29], [30].

5.3. Service Learning as Citizens Responsibility

Service Learning is one of the solutions for establishing responsible and participatory citizens [31]. The integration of service learning in citizenship education through the citizen project model contributes to students and citizens by working through the stages of the designated citizen project steps. Through these measures they provide services to the community that are important and urgent on a considerable scale. So as to make alternative goals, implementation and evaluation into their responsibility as citizens.

Civic responsibility is defined as citizen responsibility. These responsibilities include actions and attitudes related to democratic governance and social participation. Participation can be done in government, mosques/churches, volunteers, and voluntary association membership. Citizen liability actions can be displayed in advocacy for various fields, namely economics, politics, civil, environment, and quality of life issues. Service Learning has a very positive influence on the development and change of the students’ or students participating in the program characters. In the reflection phase, the Service-Learning participants and the targets state that they become aware of the different perspectives between each individual when looking at the problem. Generally, before participating in Service Learning or running the program, the participants and the targets tend to see problems from their perspective. After the implementation, they can see the problem from a different perspective and make a decision jointly and aware of cultural, educational social, and perspective diversity. Working in providing services to the community requires commitment and hard work so that the contribution brought by the students and volunteers can be felt significantly by the community [32], [33].

Various Service-Learning theories described studies related to student development get positive results. The process of academic culture exchange with the community becomes a learning target [34]. The lecturers and the students with the community members directly interact with each other, so that there is an emotional, professional and interactional relationship that impacts the establishing of characters and sense of responsibility [34]. The responsibilities as citizens, in this case, pay attention to several elements for example paying attention to the community needs, engaging the active participation of citizens [35], and provide opportunities for students to do reflections on their service activities. Thus, the responsibility will be established by service-learning through service-Learning concept or Civic Engagement conceptualized by universities based on the designed curriculum.
6. Conclusion

Civic engagement and service learning are applied by universities to build a sense of responsibility as citizens. Attention to this research is focused on the involvement of colleges in society to solve social problems. The ability of the college's cooperation with the community is carried out through work programs that have been prepared by students. With the project citizen model there are six stages in preparing the student work program, namely: identifying problems, choosing problems, collecting information, portfolio documents, reflecting studies and, determining the solution of the problem. The results showed that through the learning model project citizen experienced several positive influences, namely; (1) students enjoy the implementation of practical activities; (2) students have the opportunity to study various problems to be solved; (3) Students can understand how to position themselves in seeing others; (4) students experiencing conditions must face the obstacles of different ways of solving problems, and; (5) students can learn the culture of the communities they serve; (6) may determine policy alternatives to the issue. Thus it can be blinded that student involvement in the community through the project citizen model can bring change. These changes not only solve the problem but also provide a solution to the problem.

7. Recommendations

This research examines the implementation of civil servants and service-learning among students at Jambi University qualitatively. Researchers can further do similar themes by engaging subjects from multiple universities quantitatively by region, type, and university rankings. project citizen is a learning model that encourages students to collaborate in small research to address the problems that exist in society. for practitioners, it is recommended to use the project citizen model while providing learning services as well as student engagement when addressing social issues because, theoretically, project citizens can increase participation in community engagement.

8. Limitations

Project citizen is new learning model for lecturers and students at Jambi University. This situation inhibits the learning measures of the implementation of the project citizen model in the learning of citizenship education. So in the early stages of research, there are difficulties in realizing, documenting learning services, and applying them as citizens.
9. Acknowledgement

We express our deep gratitude to the Education Fund Management Agency (LPDP) Republic of Indonesia for providing funding for this research. We also thank all those involved in this research.

References


Coastal Students’ Perspectives on Digital Reading Comprehension: A Rasch Model Analysis

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Abstract. The purpose of this study was to determine the coastal students’ perspective on digital reading comprehension. The study was conducted at Universitas Maritim Raja Ali Haji in the department of English Education in 2021. A descriptive quantitative method using questionnaires was applied to collect data from 70 second-semester students who participated in this exercise. The data collected was analyzed quantitatively using the Rasch model called Winsteps version 3.73 software. The results revealed that most coastal students had a good perception of digital reading comprehension. Furthermore, they believed digital reading greatly improved their reading comprehension than traditional methods.

Keywords: Coastal students’ perspective, digital reading, reading comprehension, Rasch model

1 Introduction

The massive impact of the Covid-19 pandemic has been felt across all sectors, including the economy, politics, governance, health, and education. Many countries across the globe closed down schools to stop the spread of the Covid-19 virus. Therefore, studying from home with the help of online learning became an option for many educational institutions. Online learning is a type of learning in which teachers or lecturers employ technology to provide material and engage with the students through the internet. This phenomenon has had a significant impact on learning in all fields of study, including learning English.

English is among the few internationally recognized and highly spoken languages in the world. Being the world’s main social language, the demand for learning the language continues to rise by the day [1]. Consequently, the nature of English in education has changed significantly in the last decade. This has not only resulted in several changes in the way the language is taught and learned but has also led to innovative practices in everyday life. Presently, all people, specifically the students, are expected to be proficient in written and spoken English. Mastering it will not only help them improve their academics and social skills but also make it easy to handle society.
In Indonesia, English is one of the major foreign languages taught in elementary schools [2]. To master it, students must have the four skills crucial to learning foreign languages. However, most times, students find it challenging to read English texts due to wrong perceptions.

Reading is a fundamental skill intertwined with others, such as writing, speaking, and listening. To gain better learning results, students must attempt to read extensively and comprehend the texts. Reading is a method of obtaining information from a text to achieve a better understanding [3]. It helps students to enhance their language and writing skills. Students who enjoy and devote significant time to reading would write well. Therefore, English tutors must have a strong grasp of grammar and vocabulary. This is because the aim of teaching is to develop students’ skills and knowledge to read and comprehend texts. Students should also have the ability to alter reading techniques based on the goal of reading, such as skimming and scanning, as well as the ability to take a critical view of the texts’ substances [4].

Reading and comprehension are closely related to one another and cannot be separated. Reading involves pronouncing the contents, which can be letters or numbers that are systematically arranged. Reading helps one gain information and knowledge concerning a certain subject besides knowing what is occurring in many parts of the world. If ‘reading’ converts text into sounds or spoken words, then ‘comprehension’ implies making sense of all those words. Specifically, reading is the process of making sense of written texts, while comprehension involves making sense of words, sentences, and connected text [5]. Therefore, reading comprehension is known as the ability to grasp and evaluate information in a text [3], [6]. It is impractical for someone to read a text but does not understand the meaning of what is read. This indicates that reading comprehension is a necessary component of understanding the meaning of the text during the reading process. The objective of reading is to understand the written texts, which implies that reading comprehension involves both perception and consideration. Having the background information, vocabulary, grammar knowledge, and other skills helps readers to grasp written materials. Therefore, students need to have excellent reading abilities to excel in their academic endeavors [7]. Other experts indicated that studying the characteristics of efficient reading comprehension is a critical problem for educational psychology [8].

Presently, one of the most extensively used media to promote education is online learning, which allows students to complete studying and demonstration exercises at any time [9]. Some recent studies on online reading methods investigated whether digital reading is more convenient than conventional methods to help with language comprehension [11] and whether the techniques utilized can help with web-based learning [12].

Perceptions of students provide a foundation for learning, comprehending, and directing a certain action or response [13]. Even though they may reach an agreement, everyone might have distinct viewpoints concerning suggesting information and understanding a message. There are various previous studies regarding digital reading comprehension, including [10], [14], [15], [16], [17], [18]. The results from these studies indicate advantages of digital reading have had a meaningful impact on students’ comprehension skills. From previous studies, digital reading comprehension has some impacts on students’ reading comprehension habits. There are several benefits for students while reading digital texts. These include convenience while understanding the content due to the layout, saving print paper, visible display without poor printing quality, improving online interpretation, making the material easier to follow, and developing material reading abilities.

Reading helps a person to discover the meaning and value included in a text or summarize the meaning. In addition, the term shows that reading entails comprehension. This implies that readers would find it hard to read a text they do not understand [19]. As a result, when one is
reading, they must attempt to understand and keep the information in their minds. It can be inferred that reading is a process that involves a written text in which readers use their thoughts to understand the material. Additionally, reading is the unification of visual and nonvisual information [5]. As a result, while reading, someone seeks the visual information and combines it with the nonvisual message in their thoughts to produce a creative process (reading).

The ability to read enables learners to participate in comprehension activities such as literal comprehension and contextual and analytical understanding [20]. First, literal comprehension involves the knowledge of notions and facts for a reader to better understand the text’s substance. Second, contextual understanding is a summary of the meaning as expressed by readers in their own words. Third, analytical understanding requires the reader to elucidate, evaluate, and gather data. Readers require all these reading comprehension levels to get the information clearly and draw conclusions based on the text’s substance. The levels help readers gain useful information, such as a better grasp of the written content and retaining the read text.

Online learning is typically presented as a versatile system of teaching, with flexibility being hailed as a democratizing and appealing feature of this educational system [21], [22]. Institutions are expanding their contributions to online education [23], with e-learning becoming the mainstream that underpins the study flexibility in this environment. However, the primary challenge is determining how to organize guidance through this medium, given the abundance of online language learning materials [24]. The results indicate that online learning significantly improved participants’ vocabulary, and students gave positive feedback on the educational assessments they reviewed throughout the semester. Therefore, this study aims to determine the coastal students’ perspective on digital reading comprehension.

2 Method

This study was conducted at Tanjungpinang, Indonesia, from June to July 2021 using descriptive quantitative techniques [25], [26], [27]. This involved 70 second-semester English Education Department students of Universitas Maritim Raja Ali Haji. The data was collected using a questionnaire to determine the coastal students’ perspective on digital reading comprehension. The questionnaire consisted of 20 Likert scale questions with five possible responses ranging from 1 to 5, i.e., strongly disagree, disagree, uncertain, agree, and strongly agree. Furthermore, a Rasch model program called Winsteps [25], [26], [28], [29], [30], [31], [32], [33] was used to examine the data. The Rasch model is crucial in examining individuals in terms of how they respond to items using the person map [26].

3 Findings and Discussion

The study used a descriptive method to analyze the data collected from a sample population of 70 students drawn from Universitas Maritim Raja Ali Haji. The students are from diverse backgrounds, both rural and urban areas in Riau Islands Province. Table 1 shows information concerning the participants’ demographic information.

<table>
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<th>Table 1. Participants’ demographic information</th>
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<tr>
<td>Demographic Information</td>
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Some participants, 27% of the total, strongly disagree that digital reading comprehension is more practical. The results indicated that 27% of the participants were students from rural areas. Therefore, it was concluded that some students living in rural areas experienced difficulties during the online learning process, specifically in digital reading comprehension. In contrast, most participants from urban areas agreed that digital reading comprehension is more practical and easier to comprehend.

Figure 1 showed the Cronbach Alpha (KR-20), which measured the interaction between a person and the questionnaire item was 0.85, while the reliability test of the measured item was 0.99. Besides, the INFIT MNSQ and the OUTFIT MNSQ scores were 1.03 and 1.01. The INFIT ZSTD and the OUTFIT ZSTD scores were 0.0, while the item separation score was 3.77. Therefore, it can be concluded that the study instrument was excellent in the category. The instrument fulfilled the requirement of the Rasch model since it was able to measure the coastal students’ perspective on digital reading comprehension.

Figure 1 indicated that the person reliability result was 0.81, which can be assumed that this result was already good. The average value of respondents for the person measure was in the resilience scale. The average score – more than 0.0 – indicates the tendency of respondents to choose appropriate statements in the various items [28]. The data above revealed that the person measure value is +1.27. Also, it was found that the person reliability value was 0.81, and the item reliability of 0.93 indicated the consistency of the answer from the respondents and that the quality of the item was good. It signifies that the questionnaire belonged to a good category and that the development study instrument fulfilled the Rasch model’s requirements [28], [30].
Figure 2 also showed the rarest and the most frequent items answered by students. The rarest item to answer was item 17, which comprised of “The light from the cell phone screen increases my reading interest.” The most frequent item to answer was item 15, i.e., “I find it easier to read online textbooks anywhere and anytime using my phone.” Even though item 17 is the rarest item to answer, most students seemed to respond to it differently. Interestingly, the majority of them responded in the affirmative. Furthermore, other items, including A10, A5, A8, A16, A19, A20, A9, and A15, were agreed upon by all students. Therefore, most coastal students had a good perception of digital reading comprehension.

4 Conclusion

The study revealed that the digital method significantly affects students’ reading comprehension, making most of them embrace this learning method. This makes it the most preferred method of learning as opposed to traditional ways. Furthermore, students believe that digital learning has many advantages with a significant impact on their comprehension skills. The results indicate the need for teachers to be more creative in making the digital reading materials for students to understand better and enjoy digital reading during online learning. Finally, in the online learning process, teachers should promote independent learning to increase students’ confidence in reading.
References


Learning Motivation of Students in Teaching Indonesian to Speakers of Other Language in Manila

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Abstract. Learning motivation is one of the factors influencing language learning achievement and its continuity. This means understanding the motivation of learners is required to improve language learning. Therefore, this study aims to describe and explain the types of motivation associated with Teaching Indonesian to Speakers of Other Language (TISOL) learners in Manila, Philippines. A naturalistic case study was used with the data collected through observation and in-depth interview while the samples were selected using the purposive sampling technique. The findings showed there are two types of motivation for TISOL learners in Manila and these include external and internal motivation. The external aspect indicates the use of the Indonesian language in all the regions of Indonesia and several neighboring countries as well as the need to preserve the country’s culture and the similarities between the vocabularies of Tagalog and Indonesian languages. Meanwhile, the internal aspect includes the opportunity it provides to work with Indonesians, the willingness to gain knowledge and have new friends, and the ability to communicate with locals when traveling to Indonesia.

Keywords: TISOL, motivation, Manila.

1 Introduction

Indonesian language (hereinafter referred to as Bahasa) is the language of unity in Indonesia. It acts as a means of communication and also has a noble function and meaning because it contains national values and dignity which serve as the ideology of the Indonesian people. Moreover, one of the objectives of the country is to propose Bahasa as an international language based on the significant increase in the number of foreigners willing to learn the language. Therefore, a language learning course which is called TISOL (Teaching Indonesian to Speakers of Other Languages) has been designed by Indonesia for foreigners (Kusmiatun: 2016).

The language has become popular through these kinds of programs implemented in 29 countries in the form of the 420 BIPA (Suparsa et al., 2017), thereby, leading to the placement of Bahasa on the 4th position among the largest spoken languages in the world. For example, the local government of Ho Chi Minh City in Vietnam has officially designated Bahasa as the second foreign language while it has become the fourth most popular language in other countries such as Australia. Moreover, the BIPA learning program is one of the diplomacy strategies used in disseminating and presenting Bahasa as an international language (Jun, Hung, When, Chen, & Aldeehani, 2019).
The Indonesian language learning program for foreign speakers is a facility provided by the Indonesian government to teach foreign learners interested in learning the language (Warsono, Budyanto, & Ridwan, 2019, & Runtuwarouw, 2019), especially those from the neighboring countries in Southeast Asia. For example, Bahasa is currently being studied in eight universities in the Philippines including the University of the Philippines, Philippine Normal University, Ateneo de Manila, Mirriam College, Perpetual Help System Delta, Philippine Women's University, Far Eastern University, and the Polytechnic University of the Philippine. Moreover, PPSDK collaborated with the Indonesian Embassy in Manila to open a public class for Filipinos to learn Bahasa free of charge. It has also been sending TISOL teachers to Manila for three years. In the first year, only one teacher was sent but the number was increased to two in the second year, and three in the third year. Therefore, the focus of this research is to determine the motivations of TISOL students in the Philippines based on the higher demand for teachers every year. This is required to improve the learning process in line with the motivation of the students in order to ensure more people in the Philippines are interested in learning Bahasa.

Motivation has been conceptualized from different perspectives, it has been presented as an inner force, a long-lasting nature, behavioral responses to stimuli, and several collections of individual beliefs and emotions. It has also been defined as a process of initiating and maintaining certain activities to achieve goals (Schunk, et al, 2012: 6). Moreover, the motivation to learn is required to ensure optimal development of self-abilities to perform better, excel, and be creative (Maslow in Nashar, 2004: 42).

Clayton Alderfer (in Nashar 2004: 42) defined learning motivation as an internal and external impulse which causes an individual to act or achieve certain goals, thereby, leading to a change in behavior. This was supported by the opinion of Suprijono (2014: 163) that learning motivation provides internal and external encouragement to students learning to make behavioral changes. This means good motivation usually leads to satisfying results. It is important to note that the finding of this study is expected to become a reference to developing TISOL in the Philippines, especially Manila.

2 Methods

This is a descriptive qualitative study conducted through a case study method and this kind of research normally produces data in the form of words from an analyzed document (Bogdan and Taylor in Moleong, 2013: 4). Moreover, the data obtained were validated through the triangulation of methods and sources while the samples were selected using the purposive sampling technique. The criteria for selection include being a position to provide in-depth information relating to the issues being researched (Neuman, 2000: 198). This led to the selection of TISOL students and teachers in Manila, the Philippines as in the informants.

Data were collected through observation, interview, and document (Creswell, 2007: 129). The interview used in this study was unstructured to avoid limiting the informants to "yes" or "no" answers, ensure the responses are more accurate, and allow the informants to express themselves freely (Riduwan, 2007). Moreover, the data were analyzed using an interactive model which involves data reduction, presentation, drawing conclusions, and data verification.
(Sutopo, 2006: 120). This research was conducted for 3 months in several universities offering the TISOL program in Manila.

3 Results And Discussion

Clayton Alderfer (in Nashar 2004:42) defined learning motivation as an internal and external drive which causes a person to act or achieve certain goals, thereby, leading to the expectation of behavioral changes. The findings from the research conducted are stated in the following subsections.

3.1 External Motivation

The collection of data from TISOL students in the Philippines through observations and interviews was followed by data reduction. It was observed that the students in the TISOL level A1 class were curious as indicated in the following excerpt.

"When the learning program began, the instructor explained in general about Indonesia and Bahasa. Then, during the explanation, there was a student who raised hand to ask a question by giving a sign. The student (Respondent RO) asked the instructor whether Bahasa could be used anytime and anywhere in Indonesia. The instructor explained that Bahasa is a national language and the identity of Indonesia and this means every Indonesian can speak Bahasa. The student further explained that not everyone can speak Tagalog in the Philippines because every region has its own language ".

This means the possibility of using Bahasa Indonesia in all regions of the country is a motivation for students to learn the language, unlike the Tagalog language which is understood only in some places. The other motivations observed among the TISOL students in level A2 are indicated in the following excerpt.

"Student (Respondent DA) introduced himself using Bahasa and was quite fluent considering the fact that he is in level A2. He has lived in Malaysia for several years due to his parent’s migration and wanted to learn Bahasa because the language can be used in several neighboring countries such as Malaysia, Vietnam, Southern Thailand, and some regions of Brunei Darussalam".

This indicates the TISOL students are motivated to learn Bahasa due to its use in several neighboring countries outside Indonesia such as Malaysia, Vietnam, Southern Thailand, and Brunei Darussalam. Moreover, the following excerpt also indicates another motivation which leads the B1 TISOL student to learn the language.

"Two TISOL students at B1 level seemed to be debating why Indonesia after colonization era still holds firmly to its culture for so long. Another student from the Southeast Asia department explained to others that Indonesia was colonized only for its economy and it did not affect its cultural systems. Therefore, culture in Indonesia is still well preserved. “
This shows that the continuous preservation of culture in Indonesia is another motivation for the TISOL students to learn Bahasa. The students majoring in Southeast Asia understand the history and culture of Indonesia effectively and this increases their willingness to learn the language. It is important to note that the interview conducted with one TISOL student in level A2 showed that the motivation to learn Bahasa is also associated with the several similarities between its vocabularies and those of Tagalog. This significantly motivated the students to speak Bahasa because it becomes easier to learn as indicated from the excerpts of the interview as follows.

*Teacher: "Ma’am, why do you continue studying Bahasa up to level A2?"
Respondent (R): "Because many Bahasa and Tagalog words are similar, Ma’am. For example, you are welcome, door, umbrella, eye, ear. So, it’s easier.”*

### 3.2 Internal Motivation

The internal motivation of the TISOL students was also assessed and the opinion of SB respondent that was in the previous program at level A1 and also continued to level A2 is indicated in the following interview excerpt.

*Teacher : Ma’am, why do you continue studying Indonesian up to A2 level?*
*SB : Because I can work with Indonesian people. For example, I have visited Indonesia with my dance groups and also to other countries. I think that being able to speak in the country’s language is better.*

This means the opportunity to work with Indonesian people is one of the motivations for the students to learn Bahasa. Moreover, another A1 level respondent showed that the motivation was to acquire knowledge and meet new friends. This is observed from the following interview excerpt.

*Teacher : Ma’am, why do you want to learn Bahasa?*
*MJ : Because I want to acquire new knowledge and have new friends. Yes, learning Bahasa is fun* 

It was also discovered that the motivation is higher when the students already have friends from Indonesia as indicated by the following interview excerpt.

*Teacher : Brother U, why do you want to continue learning Bahasa?*
*U : Because I have Indonesian friends and I will visit them...?*
*Teacher : Visit them ...?*
*U : Yes, I will visit them later in April on holidays. So, I will speak Bahasa, yeah ...*

Further findings showed that the students are motivated to learn Bahasa in order to have the ability to communicate effectively with other people during their trip to Indonesia in order to make the trip more fun and easier. This is evident in the following interview excerpt.

*Teacher : Ma’am, why do you want to learn Indonesian?*
*JM : Because we want to travel to Indonesia and communicate while in the country.*
Teacher : *When will you go to Indonesia, Ma'am?*

*JM* : *As soon as I can speak Bahasa.*

The influence of the teacher on the learning process was found to be another motivation for the students. This is observed from the statement of Respondent N that participated in level A1 and remained consistent in terms of attendance as follows.

*Teacher* : "*Sir, what is your motivation to learn Bahasa?*"

*N* : "*Because I like the teachers, they are accommodating, good, and they make me understand the lesson effectively. I can speak Bahasa because my teacher is interested in teaching the language.*"

The findings showed that the motivation to learn Bahasa is related to the situations inside and outside the TISOL students in the Philippines and these were categorized as internal and external motivations, respectively. The external motivations include the common use of Bahasa throughout Indonesia despite the existence of different local languages in different regions of the country. This is, however, contrary to the situation in the Philippines where Tagalog which is the national language cannot be used in all regions of the country, thereby, making most of the Filipinos prefer using the English language to communicate.

Another external motivation is the possibility of using Bahasa in several neighboring countries such as Malaysia, Brunei, Thailand, and Vietnam due to the fact that Indonesia is one of the Southeast Asian countries with the largest population and culture. It also has attractive tourist attraction centers which are increasingly demanded by foreign tourists. Therefore, language becomes one of the factors harmoniously connected with Indonesia.

The continuous preservation of culture from the colonial period to the present time is another external motivation for the BIPA students in Manila to learn Bahasa. This was observed from the TISOL students interested in learning Indonesian culture because it was not affected by colonization. Moreover, it is also important to note that interaction is very vital to the process of learning a new language and culture (Rivers, 1987: 5) and this was discovered to be a great motivation for the students because learning the language is inseparable from the Indonesian culture which serves as the national identity.

The examples of the similarities in the vocabularies associated with Tagalog and Bahasa languages that triggered the TISOL students to learn Bahasa are stated as follows.
Table 1. Similarities in the vocabularies

<table>
<thead>
<tr>
<th>Indonesian</th>
<th>Philippine</th>
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<tbody>
<tr>
<td>aku</td>
<td>ako</td>
</tr>
<tr>
<td>payung</td>
<td>payong</td>
</tr>
<tr>
<td>batu</td>
<td>bato</td>
</tr>
<tr>
<td>sama</td>
<td>sama</td>
</tr>
<tr>
<td>pintu</td>
<td>pinto</td>
</tr>
<tr>
<td>kanan</td>
<td>kanan</td>
</tr>
<tr>
<td>mahal</td>
<td>mahal</td>
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<tr>
<td>anak</td>
<td>anak</td>
</tr>
<tr>
<td>murah</td>
<td>mura</td>
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</tbody>
</table>

The similarity is due to the fact that Tagalog is an Austronesian language which is included in the Malay proto-language, and the existence of several common words makes it easier for Filipinos to learn Bahasa.

One of the internal motivations associated with the learning of Bahasa is the opportunity to work with Indonesian people. This is based on the assumption of the students that learning the language will be useful in future employment. Another internal motivation is to gain more knowledge and have new friends and this increases when the students have friends from Indonesia. Moreover, the desire for security and comfort physically and psychologically when the students visit Indonesia for a tour is another motivation due to the belief that the mastery of the local language will make the whole trip easier.

The last internal motivation is associated with the ability of the teachers to make the students more interested in learning Bahasa. This is in line with the findings of Oliva (2009: 348) that lecturers in higher education need to have some expertise such as the ability to (1) speak, (2) understand words, (3) use correct grammar and sentence structure, (4) read students' facial expressions, (5) maintain interest, (6) pay attention to content with past and future experiences of students, (7) speak publicly, (8) deal with individuals causing disturbances, (9) stimulate thinking, and (10) organize thoughts. This signifies TISOL teachers which are university lecturers have an important role and their expertise can be assessed through the learning process and the skills acquired by the students after the learning process.

A previous study by Randi Ramiyana in 2016 focused on learning motivation for BIPA students, however, it is different from this present study in terms of the object of the research. Moreover, it used comic media to describe ways of improving the motivation to learn Bahasa for foreign speakers while this study describes different types of learning motivation possessed by TISOL students in the Philippines.
4 Conclusions

The findings and discussion showed that motivation is a process of maintaining the activities directed towards achieving certain goals and ensuring optimal development of one's abilities. The learning motivations of TISOL students in Manila were divided into two, internal and external. The results showed the possibility of adjusting the learning process to the motivation of the student in order to improve and ensure the sustainability of TISOL learning programs in Manila.

References
Having Distance Learning Means Getting Distance Knowledge for Higher Education Students in Indonesia

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Abstract. Distance learning has been becoming the new learning systems for the universities which always deal with offline class during the coronavirus outbreak. In this paper, the researchers aimed to analyze the disadvantages in distance learning. This study examined the distant experiences through the Indonesian college students’ points of view. The researchers used a qualitative research method. The research data were collected online through social media platforms i.e., Twitter and WhatsApp. They were in the forms of interviews in questionnaires related to students’ experiences engaging in distance learning. The subjects were 55 college students from various universities in Indonesia. The results were (1) the disadvantages of distance learning were various, (2) the obstacles that most experienced by the students were poor internet connection, and lack of internet data, and (3) the obstacles which they experienced led to the distance knowledge which really affected their learning processes. These conditions implicitly say that traditional classroom students have not been ready for the distance learning which brings them to distance knowledge and learning lost.

Keywords: Distance learning, disadvantages, obstacles, college students

1 Introduction

Due to the coronavirus outbreak, all social activities have been being shut down all over the world. Some countries were on lockdown, enacting a policy to start staying at home. Start from work, arise the term “work from home”. Not only affects adults, apparently, the Covid-19 outbreak that has been announced as a pandemic by the World Health Organization since March 11th, 2020, also affects students’ learning process. Face-to-face or traditional learning now has turned into a distance learning. According to Bušelić (2012) [1], distance learning is an education field that concentrates on the use of technology to deliver individualized teaching. Students are not physically present in the classroom as usual but "the process that occurs is access to learning when information sources (teachers) and learners are apart by time and distance. The outbreak of the COVID-19 most college students to deal with the distance learning and with hybrid one [2].
The distance learning is a separation learning activity between the teacher and students that restricts them to get courses on campus due to time and geographic obstacles [3]. Distance education emphasizes on the use of technology in teaching where the students and the teachers are not in the same place but at certain distance physically [4]. The existence of technology to support learning is not certain to bring its benefit and its impact on learning process is various [5]. The distance learning is progressively present in ongoing education and hence develops some institutions of education with the guarantee of the quality in distance learning. Distance learning substitutes the learning activity which initially needs a meeting first-handed between students and instructors, becomes meeting virtually through some applications [6]. The social media have been becoming substitute media in teaching wholeworld during the outbreak of the Covid-19 [7-9].

The distance learning [10-11] or distance education or remote learning [12] as a method to teach which is used at the moment, as an alternative method in this pandemic, may help instructors and students. In higher educations, lecturers have some access to dealing with some platforms of learning like Olat, Moodle, Edmodo, and Atutor to run and manage their learning systems [13-14]. Since there is no sign that the pandemic will halt soon, the education maintains the use of distance learning. The advantages of distance learning are (1) distance learning allows students to create their study plan. It means students can study calmly and comfortably while studying at home. eligibility is provided by classes taught over the internet, nearly all the time, and by using other media [15]. (2) approach to learning opportunity and education can be improved through distance learning, provides increased opportunities for updating, retraining, and private enrichment, improves the cost-effectiveness of educational resources, supports the standard and kind of existing educational structures, improves and strengthens capacity, (3) its usefulness because a lot of the technologies are approachable from home simply that the chance for students to participate on a personal basis whenever they want because of distance learning flexibility, (4) distance learning is additionally multisensory where there's a good type of materials which may be someone’s learning option, (5) distance learning can provide developed interactions with students. For introverted students who are too shy to ask questions in school will often “open up” when provided a chance to interact via e-mail or other individualized means [1].

Beside the advantages, the distance learning surely has some disadvantages for both instructors and students. It does not offer quick feedback. In a conventional classroom setting, a student's execution can be immediately evaluated through questions and casual testing, while in the distance learning a student needs to hold up for the response of his/her work by the instructors to counter it (Bušelić, 2012). The issues of distance learning are internal and external and include: (1) the standard of education itself, which is also a factor to be tackled in conventional education; (2) the hidden costs, which are also not adequately classified and may lead to future problems; (3) the misuse of technology, and this issue is important to educational institutions and students; (4) the attitude of instructors, which cannot use the technology related to distance learning and (5) the attitudes of students, who may be less dedicated than students of face-to-face learning [16].

From the previous research, Korolkov, Germanov, Languéva, Shevyakova, & Poskrebysheva, 2020 studied the advantages and disadvantages of distance learning in the Physical Culture Faculty, they reported that the major downside of distance learning was the absence of social interaction among educational participants. They continued that the major disadvantages of distance learning were the incapability of an instructor to take practical instruction. Practical learning fields such as pharmacy and physical education had a negative impact on the growth
of practical skills. Another related research stated by [17], the students spent more their time by using gadgets and technology, hence, they had less communication or interaction with both their teachers and friends, and shy students were not accustomed to talking in front of people live. They added that the students who did not learn the given materials were in high possibility, and the test process was not sufficient for them to absorb the materials, as well as to advance their ability of thinking.

Researchers have investigated the disadvantages and negative impacts on the distance learning in developed countries students. However, developing countries students in Indonesia have lack of experiences dealing with the distance learning. The teachers and the students are struggling hard to be successful in the online learning and the result of which is unsatisfactory and even is driving them to learning loss. This article focuses on the drawbacks of distance learning in universities in Indonesia during the outbreak. The research focus was on knowing the impact of distance learning on instructors and students which drive to the distance knowledge and learning lost. There were two questions that would be answered at the end of this article. The first question was what obstacles do the college students experience during the distance learning? The second one is what disadvantages do they get dealing with the distance learning?

2 Method

This study used a qualitative research method. Qualitative analysis focused on a variety of methods and provides an interpretive, naturalistic approach to the topic. It means that in their natural environment, qualitative researchers analyze various things, seeking to understand or feel, phenomena in the sense of meaning that people bring to them [18]. The research data were collected through online questionnaire with google forms which containing several questions related to the problems served in this study. The social media used to distribute the questionnaire were Twitter and WhatsApp. With the online questionnaire, there would be increasing number of the participants during the Covid-19 outbreak.

The subject of this study was the college students from different semesters and universities in Indonesia. They have been engaged in distance learning since the Covid-19 outbreaks striking the world. They have been applied for approximately 10 months or 2 semesters in the universities. The total of participants was fifty-five students. There were nine items in the questionnaire and equipped with participants' data, such as semester, department, and how long they have been engaged in distance learning. The questions lead to college students' complaints about distance learning. The responses of the interview were the explanation of their opinions related to the questions of distance learning.

Figure 1. shows that the highest percentage is the answer “Yes” with 93% of the college students’ lecturers providing materials during distance learning. Otherwise, there are only 7% of the students who answered “Not all lecturers”, which means only a few lecturers who do not provide the materials while having the distance learning.

3 Findings
Figure 2. describes the results of the chart of Q3, 56% of the college students answered “Not really” in understanding the materials given by their lecturers during distance learning. Then, the lowest percentage, 5% of the students claimed that they don’t understand the materials, hence they answered “No”. The students who answered “Yes” in understanding the materials given by their lecturers are only 38%.

Table 1. Students’ obstacles. They got them during distance learning

<table>
<thead>
<tr>
<th>Obstacles</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor internet connection</td>
<td>22</td>
<td>40%</td>
</tr>
<tr>
<td>Deadline</td>
<td>3</td>
<td>5%</td>
</tr>
<tr>
<td>Less focus</td>
<td>2</td>
<td>4%</td>
</tr>
<tr>
<td>Limited learning media</td>
<td>2</td>
<td>4%</td>
</tr>
<tr>
<td>Blackout</td>
<td>2</td>
<td>4%</td>
</tr>
<tr>
<td>Internet data</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Can’t understand the assignments given</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Unconducive environment</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Exhausted</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Survey problems</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Multiple reasons:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Poor internet connection and internet data</td>
<td>13</td>
<td>24%</td>
</tr>
<tr>
<td>● Poor internet connection and time corruption (by lecturer)</td>
<td>2</td>
<td>4%</td>
</tr>
<tr>
<td>● Poor internet connection and device problem</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>● Poor internet connection and blackout</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>● Poor internet connection, blackout, and internet data</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>● Poor internet connection, internet data, time management</td>
<td>1</td>
<td>2%</td>
</tr>
</tbody>
</table>
Table 1. gives a clear description of the obstacles that are often experienced by the college students during distance learning. From table 1, it can be seen that poor internet connection occupies the highest percentage, 22 students (40%) stated that the poor connection was the main problem in distance learning. 3 students (5%) answered deadlines of the assignments was the obstacle they faced in distance learning. 2 students (4%) stated the obstacle was less focus. 2 students (4 %) answered limited learning media. 2 students (4 %) stated blackout is the obstacle. 1 student (2%) stated internet data. 1 student (2%) stated that having obstacles in understanding the assignments. 1 student (2%) answered the unconducive environment. 1 student (2%) answered exhausted. 1 student (2%) answered survey problems.

The rest of the participants, 19 students, stated multiple reasons for having the obstacles during distance learning with poor internet connection as the main obstacle. 13 students (24%) stated that beside the poor internet connection, they also added internet data as the other obstacle. 2 students (4%) answered poor internet connection, and time corruption committed by the lecturers during distance learning. 1 student (2%) had problems with the internet connection and the device. 1 student (2%) answered poor internet connection and blackout. 1 student (2%) answered poor internet connection, blackout, and internet data. 1 student (2%) had a problem with internet connection, internet data, and time management.

Figure 3. describes that 55 participants gave their responses to the question 5. The college students, answered “Yes” for receiving the assignments from their lecturers during the distance learning. The percentage is 100% and there is 0% for the answer “No”.

Figure 4. Pie chart of the Q6 about students’ burdensome of the given assignments
Figure 4. indicates that the college students mostly answered “Yes” with 66%. It shows that the assignments given by the lecturers were burdensome for the students. There are 13 students added annotations which stated the assignments given were very burdensome, and 9 students stated that the assignments sometimes were burdensome. The answer “Tolerable” is 18% and there is only 16% for the answer “No” that thought the assignments from their lecturers were not burdensome for them.

Table 2. Students’ obstacles. The obstacles were faced when dealing with assignments given by lecturers.

<table>
<thead>
<tr>
<th>Obstacles</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can’t understand the materials</td>
<td>19</td>
<td>35%</td>
</tr>
<tr>
<td>Too many assignments</td>
<td>13</td>
<td>24%</td>
</tr>
<tr>
<td>Deadline</td>
<td>5</td>
<td>9%</td>
</tr>
<tr>
<td>Difficult to find resources for assignments</td>
<td>5</td>
<td>9%</td>
</tr>
<tr>
<td>Poor internet connection</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>Internet data</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Lack of motivation</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Difficult to communicate with lecturers</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Exhausted</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Miscommunication</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Doesn’t have PC/laptop</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Time management</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Environment</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>No obstacle</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Multiple reasons:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Too many assignments and tight deadline</td>
<td>1</td>
<td>2%</td>
</tr>
</tbody>
</table>

Table 2. shows the result of the students’ obstacles faced with assignments given by their lecturers during distance learning. The highest percentage is 19 students could not understand the materials (35%), 13 students answered they had been given too many assignments (24%), followed by deadline (9%), difficulty in finding valid sources for assignments (9%), had problem with poor internet connection (3%), lack of internet data (2%), lack of motivation (2%), difficulty in communicating with lecturers (2%), exhausted (2%), miscommunication (1%), did not have PC or laptop (2%), time management (2%), environment (2%), 1 student (2%) didn’t have obstacle, and 1 student (2%) who had multiple reasons; too many assignments and tight deadline.

Table 3. Students’ responses and reasons. They gave their opinions about their lecturers’ teaching methods during distance learning.

<table>
<thead>
<tr>
<th>Answer and reason</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>15</td>
<td>27%</td>
</tr>
<tr>
<td>● More relaxed</td>
<td>5</td>
<td>33%</td>
</tr>
<tr>
<td>● Not boring</td>
<td>5</td>
<td>33%</td>
</tr>
<tr>
<td>● More effective</td>
<td>3</td>
<td>20%</td>
</tr>
<tr>
<td>● Doing assignments at home</td>
<td>1</td>
<td>7%</td>
</tr>
<tr>
<td>● Similar with offline system</td>
<td>1</td>
<td>7%</td>
</tr>
<tr>
<td>Not really</td>
<td>18</td>
<td>40%</td>
</tr>
<tr>
<td>● Depends on the lecturers</td>
<td>9</td>
<td>50%</td>
</tr>
<tr>
<td>● Can’t understand the materials</td>
<td>4</td>
<td>22%</td>
</tr>
<tr>
<td>● Not effective</td>
<td>2</td>
<td>11%</td>
</tr>
<tr>
<td>● Lecturer only giving assignments without teaching</td>
<td>2</td>
<td>11%</td>
</tr>
</tbody>
</table>
Table 3. displays the description of Q8. 15 students (27%) stated that they were satisfied with their lecturers’ teaching methods during distance learning. While 18 students (40%) stated that they were not really satisfied, it could mean sometimes they were satisfied but sometimes they were not. And then, 22 students (40%) stated that they were not satisfied with the learning methods. The students who answered that they were satisfied with the teaching methods stated various reasons. More relaxed (33%) and not boring (33%) were the most stated reasons why they were satisfied. Followed by more effective (20%), doing assignments at home (7%), and similar with offline system (7%). Depends on the lecturers (50%), could not understand the materials (22%), not effective (11%) and lecturers only giving assignments without teaching (11%) and more flexible but could not understand the materials (6%) were the reasons stated by the students who answered they were not really satisfied. Not effective (50%), could not understand the material (23%), prefer online learning (14%), lecturers always used video conference as learning media but the student have poor internet connection (5%), could not get the learning purpose (4%) and too many assignments (4%) were reasons stated by the students with “not satisfied” answers.

Table 4. Students’ reasons. Below things made them stressed during distance learning.

<table>
<thead>
<tr>
<th>Answer and reason</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>30</td>
<td>55%</td>
</tr>
<tr>
<td>● Too many assignments</td>
<td>11</td>
<td>37%</td>
</tr>
<tr>
<td>● Unconducive learning environment</td>
<td>3</td>
<td>10%</td>
</tr>
<tr>
<td>● Tight deadline</td>
<td>2</td>
<td>7%</td>
</tr>
<tr>
<td>● Can’t interact with others</td>
<td>2</td>
<td>7%</td>
</tr>
<tr>
<td>● Low grades</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>● Difficult to understand the material</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>● Multiple reasons:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Too many assignments and can’t interact with others</td>
<td>3</td>
<td>10%</td>
</tr>
<tr>
<td>● Too many assignments and tight deadline</td>
<td>2</td>
<td>7%</td>
</tr>
<tr>
<td>● Too many assignments and poor internet connection</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>● Too many assignments and can’t understand the material</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>● Too many assignments and time corruption by the lecturer.</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>● Too many assignments, internet data, poor internet connection, can’t understand the material</td>
<td>2</td>
<td>7%</td>
</tr>
<tr>
<td>Not really</td>
<td>9</td>
<td>16%</td>
</tr>
<tr>
<td>No</td>
<td>16</td>
<td>29%</td>
</tr>
</tbody>
</table>

Table 4. provides the description of Q9. From the table, it can be seen that more than half of the students (55%) are stressed during distance learning. While 16% stated that they were not
really stressed (sometimes they were stressed but sometimes they were not) and 29% stated that they were not stressed. The students who answered that they were stressed had various reasons. The highest percentage of the reason is 37% which is too many assignments, followed by unconducive learning environment (10%), tight deadline (7%), can’t interact with others (7%), low grades (3%), difficult to understand the material (3%), and there are 10 students (33%) who answered with multiple reasons with the description as written in the table.

<table>
<thead>
<tr>
<th>Answer and reason</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance learning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Can be closer to family</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Face-to-face learning</td>
<td>51</td>
<td>93%</td>
</tr>
<tr>
<td>- More effective</td>
<td>40</td>
<td>78%</td>
</tr>
<tr>
<td>- Can understand the material better</td>
<td>3</td>
<td>6%</td>
</tr>
<tr>
<td>- Can socialize with others</td>
<td>2</td>
<td>4%</td>
</tr>
<tr>
<td>- Less assignment</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>- Multiple reasons:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Can socialize with others and not be as tired as online learning</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>- Can socialize with others and save expenses for internet data</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>- Can socialize with others and more effective</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>- To prevent coronavirus and more effective</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Can’t choose (Neutral)</td>
<td>3</td>
<td>5%</td>
</tr>
</tbody>
</table>

Table 5 shows that the participants mostly chose face-to-face learning (93%) instead of distance learning (1%). However, there were 3 participants (5%) who were neutral (could not choose among them). 1 student who chose distance learning stated that can be closer to family. The reasons from the students who chose face-to-face learning mostly were more effective (78%), followed by can understand the materials better (6%), can socialize with others (4%), and to prevent coronavirus (2%). For the multiple reasons, can socialize and not be more tired (2%), can socialize and save expenses for internet data (2%), can socialize and is more effective (2%), and to prevent coronavirus and is more effective (2%).

4 Discussion

These results indicate that there are some obstacles that Indonesian college students face during distance learning in this pandemic situation. There are also drawbacks of distance learning. The students who mostly chose distance learning over face-to-face learning experienced various obstacles. The obstacles can lead to various drawbacks that in the end, will affect students’ learning process. We highlight the most common obstacles that often appeared in distance learning and their drawbacks.

The obstacles that the students face the most are related to the internet which are poor internet connection and internet data. From the result that the researchers found, these obstacles have the highest percentage among the other obstacles. Internet connection is the most important thing in online learning. As Salac & Kim, (2016) state that citizen’s motivation on newest
information will decrease due to poor internet connection. This theory will also be the same as the case of college students. With poor internet connection as their obstacle, they will have lack of motivation to participate in online classes. Internet data is also an obstacle that is related to the internet. Internet data also plays a big role in online learning, especially for students that have no Wi-Fi at their home. Without it, students won’t be able to participate in online classes. With these internet obstacles as their biggest obstacle in online learning, it prevents students from having good learning experience in distance learning.

Social obstacles are also the obstacles that college students face during online learning. The social obstacles that students face are lack of social interaction with others and an unconducive environment. Due to coronavirus pandemic, it is difficult for students to have real life social interaction among students and teachers. With lack of social interaction, it will be difficult for students to have motivation and achievement outcomes. As Ellwood & Abrams (2018) found in their research that students’ motivation and achievement outcomes will increase if they have real life social interaction. The other social obstacle that college students face is an unconducive environment. From the responses that the researchers got, the unconducive environment is related to the students’ home environment. It is difficult for them to learn while they are at home due to many distractions. In order to have effective teaching and learning experience, students need to have a conducive learning environment (Gbadamosi, 2017). Social obstacles that college students face can lead to bad students’ motivation, achievement outcomes and ineffective learning experience but it is inevitable during this coronavirus pandemic.

The other obstacles that college students face are related to the lecturers learning system. These obstacles are too many assignments but tight deadlines and students can’t understand the material given. From the responses, the researchers found that lecturers give many assignments to the students with tight deadlines and every lecturer gives them assignments with the deadlines at the adjacent time. Students also find it difficult for them to understand the material given since some lecturers only give them assignments without explaining the material. With these obstacles it will be difficult for students to encourage themselves to learn as they did in face-to-face learning.

From the obstacles, there are two drawbacks of distance learning that the researchers found which are distance learning is not effective and students experienced stress. Students who face poor internet connection and internet data obstacles find it difficult to participate in online learning and it makes the learning not effective as they did in face-to-face learning. With the lack and difficulty of social interaction, the online learning process is also not effective. As Dharmaraj (2015) stated that in distance learning, students need to wait for the lecturer to comment on their assignments and cannot directly get the feedback. Having to wait for the feedback makes online learning not effective, especially in time. Students also can’t understand the material since the difficulty of interaction they are facing. As seen in the findings, more than half of the college students (55%) claim that they are stressed during distance learning. The number of the assignments and the tight deadline given by the lecturer also causes stress to students. Too many assignments that the students must finish make it difficult for them to focus and do the other activities and that leads to stress. The tight deadlines also worsen their stress, one of the examples that resulting high level of stress on students is tight deadlines (Vogel & Schwabe, 2016). The drawbacks of online learning that the researchers found from the responses of the respondents are based on their experiences. However, another research needs to be done in order to get the better result.
5 Conclusion

In conclusion, from the result of the research, students face many obstacles which are internet obstacles, social obstacles, and obstacles that came from lecturers’ learning system. Other than obstacles, the ineffectiveness of social learning and the stress that the students experienced also affect students’ learning experience and the students’ outcomes. But even though online learning has many disadvantages, for now it is the only possible way for Indonesian college students to learn during this pandemic situation. The obstacles and drawbacks during distance learning cannot be avoided but it can be minimized if the lecturers and students can find the solution of their problems so that the learning process will be more convenient for them.

6 Acknowledgments

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References


Supporting Components of Behavior Science Literacy for Elementary Students in Adiwiyata’s School

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Abstract. Scientific literacy is seen as one of the 21st century skills that must be developed in students. The importance of developing scientific literacy behavior among students is expected to be a solution in increasing understanding in applying scientific concepts to solving problems of everyday life. Currently Adiwiyata school is one that accommodates the formation of scientific literacy behavior. The purpose of this study was to describe the supporting components in shaping scientific literacy behavior in elementary school students at Adiwiyata School. This research uses descriptive qualitative type with the researcher as the key instrument. Research data collection was carried out in three steps, in-depth interviews, participant-based observation, and documentation of activities. To ensure the accuracy of the data, researchers analyzed using the Miles and Huberman model, while ensuring the validity of the data triangulation was one of the techniques used. The results showed that there were two supporting components in shaping the science literacy behavior of elementary school students in Adiwiyata schools, namely the human and non-human components. These two components are key in shaping students' scientific literacy behavior at Adiwiyata school.

Keywords: Science Literacy, Adiwiyata’s School, Supporting Component Science Literacy.

1 Introduction

Scientific literacy or better known as scientific literacy is one of the 21st century skills that the current generation must have [1], [2], [4], [5]. The strong reason for the importance of scientific literacy as one of the skills of the 21st century is due to changes in world order which not only require a generation that is rich in theory but a generation that has the skills to apply scientific skills to serve as problem solving or problem solving in everyday life [6]–[9]. In a simple concept, scientific literacy essentially refers to the basic knowledge that students need to understand science, so that students can use this information to make decisions about personal, civil, and economic matters [10], [11]. Several definitions related to scientific literacy are explained by several scientists, namely scientific literacy is seen as the capacity to use scientific knowledge to identify various questions and problems to the ability to analyze and draw conclusions based on the concepts of knowledge that have been obtained [12]–[14]. In other words, scientific literacy refers to an understanding of skills in processing scientific knowledge based on cognitive abilities to be used and applied as a problem solving tool in everyday life.
The importance of developing scientific literacy in elementary school students is a strategy to maintain growth spikes and prepare a demographic bonus in terms of increasing application capabilities, as well as determining the human development index in Indonesia [4], [5], [14]. That way, it is clear that scientific literacy is seen as one of the abilities that must be built in the education system, especially at the primary school level. The importance of developing scientific literacy is also based on several problems related to students' scientific literacy skills in the world arena which continues to decline. Dilangsir from the Program for International Student Assessment (PISA) in 2015 - Now scientific literacy skills are still below the world average [15]–[17]. This indicates that the quality of learning and education in our country still requires maximum effort and superior programs to solve this problem. Problems related to low scientific literacy skills were answered by the presence of the Adiwiyata program launched by the government with the main objective of creating students with an environmental culture [4], [14], [18]. This effort was launched with the aim of providing understanding and inculcating attitudes and behaviors on how to empower nature in such a way that it can provide opportunities for each student to create a sustainable living environment. Thus, Adiwiyata is a strong reason for the government's move to form a generation that is information literate and has the initiative to make the environment a basis for sustainable living.

In several studies, Adiwiyata School has specific specifications in carrying out its objectives as a school with environmental care standards. The results of preliminary observations indicate some of the advantages of Adiwiyata school, including the shady school environment that allows it to provide comfort for students in carrying out learning. Besides that, cleanliness is also a highlighted part of Adiwiyata school, so it is very familiar to see students throwing garbage in its place. These initial findings are reinforced by several research results that Adiwiyata schools with environmental care programs prioritize cleanliness and school beauty as support and comfort for children in learning. Therefore, this specification attracts the attention of researchers to carry out research in Adiwiyata schools, especially in the formation of scientific literacy behavior. Thus, it is clear that the purpose of this study is to describe the supporting components in shaping the scientific literacy behavior of elementary school students in Adiwiyata schools.

### 2 Method

The research method used descriptive qualitative. This type of research was selected based on the problem criteria that will be presented in the form of a description of words or findings in the field based on written information and oral information from people who are research subjects [19]. The informants of this study were selected using a snowball sampling technique consisting of the headmaster, teachers, education personnel, students, and the canteen keeper and school cleaners. The data collection process in this study was carried out in the form of in-depth interviews, participant observation, and documentation study related to the problems and research findings. To support accurate data collection, researchers are used as a key instrument. Data analysis was carried out by referring to the Miles and Huberman model which consists of data reduction, data display and conclusion drawing. In order for the research results to be accurate and valid, the researcher uses triangulation techniques and extends the research time by increasing the persistence of the research findings that have been collected.
3 Results and Discussion

The supporting components for the formation of scientific literacy behavior found in SD Adiwiyata X Padang City are special findings in this research study. Findings related to the supporting components in shaping students' scientific literacy behavior are summarized in the results of interviews, observations, and documentation of activities. So that the researchers specifically summarize it into two categories, namely the human component and the non-human component.

3.1 The Human Component for Behavior Science Literacy in Adiwiyata’s School

The human component is a supporting instrument based on individuals or people around the school who play a role in shaping students' scientific literacy behavior. This finding is based on the results of interviews conducted by a number of informants and the results of observations while at school. Several findings related to the human component in shaping scientific literacy behavior, such as interviews conducted by curriculum representatives and teachers in schools, explained that the formation of scientific literacy behavior was supported by teachers as facilitators in providing guidance during the learning process.

“The process of inculcating scientific literacy behavior is usually carried out by teachers during the learning process, for example by inviting children to practice making traditional medicines from various medicinal plants in the school environment as first aid.”

The above statement, also mentioned by a number of students at the school, that they justify if the teacher always invites them to solve problems related to science in the learning process through teacher guidance.

“Usually the teacher always guides us to solve problems related to science through the introduction of plants that can be used as traditional medicine, we have also used this medicinal plant to treat a friend who had a nosebleed.”

In addition to teachers, students who are fostered as little doctors also help teachers become peer tutors in practicing some scientific processes that can be done by solving them based on scientific literacy. Such as decomposers, making medicinal plants into traditional medicines, as well as reprimanding students who litter, and being a monitoring team for students who use water excessively. Specifically, it is depicted in the following diagram.

![Diagram](image)

Fig. 1. Human’s Component for Behavior Science Literacy in Adiwiyata’s School
**Teacher.** Data related to the role of the teacher as a supporting component in shaping students’ scientific literacy behavior in Adiwiyata Elementary School can be seen from its function which is more focused on its role as a facilitator with guidance, direction, and giving examples carried out by students as the data obtained shows that the formation of scientific literacy carried out by The teacher is more directing to the learning process and directing the habituation of environmental care behavior by applying the functions and uses of various learning components obtained from the school environment, so that this is an example for students in applying and applying science principles in solving everyday problems.

**School’s Student Doctor.** This component is used as a reference by peers in assisting the teacher to re-explain the information and knowledge obtained. So that the little doctor is used as a substitute for the teacher in introducing the various properties of various plants in schools as an alternative to first aid medicine and has the function of supervising and imposing sanctions for friends who throw garbage inappropriately. So that the presence of a little doctor becomes an instrument to provide education related to the introduction of plants and their functions to peers. In addition, the little doctor also provides education related to the practice of making decomposers which will be socialized to friends at school.

**Education Personnel.** All individuals who enter the school area at SD Adiwiyata are a supporting component for the formation of scientific literacy behavior. School employees are interpreted as individuals who work in the school area other than teachers and school principals, in this case the cleaners, canteen keepers, and school guards. Their involvement in shaping scientific literacy lies in serving healthy food and in an orderly way to the cleanliness of the school environment. The contribution generated from this component lies in the explanation related to healthy and suitable food for consumption, so that students are trained and accustomed to choosing snacks that have health standards for consumption by the body.

3.2 **The Non-human Component for Behavior Science Literacy in Adiwiyata’s School**

The non-human component becomes the second subject in shaping scientific literacy behavior. This component is defined as objects in the vicinity of the school that provide an effect on the formation of scientific literacy behavior. It is simply seen in the following picture.

![Fig. 3. Non-human Component for Supporting Behavior Science Literacy in Adiwiyata’s School.](image-url)
Science Knowledge Slogan. The findings of this component are in the form of slogans linked to various scientific knowledge that are stuck on the walls of every corner of the school. The slogan which contains knowledge is held not only as part of adiwiyata, but rather leads to the inculcation of attitudes and providing information and additional insights in the scientific field which are sometimes missed by the teacher's explanation, thus the slogan of science knowledge is often used by children and teachers as a learning medium in developing knowledge and shaping student attitudes.

Library. The library is one of the places for students to find various information from available source books. Apart from being a place to read, the library is also a means for students to solve problems given by the teacher. This means that the existence of a library has a positive impact on children's knowledge of information. So that this will add to their insight in applying one discipline to solve everyday problems.

Adiwiyata Specific Environment. Adiwiyata is a title for schools that have environmental care programs. The specific environment owned by Adiwiyata school is a garden and various plant specifications that have scientific names and explanations for their functions, family medicinal plants (TOGA), greenhouses, and decomposers. This specific environmental component provides students with understanding and knowledge so that they can apply the knowledge they acquire in everyday life. This can be seen in the research data that the Adiwiyata specific environment provides learning experiences for students on how to care for plants, utilizing plants as medicine and first aid for accidents, and utilizing waste as compost so that it will add insight to students regarding their knowledge of the world of science and its functions.

The findings of the components supporting the formation of students' scientific literacy behavior at the Adiwiyata Mandiri school, one of which was the finding of many slogans related to various scientific knowledge that were plastered on the walls in every corner of the class. Procurement of slogans scattered in every corner of the classroom walls of course has a specific purpose. This means that the slogan is not only part of Adiwiyata but rather to inculcate attitudes and provide information through slogans as a daily learning medium that is seen by students, so that this will add understanding to students' knowledge and learning experiences. In particular, the purpose of procuring slogans and images related to the appeal as described above, was taken based on some data from interviews and field findings summarized in field notes. This is, as the data from interviews with informants.

“Non-human components, which consist of libraries, slogans, and adiwiyata specific environment, are generally used as tools for the learning process. So that the message of scientific literacy and the importance of having scientific literacy behavior is formed. In addition, this specific presentation helps to make it easier to instill and shape students' scientific literacy behavior.”
Figure on slogan and written messages from the slogans include scientific knowledge, appeals to save electricity and water, LIBAS (Waste-Free Environment), P3 (Dyes, Preservatives, and Sweeteners), as well as being smart consumers, appeals to wash hands before eating, as well as various images other knowledge. The pictures of scientific knowledge slogans displayed along the walls of the classroom tell about the metamorphosis of a butterfly as it is contained in the content of science learning in grade IV. The pictures of other scientific knowledge slogans that can be seen in schools are pictures of the occurrence of the rain cycle. This picture tells about the flow or cycle of rain. This material will also be found in the content of science subjects in grades IV and V. Several other slogans such as knowledge about P3 (Preservatives, Sweeteners, Dyes) are also visible on the walls of the school.

Procurement Slogans scattered in every corner of the classroom walls have a specific purpose. This means that the slogan is not only part of Adiwiyata but rather to inculcate attitudes and provide information through slogans as a daily learning medium that is seen by students, so that this will add understanding to students' knowledge and learning experiences. In particular, the purpose of procuring slogans and images related to the appeal as described above, was taken based on some data from interviews and field findings summarized in field notes.

Based on several findings that have been described related to the supporting components of scientific literacy, essentially directs to one main focus, namely the conveying media. In the concept of social learning theory proposed by Bandura, it is stated that behavior formation is an association of behavior, environment, and person. This understanding can be explained that the supporting component in the formation of behavior is an environment that will have an impact on the birth of behavior, while behavior is the resultant or the result of the accumulation of roles between the surrounding people and their environment [13], [20], [21]. This is in line with the results of the study that the human and non-human components have a big share in the process of shaping scientific literacy behavior. The human component which refers to individuals who enter the realm of school organizations becomes a model as well as a facilitator in displaying and exemplifying good things to students in cultivating scientific literacy behavior. The example provided by the human component shows the association of observational learning theory which believes that people can learn by observing other people and by doing things that are learned.

The description above gives the meaning of the human component which includes teachers, little doctors, and school employees who are companions, coaches, and facilitators of students in helping to understand science literacy behavior. The presence of the human component provides its own and as a model to be emulated by students in schools [22]–[24]. The reflection of scientific literacy behavior displayed by this supporting component is an example in providing knowledge, helping friends who are sick, and maintaining cleanliness as part of environmental care. So if you think of a little doctor plane as a flight attendant / a who will help facilitate the understanding of his colleagues, school employees are delivering healthy food, while the teacher is a pilot who will steer the direction of the plane according to the coordinates of the direction taken.
The second component as a support in shaping scientific literacy behavior is non-human which includes the slogan of scientific knowledge, libraries, and the specific Adiwiyata environment. This component focuses on the learning messages contained in each of its functions. In the cone of learning that was initiated by Dale, he argued that 50% of students' experiences were derived from what they saw and heard [13], [25]. This description makes it clear that the maximum use and utilization of slogans with teacher guidance can increase 50% of the student learning experience. In a psychological review, the slogan of scientific knowledge becomes one of the media that causes changes in learning behavior because of the learning experiences obtained based on the results of their vision. Dahar also expressed the same opinion that the information obtained as a way to solve problems is closely related to constructivism theory that the construction of personal knowledge through individual interaction with the environment is important as an effort to internalize difficult understandings, problems, and processes [13], [20], [26]. This opinion is a strong reason that the information that students get through the slogan of science knowledge, libraries and the specific Adiwiyata environment provides additional experience and knowledge in solving everyday problems.

Environmental education which is attached to the main objective of the Adiwiyata program in schools is not only in the form of theory, but rather as a cultural practice. To accommodate this goal, Adiwiyata specific environment exists as a means of supporting the formation of an environmentally friendly culture. Some opinions suggest that a school environment that looks more natural leads to a lot of knowledge that students carry, great experiences, and a deeper aesthetic sense [13], [26]–[28]. In addition, the Adiwiyata specific environment can be used as a learning laboratory for students as a component in shaping scientific literacy behavior.

4 Conclusion
The conclusion of the research is the components that form scientific literacy in Adiwiyata schools basically include two things, namely the human and non-human components. The human component is an individual who is in the scope of the school who participates in upholding school principles and rules, including teachers, little doctors, and school employees. Meanwhile, non-human components are instruments, tools, or objects that have a role in the process of adding students' insights and understanding related to scientific literacy, which includes the slogan of scientific knowledge, libraries, and the specific adiwiyata environment. These two components are key findings that can help develop students' scientific literacy behavior in schools. In addition, students' understanding in solving problems related to science is also obtained through these two components.

References


Student-Centered Learning and the Climate Crisis

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Abstract. This paper has three parts. The first part briefly reviews the meaning of student-centered learning. The second part looks at some of the causes of the current climate crisis. The third and longest part of the part offers suggestions as to what education institutions, teachers, and students can do to address the climate crisis.

Part 1 – Student-Centered Learning

Student-centered learning and teacher-centered learning and are best seen as a continuum, not as an either/or dichotomy. Table 1 highlights some of the characteristics on which student-centered and teacher-centered differ.

Table 1 – Characteristics Along a Continuum on Which Student-Centered Learning and Teacher-Centered Learning Differ

<table>
<thead>
<tr>
<th>Student-Centered Learning</th>
<th>Teacher-Centered Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers talk less</td>
<td>Teachers talk more</td>
</tr>
<tr>
<td>Students makes some decisions about what and how to study</td>
<td>Teachers make all decisions about what and how to study</td>
</tr>
<tr>
<td>Students regularly talk to peers</td>
<td>Students seldom talk to peers</td>
</tr>
<tr>
<td>Students do some assessment</td>
<td>Teachers do all assessment</td>
</tr>
<tr>
<td>Teachers sometimes also learn</td>
<td>Teachers teach; they do not learn</td>
</tr>
<tr>
<td>Learning focuses on real life</td>
<td>Learning focuses on what is in textbooks and other materials</td>
</tr>
</tbody>
</table>

Many methodologies fit under the student-centered learning umbrella. These methodologies include cooperative learning [1], multiple intelligences [2], extensive reading (Extensive Reading Foundation, n.d.), problem-based learning [3], positive education [4], higher-order thinking [5-6] and self-directed learning [7]. These student-centered methodologies overlap and can complement each other.

Student-centered learning fits with an overall paradigm shift in society toward more power for the people who previously were at or near the bottom of power hierarchies. For example, in the past two hundred years, females have gained more power and education. Slavery has been greatly reduced. Minorities have more rights, as do blue-collar workers. This trend toward equality is also reflected in education, with more power for students, as well as more
power for teachers in the overall running of educational institutions. Part 3 of this paper examines how this power might be used to address the climate crisis, but first Part 2 looks at causes of the climate crisis.

**Part 2 – Causes of the Climate Crisis**

The climate crisis is by no means a new concept. It refers to the growing accumulation of greenhouse gases in the Earth’s atmosphere which can cause a range of difficulties including rising sea levels, more extreme weather events (such as droughts, storms, and floods), higher temperatures, and worsening harvests. Some scientists have for decades been warning about the climate crisis. However, even now, some scientists, governments, companies, and individuals continue to ignore or only pay lip service these dangers.

Many forces have caused the climate crisis, with human actions accounting for the majority of them. In recognition of human impact, some scientists call our current geologic age the Anthropocene [8]. The previous geologic age was the Holocene, which began about 11,000 years ago. The prefix *anthro* means human, and this geologic age which started approximately in the previous century, is called the Anthropocene because humans now have the greatest impact on the environment.

We are causing the climate crisis. Among our crisis-causing actions are:

1. Burning fossil fuels for energy, including for transportation and manufacturing. Fossil fuels release carbon dioxide (CO2), a greenhouse gas, into the atmosphere.

2. Cutting down forests to grow food and build roads and buildings. Trees soak up CO2; fewer trees means more CO2.

3. Using animals for food. Animals release the greenhouse gases methane and nitrous oxide. Also, animals are an inefficient food source, because they have to each eat many kgs of plants to produce just one kg of meat.

The climate crisis exacerbates other problems. Many of these problems are highlighted in the United Nations’ Sustainable Development Goals [18], commonly known as the 17 SDGs. The SDGs were initiated in 2015, and the hope is to make significant progress toward their attainment by 2030. The SDGs are shown in Figure 1.
SDG 13 directly involves the climate crisis, but as stated previously, the climate crisis impacts all the goals. For instance, due to the climate crisis, droughts and flooding are more frequent, thereby lowering crop yields which worsens poverty, SDG 1, and increases hunger, SDG 2. At the same time, children suffering poverty and hunger have poorer health, SDG 3, and face difficulty attending school, SDG 4. Fortunately, just as people caused the climate crisis, so too can we solve it. This is discussed in Part 3.

Part 3 - What Education Institutions, Teachers, and Students Can Do To Address The Climate Crisis

Educators have begun to address the climate crisis. An outstanding example of these efforts is Maley and Peachy (2017) [9] a free online book of edited lesson plans, one for each of the 17 SDGs. The book begins with a poem by Maley who argued strongly for teachers to step beyond the confines of their syllabus to include the climate crisis and other vital issues and habits. Here is that poem. The lines in regular font are the voice of someone who believes teachers, in this case English teachers, should limit themselves to a narrow view of their role.

A Poem

Teacher

What do you do?

I’m a teacher.

What do you teach?

People.
What do you teach them?

**English**

You mean grammar, verbs, nouns, pronunciation, conjugation, articles and particles, negatives and interrogatives …?

**That too.**

What do you mean, ‘that too’?

**Well, I also try to teach them how to think, and feel – show them inspiration, aspiration, cooperation, participation, consolation, innovation**

… help them think about globalization, exploitation, confrontation, incarceration, discrimination, degradation, subjugation, … how inequality brings poverty, how intolerance brings violence, how need is denied by greed, how –isms become prisons, how thinking and feeling can bring about healing.

Well I don’t know about that. Maybe you should stick to language, forget about anguish. You can’t change the world.

**But if I did that, I’d be a cheater, not a teacher.**

**THE END**

**UN Environment Program’s Environmental Education Objectives**

The United Nations Environment Program’s six objectives for environmental education (UNESCO—UNEP, 1976) can serve as a framework for student and teacher involvement in tackling the climate crisis. The six objectives are explained below.

1. **Awareness** of climate change involves knowing that climate change is taking place and what the effects of climate change might be. Students and teachers need to ask what is done now and what else can we do to raise people’s awareness?

2. **Understanding** the whys and hows of climate change, including humans’ role in climate change. What is done now and what else can we do to increase people’s understanding?

3. **Concern**, i.e., do people care about others who may be more affected by a particular environmental issue? In the case of climate change, large pieces of land may soon disappear under the oceans if climate change proceeds to result in rising water levels. What is done now and what else can we do to heighten people’s concern?

4. **Skills**, i.e., do students have the skills necessary to address environmental issues. Here, all languages play a key role, as well as the ability to critically listen, read, and view
language produced by others. How could we help students develop and utilize skills to slow climate change?

5. The ability to evaluate different “green” proposals. Do they really protect the Earth, or are they just greenwashing? What is a green proposal that is genuine, not greenwashing?

6. The last, but maybe most important, UN objective advocates that teachers, students, and others involved in education, such as school canteen staff, go beyond thinking about the environment and actively participate in protecting it. What is done now and what else can be done to increase people’s participation?

Ideas for Participation in Slowing Climate Change

What can students and teachers do to meaningfully participate (1897) in the worldwide movement against climate change? Below are some general suggestions regardless of where people live.

1. Convince governments, institutions, and corporations to change. While individual change is also useful, change on a larger scale has more power.

2. Reduce food from animals. As mentioned earlier, animal-based foods are one of the largest sources of human-produced greenhouse gases [10].

3. Use the relative pronoun ‘who’ with animals in order to treat our fellow animals as the thinking, feeling beings they are [11].

4. Support karung gunis, i.e., waste material collectors. These people may have low social status, but they should be honored as climate crisis warriors.

5. Similarly, we should buy second-hand goods.

6. Along the same lines, we should support green businesses. How to know if a business is green? This is where evaluation ability comes into play.

7. Even better that supporting existing green businesses is to create new ones.

8. On the academic front, we can organize and attend online conferences, webinars, etc. Online events are open to more people and create much less environmental damage. These events can be for younger students.

9. People who study and teach languages may wish to learn about ecolinguistics, the application of language sciences to better understand our interaction with the environment, e.g., http://ecolinguistics-association.org/

Two Indonesia Examples of Student-Centered Learning for Participation
By giving students more power and by bringing the curriculum closer to students’ lives, student-centered learning fits well with participation in addressing the climate crisis. As Maley noted in his poem, he tries to teach students “how to think, and feel – show them inspiration, aspiration, cooperation, participation, consolation, innovation.” Lie et al. (2002) [12] is a collection of chapters written by teachers from various Indonesian universities explaining how they include participation in environment-friendly actions in their classes for non-English majors.

One of the chapters deal with supporting karung gunis. The ideas below come from the chapter with more ideas added.

1. Learn about second-hand goods and the circular economy, via reading, podcasts, and TED Talks.
2. Interview karung gunis and translate the interviews to English.
3. Use social media, etc. to convince people to help and thank karung gunis.
5. Create a dance and song about second-hand products.
6. Spend half a day accompanying a karung guni and journal about the experience.

Another way to support the SDGs, especially SDG 6, Clean Water and Sanitation, is an Indonesia-based project called Safe Water Gardens (SWGs): https://safewatergardens.org. Many homes in rural Indonesia and other third-world countries lack sanitation systems. SWGs not only safely dispose of human waste, they also use that waste to fertilize gardens. This not only saves children’s lives, SWGs also boost families’ income and reduce air pollution that worsen greenhouse gas emissions.

Local and overseas universities – UMRAH, Universitas Gadjah Mada, National University of Singapore, and Eindhoven University of Technology (Netherlands) have been involved in the planning and monitoring of the SWGs project. Furthermore, students in primary and secondary schools have built SWGs with their own hands as well as contributing funds. During the pandemic, these students have watched SWGs being built, learned from the families, and contributed ideas about which plants might be the most nutritious and profit-making to grow in the gardens. Figure 2 shows the key components of a Safe Water Garden, and Figure 3 shows a group of students celebrating the construction of a Safe Water Garden in a village in Bintan, Indonesia.
Conclusion

To conclude, student-centered learning provides a way to unleash the power of students to protect the future of humans and other animals on this planet, as we attempt to slow and even reverse the climate crisis. Let us please remember the plea of this young person from a photo taken from the Internet.
References


The Online Learning Process During the COVID-19 Pandemic Period in terms of the teacher's point of view

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Abstract. This study aimed to determine the online learning process from the teacher's point of view. The object of this research is 66 teachers spread across the Riau Islands Province with various educational units. This research instrument is an open questionnaire consisting of 5 indicators translated into ten questions and a closed questionnaire. This research is included in descriptive analysis. The research results all teachers have carried out the stages of the learning process starting from the use of technology, delivery of materials, learning activities, use of media, and the assessment process. Special attention is needed to learning activities because not all learning activities can be carried out during the learning process during the pandemic. The research concludes that most teachers have used technology; although material delivery cannot be maximized, it is assisted by giving assignments. Not all learning activities can be carried out. Most teachers have used several learning media, and teachers can carry out the assessment process despite all the limitations during online learning during the covid 19 pandemics.

Keywords: Online learning process. Covid-19 pandemic, teacher’s point of view

1. Introduction

The emergence of the covid 19 outbreak in all corners of the world has changed in all fields. The pandemic impacted the community's economic sector that, from the financial aspect, had an alarming effect at the time and spread to the education aspect [1]. The government has issued many policies and circulars to regulate how the learning process can occur during the pandemic. The implementation of learning changes, usually students learn face-to-face in class, turning into online learning using applications. To regulate the learning process during the pandemic, the government has issued circular letter No. 3 of 2020 regarding preventing Covid 19 in education units. Such conditions cause the world of education to make changes and innovations in the learning process. Innovation in learning is done through online learning (on the network) or online.
Today the learning process in Indonesia is still online learning. In its implementation, online learning is not as easy as imagined. Many problems and obstacles arise. These obstacles are both from the infrastructure supporting online education, the state of students, teachers, and parents. Barriers to infrastructure, especially the availability of electricity and internet access specifically for 3T areas. Based on the Ministry of Education and Culture data, 18% of primary and secondary education units do not have internet access, and about 3% of education units do not have electricity. The obstacle teachers face is the ability to use technology in online learning. Not all teachers master various learning platforms as the primary media to support online learning. Teachers face is the ability to use technology in online learning. Not all teachers master various learning platforms as the primary media to support online learning.

The obstacles faced by students are economic problems. Because of these obstacles, many students cannot participate in online learning because students do not have cellphones or laptops and cannot buy quotas.

Although learning is still online, the learning process should be appropriate and the same as offline learning. The difference is the implementation, and face-to-face learning are now online. Usually, teachers and students meet in classrooms. Now teachers and students meet virtually using an application. Learning that should be done face-to-face has turned into online learning. Online Learning, online or distance learning, which aims to meet educational standards by utilizing information technology using computers or gadgets that are interconnected between students and teachers as well as between students and lecturers so that through the use of technology, the teaching and learning process can still be carried out correctly.

Circular number 4 of 2020 concerning the implementation of education policies in the emergency period of the spread (Covid-19), the second point is that the learning process from home is carried out with the following conditions: 1. Learning from home through online learning to provide a learning experience for students. 2. Learning from home can be focused on life skills education regarding the pandemic. 3. Learning activities and tasks for learning from home according to individual interests and conditions. Online learning is a new challenge for teachers, which makes them have to master online learning media to carry out learning activities and be creative in the learning process so that learning objectives can be achieved optimally (Mantra, 2020).

Teachers play a significant role in the learning process. During the learning process, there is a reciprocal relationship between teachers and students. Teachers must have creative and innovative abilities in carrying out learning, hoping that the learning provided can develop students' potential optimally. During the pandemic, in delivering learning materials, teachers need to use appropriate learning strategies and methods. Teachers also need to implement the learning process by government rules and policies regarding learning during the pandemic. At this time, teachers are required to have the competence to support students during this pandemic. Still, competence is tough to do when online learning is implemented because there will be many problems in changing conditions, one of which is a lack of understanding from students in their Learning. Through the various sources above, it is necessary to study how teachers carry out the learning process in the online period in the Riau Islands region. So the purpose of this study is to analyze the online learning process during the COVID-19 pandemic.
2. Methodology

This research is a descriptive study, and the sample is teachers for all levels of education in the Riau Islands province. The total model is 66 teachers spread across the region. Closed and open questionnaires are instruments used in research with ten closed questions and two available questions. The research instrument was also strengthened by interviews conducted to find out the teacher's opinions about the implementation of online learning. Data analysis was carried out descriptively by analyzing the answers to the questions that the teacher had filled in. The study results would be presented, and diagrams made and then described in as much detail as possible.

3. Results and Discussion

The results and discussion of this study can be seen from the following explanation, which is described in detail with a narrative and analyzed for each item of the questionnaire that the teacher has filled out.

3.1. Use Technology

During the learning period, due to the pandemic of 66 teachers who have filled out the questionnaire, it was found that 89% of teachers have used technology in learning. Although more than half of teachers have used technology, 2% of teachers have not used technology in education. This can be seen in the following figure 1.

![Figure 1. Technology Utilization](image)

Based on the diagram above, it is clear that teachers have used technology in learning during the pandemic. This statement follows what was stated by Salsabila et al. (2020, 194). Technology plays a significant role in learning, especially in the Covid-19 pandemic situation. Technology also provides convenience to teachers and students in conducting distance learning, making it easier to assess students. Although it is not done face-to-face, utilizing various platforms such as Google document as a medium in conducting online discussion forums, submitting exams through google
forms, and procuring quizzes through websites or applications. This is in line with the research results which states that after Covid-19, institutional education has wholly depended on e-learning infrastructure facilities such as the internet, electronic devices, applications, etc. LMS.[5] The current online learning period requires teachers to master technology, and teachers must be innovative towards developing media. Teachers must master and update the methods applied because learning methods during a pandemic are different from pre-pandemic methods if teachers are creative in choosing the appropriate method. It is hoped that students will not get bored.[6] So for the use of technology, the teacher has done things that follow the needs of learning and learning situations that do require technology in education.

3.2. Duration of learning time

During online learning, the time that the teacher uses to carry out the various learning processes is outlined in the following figure 2.

![Time Allocation for one meeting](image)

**Fig 2.** Time Allocation for one meeting

It can be seen from the diagram above that from the three specified answer choices and can be seen that the teacher stated that during online learning, used only half of the time used. When learning offline, Some teachers say that the time needed for the learning process is only a quarter of an hour. You can imagine how the teacher has to design learning in such a short time, and the teacher must also think about it so that the students can absorb the subject matter well in such a short time. In everyday learning conditions with the available time, students cannot grip the material well and with limited time. The lack of understanding of the material and the short time to complete the task causes students to find it challenging to do the tasks given. Lack of learning time raises anxiety when conditions return to average students cannot learn new material well because they do not understand the previous material.[7]

The limited learning time also influences the delivery of material during the learning period of the pandemic. This is illustrated in the diagram of the results of distributing questionnaires that have been filled in by the teacher, which can be seen in the following Figure 3.
Fig 3. The Integrity of the material being taught

The questionnaire results showed that during the pandemic learning period, the delivery of material could be done only partially. Students were given the task of completing the delivery of material that was not optimal. No one could deliver material for some teachers and only told the student to read books and do assignments. Even during the pandemic, some teachers could provide the material in its entirety because some of the teachers provided material using learning videos. This condition is very influential in terms of the limited material that can deliver; not all material being produced, of course, will reduce students' absorption of the material. Suppose the teacher completes the understanding of the material by giving assignments. This causes not all students to complete the task well because students do not understand and understand the material. Less conducive learning situations during online learning cause teachers to have difficulty transferring the subject matter to students, then students have difficulty understanding the subject matter, especially calculation material.[8] So for the learning process related to the short duration of learning can deliver not all material. Hence, teachers need to think of other techniques so that material that has not been conveyed can be given in different ways, including providing assignments and making learning videos for students. For this, it is necessary to pay attention to all parties to continue motivating and supporting teachers so that teachers continue to try to deliver the material despite the limited learning time.

3.3. Implementation of learning activities

To determine the implementation of learning during the pandemic consists of preliminary activities, core activities, and closing activities. The performance of learning activities during this pandemic can be seen in the figure 4 below.
Data obtained from the questionnaire show that most teachers cannot carry all learning activities out and only core activities. Some teachers said that all learning activities could be carried out in their entirety. Few of the teachers stated that there were no learning activities that could carry out because the teacher only gave assignments. If the learning activities cannot be carried out consisting of preliminary activities, core activities, and closing activities, the teacher cannot fully implement the learning strategy. If can do only the core activities, the teacher cannot know the students' initial readiness and interest in learning. Closing activities are also not carried out so that teachers cannot measure the achievement of learning objectives. Teachers also will not know the completeness of learning in one basic competency.

3.4. Utilization of learning media during the pandemic

Use of learning media is significant in the learning process. Through learning media, teachers can increase students' motivation, interest, and enthusiasm for learning. During a pandemic, the use of teaching media must also be a priority. Through the figure below, it can be seen the use of teacher learning media during the pandemic.
During online learning, the teacher has used learning media. This can be seen from the diagram above. It turns out that most teachers have used various media during the learning process. Some teachers use only one medium, and some do not use media at all. The teacher does not use the press because the duration of learning is short, and the teacher does not have time to use the media. When viewed from this condition, the teacher stated that they could not increase students' learning motivation to the maximum because the use of media that had not maximized was an obstacle for the teacher to convey the material. If the material is not delivered optimally, the learning objectives are also challenging to achieve. This can be seen from the opinion of Siti Khulsum.[9] The use of learning media is systematic and innovative to achieve practical learning objectives and is adapted to the learning characteristics to be carried out.

A variety of teaching media and educational platforms have emerged and encourage and demand the professionalism and skills of teachers in carrying out teaching tasks to students. The benefits are not only felt by teachers but also by students and parents who can directly feel the benefits of teaching media. Learning media and educational platforms may be an alternative solution in learning for the continuity of learning in every academic unit.[10] The use of teaching media applied by teachers during this pandemic can be seen from the following figure 6.

![Fig 6. Technology Used](image)

The figure above shows that most teachers use the Zoom, Google Meet, and Google Classroom applications. This third use is the teacher's choice. There are several advantages of using zoom. First, zoom can be downloaded for free and allows up to 100 participants. Second, you can schedule lessons through the Schedule feature. Third, you can record and save videos while learning is taking place. Fourth, Zoom Cloud Meeting can work on Android, iOS, Windows, and Mac devices that can replace.[11] While google meet is an option, this is supported by the research results which state that with google meet, teachers can see and ensure students' readiness and activeness by activating on camera the teacher can ensure students are attentive and ready to participate in learning.[12]

Although teachers have used several media in their learning, some teachers' opinions in the outermost areas of online learning significantly interfere with the learning process. The limitations of the internet network cause teachers to not be able to teach optimally, and students cannot learn
effectively. Another rule is that most of the students do not have cell phones. Another opinion is that online learning causes students to be lazy to study. Their cell phones are used for playing, not for education. Through this explanation, we can conclude that although teachers have used technology in their learning by using several non-paid applications that are easily accessible and easy to use, obstacles are still found in their implementation, especially for teachers who teach in remote and outer islands. For the use of media, the teacher also understands and understands the learning process. The teacher must try to use various media to overcome the delivery of material with the media used and selected.

3.5. Assessment Process During the Pandemic.

3.5.1. Assessment during the learning

The assessment process in the 2013 curriculum, which is still valid today in education, prioritizes assessing attitudes, knowledge, and skills. The processed results of the questionnaire obtained through the answers from the teacher are shown in the figure 7 below.

![Fig 7. Implementation of aspects of assessment, assessment of knowledge, attitudes and skills](image)

During the learning process during the COVID-19 pandemic, there were still teachers who did not carry out the three assessments. For knowledge assessment, almost all teachers carry out this assessment in their learning. Still, cannot carry evaluation of the skills out because the teacher's reason is the limited ability of teachers to carry out simple practicum using simple equipment available in the environment. Even though according to May et al, the tools and materials needed for the implementation of certain practicums have been prepared, which are the easiest to find in the surrounding environment, this is done so that teachers can still assess aspects of student skills even with remote observation.[13] The collection of practicum performance results can usually be in the form of photos or videos. Through this opinion, teachers can still conduct skills assessments even though the conditions are still pandemic.

Meanwhile, the teacher can still carry the attitude assessment through the timeliness of students to enter online learning. The teacher can also assess the teacher's responsibility for completing the
tasks given. However, the questionnaire results show that there are still teachers who only make one assessment in learning.

3.5.2. Daily pandemic

Tests during knowledge assessment are carried out by teachers in the form of tests and other conditions. The implementation of difficulties during the learning process also needs to consider allocating time for collecting these assignments. If the teacher does not provide a test, the teacher can also conduct an assessment in other forms. To find out the implementation of the evaluation in online learning can be seen in the following figure 8.

![Graph showing daily form of assessment](image)

**Fig 8. Daily Form**

Through the diagram above, we can see that almost all teachers give daily tests to students; very few teachers use oral tests. Very few teachers provide other forms of assessment. The teacher grants daily trials to measure the achievement of learning objectives. The examinations carried out can also be used to measure individual mastery and classical mastery of students. The results of the analysis from the questionnaire show that the teacher has carried out daily assessments. For daily inspections, teachers can be categorized as good in carrying out daily checks.

Daily tests that students have completed are continued with daily test corrections. The process correction carried out by the teacher for the teacher's implementation of the correction process during this pandemic can be seen in the following figure 9.

![Graph showing correction process](image)

**Fig 9. Correction Process**
From the results of data analysis seen from the diagram above, almost all teachers corrected students’ daily tests and returned the correction results to students. Even though in a pandemic condition, the teacher has carried out the task as well as possible, the pandemic is not an obstacle for the teacher to carry out the mission of correcting students' daily tests, as feedback the teacher also returns the results of the test to students. This is following the suggestion put forward in improving student learning outcomes. A teacher should return student test results to help students develop their abilities to succeed in improving student learning outcomes.[14]

The return of test results will be better if the teacher has given a value or comment. If students are informed about the daily test results, they will focus more on materials that are still not mastered by students. If the student's daily test results are not returned, the student does not know the material concept that is still not understood. Still producing test results is a beneficial process, especially for students. Students can directly find out their level of ability in mastering the material taught by the teacher and will spur students to improve learning outcomes further.[14] Teachers who do not provide feedback in the form of corrections to student work papers are detrimental and damage students' learning motivation. Teachers who are lazy to correct student work make students wait. It is not uncommon for students to become annoyed with the teacher, even charging the teacher for their work papers. Finally, some students tend to lose the desire to see the value they get from the results of the exercises they have done.[15]

3.5.3. Giving assignments during the pandemic

Assigning assignments during online learning is still done, considering that the delivery of material cannot be maximized. Giving lessons is an alternative to support increasing student understanding of the material. The opinion expressed by Agus that giving homework assignments is currently a strategy in distance learning that requires students to study at home in learning natural sciences, students do more experiments or practice accompanied by parents and teachers provide material to be reviewed. And done by students during the pandemic, students cannot practice or experiment with classmates like in groups.[16] The assignment by the teacher can be seen in the following figure 10.
Most teachers have given assignments to students; only a few teachers rarely do not give lessons. The teacher offers daily assignments as a means of obtaining student grades. Giving assignments online can run smoothly and stably if assisted by an internet network connection to access gadget devices.[17] Based on the research results for giving this assignment, the teacher has carried out his main task very well because to help students understand the material presented in a limited time, giving assignments is an alternative so that students can understand the subject matter well.

4. Conclusion

Based on the research findings, it concluded that during online learning during the covid 19 pandemics, from five indicators that developed into ten questions, it was finished that: The teacher used technology during education. In a short time, I could deliver some of the material, some of it with assignments. Only core activities can be carried out; preliminary and final activities cannot be carried out optimally. The learning media used by teachers vary, even though some teachers only use one medium. Knowledge assessment, daily tests, and assignments can be carried out. Barriers to online learning experienced by teachers who teach in remote and outermost areas are 1) not all students have cellphones, 2) unavailability of electricity, 3) complex internet networks, 4) the inability of parents to provide quotas.

Acknowledgments

Acknowledgments at conveying to the 66 teachers in the Riau Islands Province who are happy to help the authors obtain data for the purposes of this research.

References

Development of HOTS (Higher Order Thinking Skills) Test Instrumen in the Maritime History Course based on Riau Local History

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Abstract. The purpose of this research is to develop HOTS base test instrumen in the Maritime History Course based on Riau Local History. The method used in this research is research and development (R&D). The research data was obtained in two ways, namely, interviews and literature. After the data is obtained, it is continued with the preparation of HOTS-based learning evaluation instruments. The type of instrument used is a HOTS-based learning outcome test. The instrument development began from the preparation of the test items to the examination of items by material experts. Items that are declared valid will be retained and invalid items will be revised/discarded. The next step is to test the reliability of the items. Base on the result of Validity and Reliability of test instrument that has been developed, indicate that the test instrumen can be use to measure the learning outcome of Maritime history course in the Departmen of History Education University of Riau.

Keywords: Development, HOTS, Maritime History, Local History, Riau

1 Introduction

Teaching and learning activities at the college level are part of the student process in studying certain subjects. Each course has a goal or competence that students are expected to possess after completing lecture activities in that course. To find out whether or not the teaching objectives have been achieved and the quality of the teaching and learning process that has been implemented, it is necessary to conduct an assessment or evaluation of student learning outcomes. The benefit of evaluation in learning is to find out how far the students’ understanding is related to the material that has been taught. In addition, it can also determine the quality of the learning program that has been implemented by analyzing the parts that are still weak and must be improved. The form of evaluation can use test data collection techniques developed in the form of learning outcomes evaluation instruments.

The instrument can be in the form of a test or a non-test. Tests can be in the form of objectives and essays, while non-tests can be in the form of observation sheets or questionnaires, attitude scales, match lists, and graded scales. Objective tests can be in the form of short answers, true-false, matchmaking, and multiple-choice with various variations: ordinary, relationships between things, complex, case analysis, graphs, and table figures. A description test which is also called a subjective test can be in the form of a free, limited, and
structured description test [1]. Furthermore, for the preparation of test or non-test instruments, a teacher must refer to the guidelines for the preparation of each type and form of tests or non-tests so that the instruments compiled meet the requirements of a good instrument, at least the basic requirements of a good instrument, namely valid (legitimate) and reliable (can be trusted) [2].

The development of evaluation instruments is generally applicable to all courses in universities. Among them are maritime history courses. This course has an academic contribution for students to know the maritime world of Indonesia in general and the East Coast of Sumatra or the area that used to be the territory of the Malay Sultanate. The scope of the study is from prehistoric times to contemporary. Learning Maritime history has an important function as remembering the identity of the Indonesian nation as the largest archipelagic country in the world is closely related to maritime life. Although the dominance of the sea as a natural factor is so great it is not always in line with the development of its culture. Indonesian culture is currently far away from marine or maritime culture, Indonesian culture now tends to lead to a cultural pattern that is only oriented to land, namely a culture characterized by characteristics such as a lack of knowledge about the sea compared to land, the dominance of the economic orientation of the land over the sea, meaning a system of marine mythology that often reduces people's courage to go to sea and the view that the sea is a dividing medium, not a link [3]. The study of maritime history is inseparable from the study of local history [4]. Local history itself can be understood as the study of people's lives or especially the community of a certain surrounding environment in the dynamics of its development on various aspects of human life. The geographical boundaries of this local history can be in the form of ethnic residences that are at the level of the second and first-level administrative areas but can also be limited to one city or even a village [5][6]. This is to strengthen students' understanding of local history within the framework of Indonesian national history. Local history explains in detail historical events that are not accommodated in national history. Understanding local history strengthens the identity of a heterogeneous and multicultural Indonesian nation and is spread over several regions. As a multicultural country, Indonesia is required to always be anticipatory and responsive to phenomenal forms that can damage this harmony [7]. By studying local history, students will gain more knowledge related to Indonesia's socio-cultural diversity [8]. Indonesia's diversity which is represented through many local cultures must always be explored and maintained and integrated into all aspects of life, including education and teaching. These local cultures, if successfully strengthened and maintained, will at the same time strengthen Indonesia's national identity [9]. Local history also plays a role as a knowledge that strengthens understanding related to events that occur on a national historical scale. It is hoped that by understanding local learning, students will not only act as spectators and connoisseurs of the past but also have the potential to become historical actors in the present and the future, although only limited to their respective localities [10]. Local history holds the main position because it deals with the immediate environment and culture of students. This local history material becomes the basis for the development of students' personal, cultural and social identities. It can be seen that students first get to know the culture in their surrounding environment compared to those who are far away in areas outside their area. So we need a developer that starts from local things to create pride in the surrounding environment [11].

To introduce and attract students' interest in local historical events that occur in the area they currently live in, it is necessary to develop HOTS questions to measure and determine the extent of students' understanding of maritime history courses in local history studies in Riau Province. HOTS is very important to be integrated into the learning and assessment process.
because it can hone thinking skills that are very important for students. These thinking skills include critical thinking skills, creative thinking, and problem-solving. These three abilities are part of 21st-century skills that need to be instilled to prepare students to face technological advances and globalization because in the 21st-century students will be dealing with the flow of digital and information technology. For this reason, students need to be trained to become good thinkers. If students when dealing with the large flow of information are not able to think intelligently and openly, they will be unable to sort out which information is good and correct. Therefore, the role of educational institutions from basic to higher education is to instill these skills. Teachers and lecturers as the frontline in efforts to educate students are required to be role models and guides.

Embedding HOTS into learning assessments can be applied through the creation of learning outcomes assessment questions that are based on HOTS. According to Wahidmurni [15], the steps for compiling HOTS questions are the same as the steps in preparing non-HOTS questions, only the emphasis is on the existence of contextual stimuli with the expected behavior in HOTS questions. In non-HOTS questions, a stimulus is also needed, but more questions are prepared without using a stimulus. The steps for preparing the HOTS questions are as follows:

a. Analyzing KD and KI
b. Compile a grid of questions.
c. Determine contextual and interesting stimuli
d. Write question items according to the question grid
e. Determine the answer key or scoring guidelines (rubric)

2 Methodology

The method used in this research is research and development (R&D) which adopts the 4-D (Four-D) development model. With research stages, namely, define, design, develop, and dissemination [16]. In this study, the 4-D model was modified so that the research stages were carried out until the development stage. Broadly speaking, research and development consist of three stages, namely:

1. Define: at this stage, a literature study is carried out by analyzing the material from both courses (Maritime History and Local History) to find which parts of the material can be integrated into learning outcomes assessment instruments
2. Design: at this stage the selection of the form of the instrument test to be made and the process of compiling an integrated maritime history assessment instrument grid for Riau local history based on High order Thinking skills.
3. Develop: This stage includes the preparation of narratives about learning outcomes tests, as well as conducting trials to determine the validity and reliability values of each of the questions that have been prepared.

This research was carried out at the Department of History Education Program, University of Riau Indonesia, carried out from June to October 2021. The data collection process that will be used to determine what material will be developed into learning outcomes assessment questions and the process of compiling the assessment instrument grid, is carried
out by two ways, namely the process of literature study and interviews. The interview process was carried out to lecturers who are in charge of local History and maritime history courses to obtain lecture materials which include teaching modules, lesson plans, and syllabus. After the material is obtained, it is continued with a literature study which is carried out by analyzing the material for each course, syllabus, and lesson plan. This activity is carried out to find similarities in teaching materials so that the process of integrating local History materials which will be developed into test questions to assess the learning outcomes of maritime history courses can be carried out properly and appropriately.

To ensure that the items for assessing learning outcomes that have been made can be used to measure the level of success in learning outcomes for students taking maritime history courses, it is necessary to test the validity and reliability of the learning outcomes instruments that have been prepared. Validity describes the extent to which the measuring instrument (test) measures what it is intended to measure [17]. Establishing the validity of a test or instrument test is very difficult, especially because psychological variables are usually abstract concepts, such as intelligence, anxiety, and personality. These concepts have no concrete reality so that their existence must be inferred through indirect means [18].

Reliability shows the stability and consistency of a measurement instrument and can help estimate the goodness of measurement so that data consistency or accuracy is obtained. Broadly speaking, there are two types of reliability, namely internal and external reliability [19][20]. A test can be said to be reliable if it always gives the same results when tested on the same group at different times or on different occasions. The reliability carried out in this study is internal reliability. The calculation of the reliability of the instrument in this study uses KR20, which is a test used to answer true and false (dichotomies) about historical material where the test score is given is 1 for respondents who are correct and a score of 0 for respondents who answer incorrectly. The HOTS-based Riau history learning evaluation instrument will be declared suitable for use if it has succeeded in getting the reliability test results with the minimum criteria sufficient and the maximum criteria very high.

3. Finding and Discussion

Following the research method used to produce valid assessment instrument items, namely 4-D. So here are the steps that have been taken. In the first stage, a preliminary analysis was carried out to describe the condition of the lectures which included the composition of the syllabus and lesson plans as well as the books that became learning resources in maritime history and local history courses, this process was carried out to find similarities in teaching materials so that the integration process of local history materials will be developed into test questions to assess the learning outcomes of maritime history courses. In the process of analyzing the syllabus and lesson plans, four local history materials were obtained which would later be used as guidelines for preparing questions. The four sub-materials of local history include 1) Natural conditions and geographical location of the Riau region, 2) Political-Economic Life of the Ancient Kingdoms in the Riau region, 3) Dutch colonialism in the Riau region and its implications for local kingdoms, 4) The establishment of Riau Province and its role in the progress of the Indonesian economy.

After the materials taught in the Riau history course are obtained, the next step is Design, which includes the process of compiling the assessment instrument grid and writing instrument items. As found in the first stage, a grid of Maritime history learning outcomes assessment instruments that are integrated with Local History based on High Order Thinking Skills has been compiled as follows:
Table 1. HOTS based Maritime History assessment grid integrated with Local History

<table>
<thead>
<tr>
<th>Course</th>
<th>Indikator</th>
<th>Number of question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural conditions and geographical location of the Riau Region</td>
<td>5 question</td>
<td></td>
</tr>
<tr>
<td>Politics-Economy of Ancient Kingdoms in Riau Region</td>
<td>10 question</td>
<td></td>
</tr>
<tr>
<td>Dutch colonialism in the Riau region and its implications for local kingdoms</td>
<td>10 question</td>
<td></td>
</tr>
<tr>
<td>Formation of Riau Province and Its Role in Indonesia's Economic Progress</td>
<td>5 question</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>30 question</td>
</tr>
</tbody>
</table>

The next step is to develop learning outcomes assessment questions that are guided by the grid that has been prepared previously. The form of questions that will be developed are multiple-choice questions and are based on high-order thinking skills. This means that the questions made are prepared based on the rules for the preparation of the HOTS questions, which must have a stimulus. Stimulus is the basis for understanding information. In the context of HOTS, the stimulus presented must be contextual and interesting. A stimulus can come from global issues such as issues of information technology, science, economy, health, education, infrastructure, and others. A stimulus can also be sourced from problems that exist in the environment around the school such as culture, customs in the area, or various advantages found in certain areas. A good stimulus contains some information/ideas, which is needed to develop the ability to find relationships between information, transfer information, and be directly related to the main question [22].

The next step is the process of testing the instrument as well as measuring the level of validity of each item statistically. In this case, the process of testing the instrument was carried out on students of the History education study program at FKIP, Riau University who had passed the Maritime History course. The item validity process will use the Point biserial Correlation statistical formula with the help of the Microsoft Excel program. The results of the validity of the items can be seen in the following table:
From the results of the analysis of the validity of 30 items that have been compiled. It turned out that there were six questions that were declared invalid. The six questions are questions number 1, 9, 17, 21, 23, and 28. The results of the calculation of the validity of the six questions show the value of \( r_{count} \) which is below the threshold of \( r_{table} \). Therefore, these six questions were deleted and could not be used to assess student learning outcomes.
After the valid questions are obtained, the next step is to calculate the reliability of the valid questions. Reliability is calculated using the KR20 formula. Here is the KR20 calculation formula:

\[
    r_{ii} = \frac{k}{k-1} \left[ 1 - \frac{\sum pq}{\sigma^2} \right]
\]

\[
    r_{ii} = \frac{34}{34-1} \left[ 1 - \frac{7.30}{39.34} \right] = 0.838
\]

Calculation of the reliability of the instrument produces a value of 0.863. This value is then compared with the reliability table to find out the resulting reliability criteria.

<table>
<thead>
<tr>
<th>rValue</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.800 - 1.000</td>
<td>Very High</td>
</tr>
<tr>
<td>0.600 - 0.799</td>
<td>High</td>
</tr>
<tr>
<td>0.400 - 0.599</td>
<td>Sufficient</td>
</tr>
<tr>
<td>0.200 - 0.399</td>
<td>Low</td>
</tr>
</tbody>
</table>

Based on the interpretation table above, it can be stated that the instrument questions for the assessment of learning outcomes for maritime history courses that are integrated with local history based on HOTS have very high reliability.

The results of the analysis show that the HOTS-based questions that have been developed have passed the requirements as questions that can be applied to measure student learning outcomes in maritime history courses. Of the 30 questions that were compiled, 24 questions were obtained which were declared valid. This shows that the 24 questions are able to measure what is being measured. Furthermore, the results of the reliability analysis show that the hots-based questions that have been compiled have very high reliability. This means that the HOTS questions that have been compiled can be trusted to produce a stable score, relatively unchanged even though they are tested in different situations.

4. Conclusion

Based on the results of the research, the following conclusions were obtained: (1) the final product in this research is a HOTS-based Maritime History learning outcome test instrument that was integrated with Riau local history to measure student learning outcomes in the Maritime History course. The test instrument is in the form of a HOTS test item consisting of 24 multiple-choice questions. The question instrument was developed through three development steps, namely: (1) Define, (2) Design, and (3) develop. Based on the statistical validity test of the 30 questions that have been compiled, 24 items were declared valid. And based on the results of the reliability test, the HOTS-based learning evaluation instrument
that has been developed has very high-reliability criteria. Based on some of the results above, it can be concluded that the HOTS-based learning outcome test instrument that has been developed is appropriate to be used to measure student learning outcomes in the Maritime History course at the University of Riau.

Acknowledgments.

The test instrument that has been developed in this study, is based on local History Materials taught in the department of the History Education University of Riau, and may not be suitable to be applied in another department of history education outside Riau Province.

References


Coastal Pre-service Chemistry Teachers’ Ability to Design Maritime Context-based Learning

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Abstract. The study examined the ability of coastal pre-service chemistry teachers (CPCT) in designing maritime context-based learning. A case study approach was used to conduct the analysis in the University of West Coast of Bintan Island, Indonesia. Learning designs prepared by 21 CPCT in their 3rd year were evaluated by a rubric categorized into three parts with eight criteria subdivisions. The study found that CPCT was halfway in providing a connection between maritime daily life contexts and chemistry concepts. Moreover, CPCT had difficulties generating questions based on the required context in enhancing a maritime-based project. This result indicated that a systematic program was necessary for improving CPCT ability in designing maritime context-based learning.

Keywords: pre-service teacher, maritime, context-based.

1 Introduction

A Coastal pre-service chemistry teacher (CPTC) is required to integrate chemistry learning in relation to a maritime context. This integration aims to indirectly improve the quality of learning for students in the coastal area and appreciate the maritime region’s potential. Consequently, applying the chemistry concept in learning will improve the students’ intrinsic motivation [1], conceptual understanding [2] and reduce students’ alternative concepts [2]. There is also a strong correlation between classroom learning and societal fields [3], and this is aimed at improving the students’ knowledge since they are able to relate the acquired chemistry concept with real-life situations around the maritime region.

Some of the Context-based chemistry learning designs that have been used before include the context of sport [4], human health [5], gas [6], and car engines [7]. Unfortunately, there is little concern given to the explicit maritime contexts in the design of chemistry learning. There is also limited information from the literature review on the pre-service chemistry teachers’ ability to integrate maritime context-based learning designs. Previously, studies have been conducted to measure the ability of prospective physics teachers to make context-based assessments [8]. Therefore, this study aims to investigate the ability of CPCT to design maritime context-based learning.
2 Methods

A case study technique was used in assessing the ability of CPCT in designing maritime context-based learning. It was carried out in the University of West Coast of Bintan Island, with a population target of 21 CPCT in 3rd year who were assigned to create maritime context-based learning in four weeks. Designs prepared by CPCT were evaluated by a rubric adapted from Stolk et al. [9], consisting of eight Design Strategies. They were categorized as not adequate (NA), partially adequate (PA), and adequate (A). A descriptive method was used to analyze the data presented in frequencies and percentages, as shown in (Table 1).

3 Results and Discussion

Results on 21 coastal pre-service chemistry teachers’ ability to prepare learning designs based on maritime contexts are illustrated in Table 1.

<table>
<thead>
<tr>
<th>Part of CBL</th>
<th>Design Strategies</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Context-based introduction</td>
<td>Provide for a connection with chemistry concepts</td>
<td>1 11 9</td>
</tr>
<tr>
<td></td>
<td>Connect to students’ daily lives</td>
<td>0 10 11</td>
</tr>
<tr>
<td></td>
<td>Generate numerous questions</td>
<td>10 4 7</td>
</tr>
<tr>
<td></td>
<td>Select questions that are practically feasible</td>
<td>21 0 0</td>
</tr>
<tr>
<td>Chemistry concepts</td>
<td>Start with an explanation of chemistry concepts</td>
<td>8 6 7</td>
</tr>
<tr>
<td></td>
<td>Zoom into more detailed chemistry explanations</td>
<td>4 12 5</td>
</tr>
<tr>
<td>Context-based inquiry projects</td>
<td>Have a strong connection with the previous chem. explanations</td>
<td>20 1 0</td>
</tr>
<tr>
<td></td>
<td>Projects should be practically feasible</td>
<td>19 2 0</td>
</tr>
<tr>
<td>Total Frequency</td>
<td></td>
<td>83 46 39</td>
</tr>
</tbody>
</table>

Based on the results from Table 1, most of the CPCT had applied the chemistry context as an introduction to their learning and had successfully related it to the students’ daily life. However, some CPCT were using the principle of “what to know” in Context-Based Learning (CBL)[10]. This was identified from those CPCT who analyzed questions that arose from the students and were related to the context displayed at the beginning of learning. Therefore, developing feasible questions was critical in designing context-based learning projects.

The majority of the CPCT had given brief explanations of chemical concepts related to the context under evaluation. Most of the teachers used the group discussion method with the help of a worksheet and others sought deeper explanations from textbooks in elaborating the context-based chemistry concepts. However, some designs didn’t have a clear explanation in relation to the concept being explained.

The study results highlighted that majority of the CPCT had not developed a context-based inquiry project. Additionally, the few that had designed the project it was not based on an elaborate concept. Therefore, using context as an introduction at the beginning of learning and the development of an inquiry project was a new invention in designing CBL-based learning.
Furthermore, the study found out that CPCT needed improvement in their ability to design maritime context-based learning. Several teachers’ professional development strategies could be adapted, such as frameworks that entailed setting a context in class, performing a new teaching role, and teaching content [11]. Moreover, an additional project was designed, including teaching an educative context-based unit and designing an outline of a new context-based unit [12], as illustrated in Table 2.

<table>
<thead>
<tr>
<th>No</th>
<th>Context</th>
<th>Content</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Coastal iron corrosion</td>
<td>Electrochemistry</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>Extracts of coastal natural resources as acid-base indicators</td>
<td>Acid base</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Preserving food with salt</td>
<td>Macromolecule</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>“Asam Manis” for Cermai fruit</td>
<td>Acid base</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Mangrove charcoal burning</td>
<td>Hidrocarbon</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Microplastics in coastal waters</td>
<td>Polymer</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Al and Cu on the ship, Mg from the sea</td>
<td>Period 3-4 Element</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Sea purification with green mussels</td>
<td>Colloid</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Betel nut</td>
<td>Buffer</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Petroleum mining</td>
<td>Hidrocarbon</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>Bauxite excavated water quality</td>
<td>Acid base</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>Compounds in seawater</td>
<td>Introduction of Chemistry</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>General context and not maritime focus</td>
<td>Introduction of Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>14</td>
<td>General context and not maritime focus</td>
<td>Colloid</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td>21</td>
</tr>
</tbody>
</table>

The study identified 12 maritime contexts in the learning design despite the fact that the context of corrosion on ships was more recognized and familiar. Several maritime contexts also had emerged that were unfamiliar, for instance, the use of green mussels for water purification. The study also found that social and society domain contexts were most preferred by CPCT [10]. Consequently, this domain was important, especially in schools that aimed at preparing students to be responsible citizens by appreciating chemistry and its contribution to society. Finally, CPCT was able to make a connection between context and content, which was referred to as “fluid transitions” [3].

3 Conclusion

This study concluded that CPCT was halfway in terms of providing a connection between maritime daily life contexts with chemistry concepts. The CPCT experienced challenges in generating questions, especially in the introduced context. In addition, they had difficulties designing a context-based inquiry project from selected queries because they were not familiar. Furthermore, the study recommended a systematic program to help improve CPCT ability in designing maritime context-based learning.
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Students’ Ability to Identify The Types of Motion of Objects Through Kinematics Graphs

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Abstract. Problems in physics are often presented in various representations, meanwhile the ability of students to provide solutions to these problems shows the level of conceptual understanding. This research is a descriptive survey that involves 46 biology education students of FKIP UMRAH who were in their first year of study. The data were collected through tests by using 2 essay questions on the topic of kinematics presented in graphical form. This research aimed to determine the ability of students to identify the types of motion of objects through graphs. Consequently, the results showed that there were still difficulties in identifying the types of objects’ motion through graphs. This difficulty was due to a lack of conceptual understanding and the inability to read the data on the graph.

Keywords: kinematics, motion, graph.

1 Introduction

Physics learning is carried out by emphasizing the concepts that help in problem-solving [1]–[3]. This is because any difficulty in understanding these concepts often causes an inability in solving the physics problems [4], [5], hence it is important to teach the subject using various representations [6]. Kinematics is a fundamental topic taught in general physics lectures [7], however, there are still many difficulties faced by students regarding this concept [8], such as understanding the concepts of velocity [8]–[10] and acceleration [8], [11], [12], distinguishing distance and displacement [8], [13]–[15], and distinguishing between velocity and acceleration [16].

Kinematics problems are often represented in graphical form and are used as initial tests to determine the strategies for teaching [17], [18]. Moreover, some research showed that there were difficulties in solving the problems presented in a graphical form such as identifying and determining the data on graphs [19], interpreting graphs that had negative velocity [20], and distinguishing between velocity-time and position-time graphs [21]. Furthermore, these problems are caused by a lack of understanding of kinematics concepts [7] and poor mathematical skills [22].

The students considered in this research are the ones within the scope of science and biology education in the first year, hence they must have been provided with physics concepts when they were in high school. Meanwhile, to know the students’ conceptual understanding about
kinematics which is a very basic concept in physics, a test was conducted by presenting the questions in a graphical form to determine their ability to identify the types of motion.

2 Methods

This research is a descriptive survey conducted at Raja Ali Haji Maritime University on the 2nd week of March 2021, which involved 46 students of the Biology Education Study Program, Faculty of Teacher Training and Education, in Raja Ali Haji Maritime University (FKIP UMRAH) who are taking General Physics Courses in their first year of study. Data were collected by using two essay questions to test the students' ability in identifying the type of motion experienced by objects through graphical presentations as shown in Figure 1. The answers are analyzed quantitatively by presenting the percentage of answers that resulted from the identification of motion carried out by the participants.

![Fig. 1. Motion Identification Ability Test Questions Through Graphs.](image-url)
3 Results and Discussion

Based on the results of research conducted on 46 respondents by using the questions shown in Figure 1, the following results were obtained:

3.1 Identifying the types of motion of the object through velocity-time graph

In the first question, 46 respondents were tested in the aspect of identifying and describing the types of motion experienced by the object from the beginning to the time second through a velocity-time graph (v-t) as shown in Figure 1a. These questions were not only to test the respondent's ability to identify the types of motion of an object but also to test the respondent’s conceptual understanding of velocity as a vector quantity and the relationship between velocity and acceleration.

The first problem shows a change in motion experienced by the object as seen in the gradient on the graph for two adjacent times. Generally, the motions shown from the graph in the first question include uniform, uniformly accelerated, and uniformly decelerated. Meanwhile, over a time interval, the graph also shows the object at rest. The details of the types of motion of the objects based on the first question are seen in Table 1.

Table 1. Description of the motion of the object based on the first question

<table>
<thead>
<tr>
<th>Time interval (second)</th>
<th>Types of motion</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – a</td>
<td>Uniformly decelerated motion</td>
<td>Magnitude of velocity is decreasing regularly</td>
</tr>
<tr>
<td>a – b</td>
<td>At rest</td>
<td>Magnitude of velocity is zero</td>
</tr>
<tr>
<td>b – c</td>
<td>Uniformly accelerated motion</td>
<td>Magnitude of velocity is increasing regularly</td>
</tr>
<tr>
<td>c – d</td>
<td>Uniformly decelerated motion</td>
<td>Magnitude of velocity is decreasing regularly</td>
</tr>
<tr>
<td>d – e</td>
<td>Uniform motion</td>
<td>Magnitude of velocity is constant</td>
</tr>
</tbody>
</table>

The respondent's answer to the first question showed that there were still many errors in the identification of the type of motion of the object in the time interval 0-a second and a-b second. This is seen in the details of the number of respondents who correctly identify the type of motion of the object in each time interval as shown in Table 2.

Table 2. Details of the correct number of respondents in identifying the motion of the object in the first question
According to Table 2, the percentage of respondents who were correct in identifying the type of motion in the time interval 0-a second time is only 4%. Many errors occurred because respondents are not able to differentiate a graph whose line is on the positive y-axis from the ones on the negative y-axis, hence the shape of gradient in the time interval 0-a second were equated with the ones in the time interval b-c. Basically, velocity is a vector quantity that has both a magnitude and a direction, but the line on the positive y-axis is in the opposite direction to the line on the negative y-axis. Therefore, the results indicated that students had difficulties in identifying the types of motion of the object through a graph with a negative velocity [20].

Also, motion identification errors occurred in the time interval a-b second because many respondents equated the shape of gradient in the time interval a-b second with the one in d-e. Both gradients in the time interval a-b second and the one in d-e are zero because they are parallel to the x-axis. This caused many respondents to state that the motion experienced by the object in the time interval a-b second was uniform. Even though both lines are parallel to the x-axis, the respondent needs to pay attention to the coordinates of the line on the y-axis which states the magnitude of the object's velocity. In the time interval a-b second, the y-coordinate is still at the zero position which shows that the magnitude of the velocity of the object is zero or stagnant. These indicated that students did not understand how to read the data on graphs [19].

The results of the identification of the types of motion in the time intervals b-c second, c-d, and d-e showed that about half of the respondents had correctly identified the type of motion. However, the ones who could not state the type of object's motion from the beginning to e second are incorrect. This is because, among the answers given, respondents only stated the shape of the line observed on the graph as shown in Figure 2. These results indicated that the lack of understanding of the kinematics concept caused students to have difficulty in solving the problems represented in graphical form [7] as well as any other form [4], [5].

![Fig. 2](image)

Fig. 2. Some respondents' answers that show an error in identifying the types of motion of the object in the first question
3.2 Identifying the motion of the object through a position-time graph

In the second question, 46 respondents were tested in identifying the motion of the objects through position-time graph as shown in Figure 1b. In this question, respondents were asked to identify whether the motion shown on the position-time graph is constant velocity or not. Subsequently, students were also asked to determine the magnitude of the object's velocity at a certain second based on the graph and some clues given in the question.

Consequently, the graph shows that the motion of the object is at a constant velocity. This is seen from the uniform change in position for the same time interval with the magnitude of object's velocity being 1 m/s. Basically, the question states that the value of one box for both the position on the y-axis and time on the x-axis is 2, while the magnitude of the velocity of the object moving at a constant velocity in every second is always the same. Therefore, at the 15th second, the magnitude of object's velocity will also remain the same, which is 1 m/s.

The answers given by the respondents in part a of the second question are divided into several categories as shown in Table 3. The first category of respondents correctly stated that the motion of the object was at a constant velocity accompanied by the correct reasons as shown in the graph. While, the second category is the ones who gave the correct answer accompanied by incorrect reasons. However, the third category of respondents gave incorrect answers.

Table 3. Categories of respondents’ answers for part a of second question

<table>
<thead>
<tr>
<th>No.</th>
<th>categories</th>
<th>number of respondents</th>
<th>percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Correct answer with correct reason</td>
<td>5</td>
<td>11%</td>
</tr>
<tr>
<td>2</td>
<td>Correct answer with incorrect reason</td>
<td>29</td>
<td>63%</td>
</tr>
<tr>
<td>3</td>
<td>Incorrect answer</td>
<td>12</td>
<td>26%</td>
</tr>
</tbody>
</table>

In Table 3, the percentage of respondents in category 1 is only 11%, while category 2 shows that 63% had given the correct answer with wrong reasons according to the concept of moving objects with constant velocity. However, category 3 shows that 26% of respondents stated that the motion shown in position-time graph was not a constant velocity.

Some answers given by respondents in each category are seen in Figure 3. For example, figure 3a shows the correct answers and correct reasons given, by using the equation \( v = \frac{s}{t} \) where the quotient between \( s \) and \( t \) is always the same, which is 1 m/s. Hence, the conceptual understanding helps in solving the problems [1]–[3].

According to Figure 3b, the respondent stated that the motion in the second question graph was a constant velocity with variable acceleration. Meanwhile, it is known that the object moving at a constant velocity had no acceleration. These results indicated that students still had difficulties in understanding the concepts of velocity [8]–[10] and acceleration [8], [11], [12]. According to [23], most students identify motion with constant velocity in position-time graph (s-t) from its straight form, and the quotient between \( s/\Delta t \) which is always constant. In this case, most students only rely on the straight graph form to determine answers.
In Figure 3c, the respondent stated that the motion was not constant because the velocity increased regularly. Based on this answer, it is seen that the respondent is not able to distinguish between the position-time graph (s-t) and the velocity-time graph (v-t). These results indicated that there were still many students who were unable to distinguish between the velocity-time graph (v-t) and the position-time graph (s-t) [21].

The object is moving at a constant velocity because the result of s/t is always constant, 1 m/s

Yes it is. It’s because constant velocity is uniform motion where the acceleration can change but the velocity is constant

The object is not moving with a constant velocity but it’s moving uniformly accelerated because on the graph, the motion of the object is in a straight line with velocity changes regularly

No it doesn’t. It’s because the object is moving at an ever-increasing velocity

Fig. 3. Some answers given by respondents for (a) category 1, (b) category 2, and (c) category 3.

In the part b of the second question, only 11% of respondents gave correct answers, which is the same as the ones in category 1 for part a of the second question where correct answer and reason were given. This showed that respondents were able to analyze the magnitude of the object's velocity at any second, because they understand that the object moving at a constant velocity has the same magnitude and direction, and also understand that there is no acceleration for the object moving at a constant velocity. However, the inability to understand the concept of velocity [8]–[10] makes it difficult for students to solve the problems that are represented in any form [4], [5] including kinematics questions that presented in graphical form [7].

4 Conclusions

The results showed that it is still difficult for students in the first year of study to identify the motion of objects on velocity-time graphs (v-t) and position-time graphs (s-t), specifically for negative velocity. This is due to the lack of understanding of kinematics such as the concepts of velocity and acceleration. Also, there are still many students who were not able to read the data on the graph given both on the vertical axis and the horizontal axis, because they are not able to distinguish between the velocity-time graphs and the position-time graphs. This indicates the need for kinematics learning that emphasizes on conceptual understanding, taught by using multiple representations.
References


Students' Self-Efficacy Towards Assignment In The Form Of Infographic In Biology of The Cell Courses

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Abstract. The COVID-19 pandemic has a huge impact on many aspects of life, including education. Some efforts should be taken to ensure that learning objectives are achieved. One of such is giving the assignments in the form of infographics, especially in Biology of The Cell courses. Subsequently, this study used a descriptive approach and aims to determine student self-efficacy regarding the assignment of infographic preparation in the course. From the results, the student's self-efficacy for giving assignments in the form of compiling infographics in the course was in a good category.

Keywords: self-efficacy, assignment, infographics, the biology of the cell.

1 Introduction

The COVID-19 pandemic has a huge impact on every aspect of life including, the economic, social, health, and educational systems. Due to this pandemic, educators in this case lecturers must be able to organize an effective and efficient learning process as well as adjust fast and precisely to the current environment. Certain efforts must be performed during the learning process to ensure that students receive knowledge effectively and educational goals are achieved. One of such efforts is the use of appropriate recitation or assignment methods adapting according to current conditions.

Students in universities might be given assignments in a variety of formats. In the current pandemic, the assignments given should be performed independently and be completed without having to meet face-to-face with lecturers to help curb the spread of COVID-19. It does not need to be many, therefore students do not feel burdened by the learning process. Creating infographics possibly facilitates a good learning process during the pandemic situation.

Infographics are a medium that combines text, pictures, schematics, and tables into a concise presentation to convey a collection of vital information. The developed infographic aims to improve the efficiency with which messages are delivered to readers. According to [1], infographics are a form of information delivery that demonstrates the use of good graphic design to improve human ability to understand a certain pattern. They have become a new trend that can be used in the learning process, including Biology of The Cell courses. [2]

According to the analysis of the semester learning plan for the Biology of The Cell course at the Universitas Maritim Raja Ali Haji (UMRAH), the material contains a lot of information that needs contextual explanation. Therefore, providing a method that helps students understand even though they cannot conduct direct observation in everyday life becomes necessary. This is the foundation for students to effectively visualize the Biology of The Cell material through the
task of generating infographics. Hence, this study aims to determine student self-efficacy regarding the assignment of infographic preparation in the Biology of The Cell course.

2 Methods

From June-December 2020, a descriptive study was performed. Purposive sampling was used to select 31 students who took the Biology of The Cell course in the Odd Semester 2020-2021 at the Universitas Maritim Raja Ali Haji. Subsequently, data were obtained through questionnaires distributed online to students after attending the lectures for one semester. This was then analyzed descriptively and quantitatively and the aspects of the assessment acquired were categorized into a modified interpretation of [3] in Table 1.

Table 1. Category of Self-Efficacy Assessment.

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>0% - 24%</td>
<td>Not very good</td>
</tr>
<tr>
<td>25% - 49%</td>
<td>Not good</td>
</tr>
<tr>
<td>50% - 74%</td>
<td>Good</td>
</tr>
<tr>
<td>75% - 100%</td>
<td>Very good</td>
</tr>
</tbody>
</table>

3 Result and Discussion

Ten modified questions are used to assess students' self-efficacy toward tasks in the form of infographics [4]. This is important in determining the level of students satisfaction after working on infographic assignments. Table 2 shows the results of the analysis.

Table 2. Results of Analysis on Student Self-Efficacy on Assignments in the form of Infographics

<table>
<thead>
<tr>
<th>No.</th>
<th>Statement</th>
<th>Highest Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>These assignments can increase my motivation to learn.</td>
<td>54.8% (Strongly Agree)</td>
</tr>
<tr>
<td>2.</td>
<td>I can improve my visual literacy to understand the concepts through an assignment in the form of infographics.</td>
<td>54.8% (Agree)</td>
</tr>
<tr>
<td>3.</td>
<td>In my opinion, giving these assignments can increase my imagination to understand the biology of the cell material.</td>
<td>61.3% (Strongly Agree)</td>
</tr>
<tr>
<td>4.</td>
<td>In my opinion, giving these assignments can increase my creativity to compose a good infographic.</td>
<td>74.2% (Strongly Agree)</td>
</tr>
<tr>
<td>5.</td>
<td>I can master new skills that I have never encountered in my daily life through this assignment.</td>
<td>71% (Strongly Agree)</td>
</tr>
<tr>
<td>6.</td>
<td>In my opinion, learning by giving this assignment can positively affect the learning process.</td>
<td>64.5% (Strongly Agree)</td>
</tr>
<tr>
<td>7.</td>
<td>In my opinion, this infographic is a tool that is capable to present scientific information.</td>
<td>64.5% (Strongly Agree)</td>
</tr>
<tr>
<td>8.</td>
<td>In my opinion, infographics can show the material in a form that is easy to understand.</td>
<td>67.7% (Strongly Agree)</td>
</tr>
<tr>
<td>9.</td>
<td>It is easier for me to understand the material by using infographics than plain text.</td>
<td>58.1% (Agree)</td>
</tr>
</tbody>
</table>
According to Table 2, students gave good self-efficacy towards infographic assignments in general. From the results, 17 students (54.8%) strongly agree with the statement that they can feel a high motivation to learn. Furthermore, with the same number and percentage of students felt that they could improve their visual literacy to understand the concepts studied. Both are based on the opinion [5] that infographics can be created using graphic design to produce a good visual appearance. Infographics help to motivate learners and increase visual literacy, evaluation, persuasion, and visual communication.

Subsequently, 19 students (61.3%) strongly agreed that this infographic assignment could improve their imagination needed to understand the abstract concepts of Biology of The Cell. Meanwhile, 23 students (74.2%) felt that their creativity in compiling a good infographic was increased due to infographic assignments. [4] The imagination and creativity of students have been discovered to increase, once they are challenged with the creation of infographics. This is supported by the opinion of [6] that the human brain recognizes and understands patterns and their relationships, especially in visual forms that support students’ imaginations in compiling infographics based on the studied material.

The complex Biology of The Cell materials can be simplified into an infographic display that can be created by students according to their respective abilities using an attractive and simple presentation. Also, data shows that 22 students (71%) strongly agree that giving assignments in the form of infographics, allows them to acquire new skills that would not have been learned otherwise.

Students are instructed to create this infographic using a simple application, namely Microsoft Word and PowerPoint. This enables students to focus on making simple infographics without thinking about downloading other applications that require a good internet connection. However, based on the results of interviews with some students, two other applications were also used besides those instructed, namely Canva and CorelDraw. Canva is used by 20 people (64.51%), and CorelDraw is used by 7 people (22.58%), while the rest use PowerPoint. Moreover, Canva and CorelDraw applications were new applications and they never studied before. This indicates that the use of infographics reinforces students’ perceptions of a good learning process. Students also obtained additional skills by learning the application on an autodidact basis in the infographic creating process.

Additionally, 20 people (64.5%) strongly agree that this infographic is a tool for presenting scientific information and according to [5], infographics can be used as a scientific research tool. Students are expected to present content from reference materials as directed by the lecturer. For example, [7]’s textbook contains all information about Biology of The Cell courses, starting from the structure, function, and working mechanism of each cell component being studied. This book is very dense in content, therefore students may offer a straightforward display of information while maintaining scientific knowledge with this infographic assignments.

Furthermore, 21 students (67.7%) felt that the material from books and teaching materials could be simplified into an infographic display that was effective to understand. A total of 18 students (58.1%) believed that infographic assignment enables students to understand the topic easier than ordinary text-based data or information. This can assist students to grasp difficult
things by breaking them down into smaller ones, which were assessed by 20 people (64.5%). Students also believe that they can present infographics to help in simplifying the complex Biology of The Cell material. All aspects of this assessment were consistent with the opinion of [8] that infographics have the advantage of presenting materials in a more organized manner so that informative messages can be effectively received by others. Infographics can simplify complex information for easy understanding and based on the average percentage of student self-efficacy analysis results of 63.54%, they are in a good category.

4 Conclusion

This study concludes that the students have a high level of self-efficacy during the compilation of infographics for assignments. Therefore, positive motivation, creativity, imagination, and learning process are demonstrated during the Biology of The Cell course. The results can be used as a basis for further studies on the usage of infographics both in schools and universities.

Acknowledgments. Gratitude goes to LP3M UMRAH, Department of Biology Education, Faculty of Teacher Training and Education UMRAH for facilitating this study. This extends to all students of the Department of Biology Education in UMRAH that participated.

References
An Analysis and Research Work on the Chinese Monosyllabic Vocabulary of Indonesian College Students in English Language Education

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Abstract. Most Chinese morphemes are monosyllable. When used alone, they are words, and when not used alone, they are word formation components, its mainly due to the lack of morphological changes in Chinese, root compounding is the main method for the generation of new words, and many polysyllabic words are developed from ancient monosyllabic phrases. Most of the Chinese polysyllable words are compound words, but some are double-syllabic simple words, which are mainly manifested as repetitive words and double-syllable words. The disyllabic trend of Chinese vocabulary, namely monosyllabic words which often expanded into two syllables, and multi-syllable words which often compressed into two syllables, there are a large number of four-character idioms in Chinese. In terms of the language structure unit, most of them belong to phrases, and in terms of their sentence-making function, they are equivalent to a word. The vocabulary of any language is always in a state of constant change, and the Chinese vocabulary will continue to develop and change with the development of the material and spiritual civilization of the Chinese society. Furthermore, this research uses a statistical analysis questionnaire survey, while the content is mainly for the learning of Chinese monosyllabic vocabulary of Indonesian college students. It is expected that this research can provide more targeted learning method, hence, it can further improve students' mastery and use of appropriate vocabulary. During the survey and statistics of the vocabulary of a single Chinese learning session in the English Language Education University, it is found that most students will be confused with the Indonesian vocabulary position when they first learn Chinese vocabulary. From the statistics, it can be seen that the error rate of students learning Chinese vocabulary is higher than 84.90%.

Keywords: Indonesian university students, monosyllable, Chinese vocabulary, analysis and research
1 Introduction

Based on the long-term observation, experience in teaching Mandarin, as well as the actual situation of Indonesian English Language Education College students in learning Chinese, it is found that college students have an error rate while learning Chinese vocabulary, specifically single Chinese vocabulary. Among them, the single-syllable vocabulary of Chinese has the highest frequency of errors, according to [1], modern Chinese vocabulary has phrases, affixes, and morphemes, and also monosyllable and double syllables. The vast majority of Chinese morphemes are monosyllabic, when used alone, they are words, and when not used alone, they are word formation components, mainly due to the lack of morphological changes in Chinese. Root compounding is the main method of new words generation, many polysyllabic words are developed from ancient monosyllabic words. Most of Chinese polysyllabic words are compound words, but some of them are double-syllable simple words, which are mainly manifested as repetitive words and double-syllable words [2]. The disyllabic trend of Chinese vocabulary, namely monosyllable words which often expanded into two syllables and multisyllable words which often compressed into two syllables, there are a large number of four-character idioms in Chinese [3].

In terms of the language structure unit, most of them belong to phrases, and in terms of their sentence-making function, they are equivalent to a word. The vocabulary of any language is always in a state of constant change, and the Chinese vocabulary will continue to develop and change in line with the development of the material and spiritual civilization of the Chinese society. According to [4], Chinese is not only rich in vocabulary, but also in various methods of vocabulary formation, therefore, it is necessary to really understand the meaning and use of words, and unclear understanding of word structure cannot be condoned. In addition, Chinese words are divided into monosyllabic and double-syllabic words, monosyllabic and polysyllabic words are based on the number of syllables. From this perspective of word formation, there is only a slight difference between "simple words" and "composite words."

2 Methods

In order to accurately understand the learning situation of Chinese monosyllabic vocabulary by Indonesian English Language Education College students, the questionnaire method was used in this research. A total of 20 questionnaires is designed and distributed, with the purpose of understanding whether the fourth-grade students made mistakes in learning
Chinese vocabulary. There are 10 questions in the questionnaire, which refer to students' personal information and the usage of monosyllabic vocabularies. This research uses statistical methods to count the Chinese monosyllabic grammatical error rate of college students.

<table>
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<tr>
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<th>才</th>
<th>若</th>
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3 Research Results and Analysis

Through investigation and analysis conducted, this research discovered the reasons and problems of the fourth grade students in learning Chinese vocabulary are relatively large. Most of the students in choosing the correct grammatical position are interfered by their mother tongue to make wrong judgments, specifically when they use the word "着", the time error rate is extremely high. From the statistical data, it seems that 84.90% of the answers are quite high for the students to choose incorrect vocabulary. To enable students to choose the right position while choosing vocabulary, they must first master the subject-predicate-object structure of Chinese grammar, the collocation of Chinese vocabulary single-syllable words, and the differences between phrase and vocabulary. The vocabulary in Indonesian can be used alone, but it does have a big difference in usage from the Chinese Vocabulary, it can be seen that there will be a higher frequency of grammatical errors in the selection of subject and predicate. In addition, Chinese words can be divided into three categories in terms of structure, namely simple words, compound words and abbreviated words. Simple words are composed of one morpheme, and in terms of pronunciation, there are more than one single syllable, such as "Just"; "cai" and "lai", "Go"; "Zhu", "Good" and "Yes", "Shang" [5], [6], [7]. According to the practical situation of Chinese monosyllabic words, it can be explained that Indonesian students make mistakes in using simple words. In sentences, other words are often used to express the meaning of

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SUMMARY ERROR RATE 100 84.90%
monosyllabic words. In addition to misusing monosyllabic words, Indonesian students often mistakenly add other words.

4 Conclusion

Through the survey and statistics of the vocabulary of a single Chinese learning session in the English Language Education University, this research found that most students will be confused with the Indonesian vocabulary position when they first learn Chinese vocabulary. From this statistics, it can be seen that the error rate of students learning Chinese vocabulary is higher than 84.90%. In order to avoid making mistakes for students who learn Chinese vocabulary, specifically while choosing a single vocabulary, they must first master the subject, predicate and object of Chinese grammar. In line with this, teachers can use different teaching methods to improve students’ understanding of vocabulary, and also use word collocation to mixed teaching. In addition, it is expected that it can be used as a reference for improving students' Chinese vocabulary learning in the future.

References


Emerging Importance of Self Regulation for Students During the Covid-19 Pandemic

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Abstract. Distant learning imposed during school lockdown amidst the Covid-19 pandemic emphasized students’ self-regulation. This study examined the correlation between self-regulation and learning achievement on high school and junior high school students during the full-time distant learning period of Covid lockdown. Students' self-regulation was assessed using a questionnaire, and the learning test result was obtained using validated instruments. Inferential statistics analyzed data to determine the correlation between students' self-regulation and learning achievement. Data analysis shows a positive correlation between good self-regulation and study results among both sample groups. Both junior high school and senior high school students with good self-regulation tend to score better on the test. This finding indicates that students with better self-regulation will likely thrive better in a highly independent learning environment of the Covid-19 pandemic.

Keywords: self-regulation, learning achievement, learning in the pandemic.

1 Introduction

Learning natural science is a distinct activity and exercise for students' learning effort [1]. Knowledge building of the learning process in the cognitive, affective, and psychomotor domains requires students to regulate their abilities actively and independently for a successful learning process [2]. Regulation of one's abilities is commonly referred to as self-regulation or, better known as self-regulation. Self-regulation is the ability of students to make their learning strategy plans and targets to be achieved in learning. It emphasizes the importance of personal responsibility and control over the knowledge and skills acquired [3]. Therefore, self-management or self-regulation is the ability of students to regulate themselves in the learning activity by including metacognition, motivation, and active behaviour. Self-management is not a mental ability or academic ability but how individuals process and change their thoughts and habits [4].

In the learning process, self-management practised by students will beget knowledge and improve their cognitive skills by using metacognitive strategies in completing the tasks assigned to each student [5]. Students' success in managing themselves is very influential on the learning outcomes of students themselves in carrying out learning. Factors that greatly affect student learning outcomes are internal factors, namely self-regulation and external factors, which
consist of; family environment, friends, and the surrounding environment, which also influence student learning. Each individual who learns will receive influences from various environments.

In the pandemic situation, learning has become more autonomous, and self regulation is predicted to have a greater influence on learning achievement [6]. Learning outcomes are used to determine how students understand and build their knowledge. Learning outcomes become a measurement of the assessment of learning activities or learning processes. It is one of the referenced parameters available to check students' learning achievement [7].

Biology is a subject that requires high autonomy and self regulation as with other STEM subjects. Distant learning in the Covid-19 pandemic increases challenges in biology learning everywhere. Students struggle with online learning in the archipelagic region like Riau Islands, mainly because of network and computer device availability. This problem has led to lower learning achievement in regions with the same challenges during the pandemic [8]. In addition to the low student scores, several problems occur, when the new teaching and learning process took place because of the coronavirus designated as a pandemic in Indonesia. Schools must ensure that teaching and learning activities continue even though students are at home. Teachers optimize the use of existing media such as online media. Because of this, students experience a decrease in learning outcomes. Students find it more difficult to understand learning material, as evidenced by the results of the assignments and exams given having low scores.

Autonomous and independent learning is predicted to become the new norm [9]. This trend will likely continue well beyond the restriction of the covid-19 pandemic. Leaders and education experts have started to migrate entirely into a more autonomous education policy. In preparation for this trend, students are expected to regulate their learning processes better. This study is conducted to examine how self-regulation correlates with learning achievement.

2 Methods

This research was conducted at SMA and SMP in Tanjungpinang. The sampling technique in this study used a probability sampling technique with random cluster sampling. Sampling using the Isaac and Michael methods by taking an error rate of 5%, the number of samples taken is 150. This study is correlational research that examines the correlation between students' self-regulation and learning achievement. Student's Self regulation were assessed using a validated questionnaire instrument. Biology test was administered to determine student's learning outcomes. Data were analyzed using regression statistics to determine the degree of correlation.

3 Results and Discussion

The distribution of the instruments carried out was obtained from self-regulation data and data on student biology learning outcomes. The calculations using regression statistics variable X and variable Y have a relationship (Adjusted R Square) of 0.7809 or 78.09%. In addition, the X and Y variables have a high linear level (Multiple R) of 0.8845.

Table 1 shows the calculation of the correlation test using the Pearson Product Moment test. The calculated r-value is 0.88, while the r table value with a significance level of 0.05, df = 139-2 is 0.1401. so the value of r count > r table. This study indicates a positive relationship between self-regulation and the biology learning outcomes of SMA and SMP students during the covid-19 pandemic. The results of this study are in accordance with Herawaty's study which found similar correlation between self-regulation and learning achievement [10]
Earlier study from Azevedo et al. also states that self-regulation is an important factor in supporting students to obtain optimal achievement [11]. This finding explains that there is a relationship between self-regulation and student learning outcomes while relationship between self-regulation and learning outcomes has a significant relationship to improve student learning outcomes. One aspect of self-regulation is self evaluation. The evaluation referred to as positive self-evaluation makes students feel confident to learn and motivates them to continue to work diligently because they believe they can make further progress [12].

The embodiment of evaluation is related to learning outcomes. Learning outcomes are changes in students' abilities after experiencing the learning process [13]. This dictates that one of the personal factors that affect a person's achievement is the ability to self-regulate. Even in the case of students with good level of intelligence, personality, home environment, and a supportive school environment, without being supported by self-regulation abilities, the student will still not achieve optimal performance [14].

In addition, the positive effect caused has been proven empirically by several research results. Self-regulation will support the learning process carried out by students to achieve maximum learning outcomes. Students with good self-regulation will have good learning outcomes because they can organize their learning activities [15]. Self regulation also affected emotional aspect. Students who have good self-regulation usually able to better manage their emotional regulation [16].

This finding encourages teachers to promote student's self regulation. The emotional regulation possessed will allow students to monitor and evaluate their learning activities [17]. Some students even set consequences when they achieve or are not in the learning process when they do not carry out their activities as planned [18]. When teacher involved students in learning planning, students might feel better satisfaction when they are able to meet the challenges of their coursework.

The existence of self-determined contingencies as a form of student self-regulation can further encourage students to prepare for learning, participate in the teaching and learning process, and follow up on the teaching and learning process to achieve optimal learning outcomes [19]. The better or higher the student's self-regulation, the better or higher the student's biology learning outcomes. Students who have a good motivation, metacognition, and behaviour have better learning outcomes. Meanwhile, students who have low levels of motivation, metacognition, and behaviour have lower learning achievements.

<table>
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<td><strong>Observations</strong></td>
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</table>
4 Conclusion

This study concludes that there is a positive correlation between students' self regulation and learning outcome. Students with better self regulation tend to score better in learning achievement test.

References


Religious Character Values in the Works of Raja Ali Haji

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Abstract. This study aims to determine the religious character values in the literary works of Raja Ali Haji. The process involved analyzing Syair Abdul Muluk, Gurindam Dua Belas, Thamarat al-Muhimmah, Tuhfat al-Nafs, and Syair Sinar Gemala Mestika Alam using Pierce’s semiotic theory as well as the descriptive-qualitative and content analysis techniques. The findings indicated twenty religious character values in these works which consist of four semiotic classes and are related to the teachings of Islam.

Keywords: value, character, religious, Raja Ali Haji’s literary work.

1 Introduction

Raja Ali Haji, originally from the Riau-Lingga Kingdom, was a prominent author during the 19th century as well as the driving force for Indonesia’s intellectual awakening and the sustenance of the Malay language of the Riau Islands which served as the forerunner of the Indonesian language [1]. It is stated in Gurindam Dua Belas (Article 5, Verse 1) which is one of the works of Raja Ali Haji that “if you wish to know the people of high birth, it is reflected in their manners and speech” [2]. He assumed the role of a scholar, author, historian, and Islamic expert, and viewed cultured attitude as an enormously paramount aspect of human lives [3]. Meanwhile, even though several studies have been conducted on the religion, linguistics, history, political governance, and literature aspects of Raja Ali Haji’s literary works [4], none has focused on analyzing the views of this author up to the present time.

The literary works have been consistent with the policy of Indonesia’s education due to the possibility of developing the noble values in them as learning materials [5]. Moreover, inherent moral values also contribute positively to the nation’s development [6]. It is also important to note that the works reflect the view of this author about social life [4] and this makes it possible to apply the character education adopted from these literary works as a hidden curriculum in all school subjects [7].

Some previous studies have focused on the values in Raja Ali Haji’s literary works such as the one conducted to investigate (1) the indices of personal character, (2) its association with the teachings of Islam, and (3) its semiotic classes [8] as well as another which observed the character indices associated with the people. Therefore, this present study aims to examine another aspect contained in these literary works which focus on three main issues including the (1) index of religious character values in human relations with God, (2) semiotic class of
religious character values in human relations with God, and (3) the relationship of these religious character values to Islamic teachings [9].

2 The Concept of Character

Bukhari al-Jauhari in Tāj al-Salātīn [10] was the pioneer of the character concept as indicated by the 14 noble values recommended which were observed to have certain characteristics including the good character which is considered to be the closest to godliness. These values lead to self-perfection in relation to human actions and prevent them from misfortune. This is in line with the argument that such character drives humans to avoid wrongdoing and helps them towards knowledge acquisition [11]. Moreover, the character in people’s hearts controls their mind and allow them to distinguish between the good and the bad. It also transforms their behavior and those with good behavior shall be glorified.

The concept of character was the pioneer of the character concept as indicated by the noble values recommended which were observed to have certain characteristics including the good character which is considered to be the closest to godliness. These values lead to self-perfection in relation to human actions and prevent them from misfortune. This is in line with the argument that such character drives humans to avoid wrongdoing and helps them towards knowledge acquisition [11]. Moreover, the character in people’s hearts controls their mind and allow them to distinguish between the good and the bad. It also transforms their behavior and those with good behavior shall be glorified.

The word ‘heart’ in Malay is the origin of the word character and is reported to be originally derived from the Arabic word [11]. Several scholars have maintained that this word has different strata of meanings which are further classified into 5 different layers. Layer 5 as the first stratum is the most outer dimension of the heart, layer 4 as the second stratum is intelligence, layer 3 as the third stratum is spiritual intelligence, layer 2 as the fourth stratum includes intellectual and spiritual acuems while layer 1 which serves as the deepest stratum is related to spiritual secrets [12].

The heart is also divided into two sides and these include the good side which means the heart is expected to be God-oriented and incessantly substantiated while the evil side requires to be conquered. Moreover, human desire also has two parts by nature and these include 1) the desire of getting oneself close to God Almighty and paradise and 2) the desire leading to fiends and abyss. It is, therefore, advised that the Almighty, paradise-oriented, strong, and viable heart needs to be sustained [11]. The relationship between the heart and character is indicated in the following figure.

![Fig. 1. The relationship between the heart and character](image)

Figure 1 shows that a good character which represents glory is derived from God-oriented desire while a bad character which generates indignity originates from evil-oriented desire. Therefore, it is important to distinguish between the bad and good character of a person. Meanwhile, this character phrase has been previously described as “complacency” [9], [13].
Moral philosophy or ethics also defined trait as the character or special deed of an individual which is used to express civility and respect for other people as evidenced in the demeanor and way of life of such individual. Character is also explained as the endorsement of an individual’s general disposition, demeanor, decisions, ruts, and accepted moral standards, and is further referred to as a benefaction [14].

The trait is related to akhlak (morals) which is the plural form of ‘khuluq’. Meanwhile, khuluq is defined in Arabi as habits, deportment, character, demeanor, faith, nature, honor, inner outlook, or morality [15]. Moreover, Sajiyyah means deportment, mur’iah means trait, thab’in means trait, and adab means attitude in Arabic and they all define morals. Meanwhile, despite the fact that moral is part of ethics, the two concepts are fundamentally different. This is because the pillars of belief and the pillars of Islam establish morality based on beneficence, probity, and holiness according to Islamic beliefs [14] while ethics is only associated with rationality based on the mind. It is, therefore, observed that character is semantically similar in meaning with morals because it represents a good mind with noble characteristics.

3 Semiotic Classes

Social events and literary works can be analyzed using semiotic theories which are very popular during the Greek Stoics era [16]. Semiotics, more particularly, is a sign-based communication theory which is normally employed in different studies. A Swiss linguist, Ferdinand de Saussure, and an American philosopher, Charles Sanders Peirce, were the pioneering semiotics scholars, and it is possible to use Peirce's triadic theory of signs to analyze classroom events in all of their semiotic complexity. Therefore, the present study used semiotics theories to analyze the personal character index due to its wide use in communication and language studies.

Every single thing can be viewed as a sign provided that it has a three-cornered relationship with the ground, denotatum, and interpretant [17]. Moreover, the representation or sign exists invariably in the triadic relationship such as soil, thing, and interpretant [18]. This means a sign is consequently perceived as an object on the side of someone or something in a particular capacity [19] and that the provision of name to a particular thing is related to the function of a sign as the ‘ground’.

Denotatum represents a class in sign known as designata. Therefore, the sign is divided into three components based on its relationship with the denotatum and these include images, indices, and emblems [18]. This means the existence of a denotatum is required to determine an index which covers everything that focuses on something else such as pointing with one finger, compass direction, thrilling hmmm significantly, and the phrase deictic (there, tonight, future, and others).

A sign can be classified into 10 types based on certain differences according to Peirce [17]. The first is the qualisign also known as the rheumatic iconic qualisign which depicts color characteristics such as yellow, blue, red, white, and others. The second is the classic sinsign which denotes similarity and is observed to be synonymous with visuals, charts, maps, and mechanics. Rheumatic indexical sinsign which is the crystallization of a thing which occurs through direct experience with attention appeal in the near future is the third. This is followed by the dicent sinsign which is always indexical and informs something while the fifth is the classic legisign that informs people about a rule or law.
It is important to note that the indexical signs also known as the existential signs are the most paramount [20]. Meanwhile, a sign can also be classified into three types and these include (1) an index referring to the truth outside the text such as the lexicon employed beyond literary works which refers to an object, minds, and others, (2) an index referring to other texts components of a script which place the text in the common literary tradition, and (3) an index referring to other elements within a text (intra-textuality). The inter-textuality and intra-textuality ensure script conformance and establish its broad fiction world [20]. Moreover, objects or deportment are considered as speech deportment (parole) in a linguistic structure acting as the foundation for the grammatical analysis in the semiotic study [19].

4 Method

This study analyzes 5 of the 20 literary works of Raja Ali Haji including *Syair Abdul Muluk* (SAM) [20], *Gurindam Dua Belas* (GDB) [2], *Tsamarat al-Muhimmah* (TAM) [21], *Tuhfat al-Nafis* (TAN) [22], and *Syair Sinar Gemala Mestika Alam* (SGMA) [23] through a descriptive qualitative method [7]. It is important to note that the methodology is relatively complex due to the wide scope associated with delving into several works of Raja Ali Haji [24]. The content analysis (CA) technique was used to collect and analyze the data due to its ability to determine the existence of words or particular notions in a text [25]. This technique is perfect for this study because the objects under analysis are the literary works of Raja Ali Haji with the focus on describing the character indices related to the family. Moreover, the meanings and relationships of words were also analyzed based on the concept of morality proposed by Raja Ali Haji’s selected works.

5 Results and Discussion

The value of religious character in Raja Ali Haji’s literary works was found in the form of an index which is defined in Peirce’s semiotic theory as a sign that is related to a cause and effect. For example, faith in God is an index of religious character values because faith is a sign which shows that someone believes in God as indicated in Islamic teachings. This indicates the belief in God is the cause while the faith in God is the effect.

The first religious character value contained in Raja Ali Haji’s literary works is faith in God as observed in four works including SAM, GDB, TAM, and SGMA. Every human being is required to believe in God as the Creator of all creatures. It also shows that the absence of quality faith indicates humans are denying their existence as creatures of God. This mandate, among others, is found in the SAM, stanza 1913 which states that [26].

*Barang apa pun kulihat segala*
*Kebesaran Tuhan Azza wa Jalla*
*Jikalau sungguh asal kemala*
*Masakan cahayanya tiada bernyala*

This is part of the story on nature and attitude of the wheat handyman, Abdul Gani’s helper, son of Sultan Abdul Muluk, and his wife Siti Rafiah. The grain worker firmly believes that everything happening in this world is due to the power of God and his character and attitude.
show that he has faith in God. Therefore, the verse highlights the message associated with the obligation to believe in the Creator.

GDB also contains the obligation to believe in God in the First Article, verse 3. It is discovered that the diction “to know” is used in this verse but the meaning is not just about ‘knowing’ but also about “believing”.

*Barang siapa mengenal Allah* (Whosoever has knowledge of The One,)
*Suruh dan tegahnya tiada ia menyalah* (Command, forbid: he will not turn.)

The second line of the stanzas further emphasizes that humans are obliged to believe in God. What is the proof of that faith? There is no other proof that humans are obliged to carry out God’s orders and avoid His prohibitions. This means the stanza focuses on the need to have faith in God. This mandate is further contained in verse 16 of the advice poem, TAM, [21] which is stated as follows.

*Jika benar yang kita hukumkan*
*Di belakang jangan kita hiraukan*
*Ummpat dan puji kita biarkan*
*Kepada Allah kita saksikan*

The verse implicitly conveys the message that nothing needs to be ignored in the world including praise and curse when the activities of humans are truly based on God’s provisions. This means having faith in God is the most important and this can be achieved by living based on the guidelines provided by God. Moreover, all challenges need to be directed to God and this is the key to a successful life as well as the proof of human faith in God. The only condition is that every activity needs to be conducted strictly based on God’s guidance without any opportunity for hidden evil by getting involved in selling the name of God which is a sin. The mandate on the obligation of humans to believe in God was also found in stanza 76 of the SGMA as indicated in the following excerpt.

*Lain daripada itu beberapa pula*
*Suruh dan larang Allah Ta’ala*
*Di dalam Quran ‘Azza wa Jalla*
*Perintahkan yang baik tiada cela*

The stanza shows that all God’s commands and prohibitions are only good for humans and this means they need to be believed and implemented in order to exhibit faith in God. This faith is, therefore, considered a sign of religious character in human relations with God. Meanwhile, there are twenty religious character values in Raja Ali Haji’s literary works as previously explained and they are all presented in the following Table 1.
<table>
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<th>No.</th>
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<td>2.</td>
<td>Mentioning God’s name every time start a work</td>
<td>Stanza 1</td>
</tr>
<tr>
<td>3.</td>
<td>Praising God’s greatness</td>
<td>Stanza 307</td>
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<tr>
<td>4.</td>
<td>Willing to accept God’s destiny</td>
<td>Stanza 684</td>
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<tr>
<td>5.</td>
<td>Knowing God</td>
<td>Stanza 204</td>
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<td>6.</td>
<td>Expecting God’s protection</td>
<td>Stanza 176</td>
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<td>7.</td>
<td>Fear of God</td>
<td>Stanzas 1.241-1.333</td>
</tr>
<tr>
<td>8.</td>
<td>Put your trust in God</td>
<td>Stanza 466</td>
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<td>9.</td>
<td>Obey worship</td>
<td>Stanzas 469-470</td>
</tr>
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<td>10.</td>
<td>Pray to God</td>
<td>Stanza 523</td>
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<td>11.</td>
<td>Expect God’s help</td>
<td>Stanzas 660-661</td>
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<tr>
<td>12.</td>
<td>Believing in God’s power</td>
<td>Stanzas 500-510</td>
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<td>13.</td>
<td>Give thanks to God</td>
<td>Stanza 476</td>
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<td>14.</td>
<td>Struggling to uphold God’s religion</td>
<td>Stanzas 636-667</td>
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<td>15.</td>
<td>Expecting God’s forgiveness</td>
<td>Stanzas 470-471</td>
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<tr>
<td>16.</td>
<td>Patiently accepting God’s trials</td>
<td>Stanza 478</td>
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<td>17.</td>
<td>Loving the hereafter more than the world</td>
<td>Stanzas 469-493</td>
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<td>18.</td>
<td>Believing in God’s guidance</td>
<td>Stanzas 500-610</td>
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<tr>
<td>19.</td>
<td>Following God’s instructions</td>
<td>Stanza 910</td>
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<tr>
<td>20.</td>
<td>Believing in the perfection of God’s religion (Islam)</td>
<td>Article I, stanza 1</td>
</tr>
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</table>
Table 1 shows the religious character values in Raja Ali Haji’s literary works include (1) having faith in God, (2) mentioning God’s name every time when starting work, (3) praising God's greatness, (4) willing to accept God's destiny, (5) knowing God, (6) expecting God's protection, (7) fearing God, (8) putting trust in God, (9) obeying and worshipping, (10) praying to God, (11) expecting God’s help, (12) believing in God’s power, (13) giving thanks to God, (14) struggling to uphold God’s religion, (15) expecting God’s forgiveness, (16) patiently accepting God’s trials, (17) loving the hereafter more than the world, (18) believing in God’s guidance, (19) following God’s instructions, and (20) believing in the perfection of God’s religion (Islam).

The semiotic theory showed that the religious character value of believing in God narrated in SAM verse 1913 is owned by the wheat craftsman. The qualities possessed by the wheat craftsman were analyzed and described using the rheumatic iconic qualisign semiotic sign class. Moreover, the value of having faith in God exhibited by the wheat baker was also described based on the actions and words of the grain worker using the rheumatic indexical sinsign semiotic sign class because it can be seen, observed, and heard by others. It was also discovered that Raja Ali Haji used GDB, TAM, and SGMA to convey the mandate associated with the obligation to believe in God. This belief was inherent in Raja Ali Haji and this indicates the rheumatic iconic qualisign semiotic sign class was used to describe this value.

It is also important to note that Raja Ali Haji uses direct statements without any intermediaries in conveying the message on the value of believing in God based on the truth-values believed by him. This value was described using the semiotic argument sign class and this means it is mandatory for every human being to believe in God according to Islamic teachings. The value was found to be the index of human religious character as a creature created by God. Moreover, the obligation is in line with the teachings of Islam as stated in the word of God in the Qur’an, as follows:

وَمَنْ يَكْفُرُ بِإِيَّاهُۢ وَيَكْفُرُ بِرُسُلِهِۢ وَيَكْفُرُ بِٱلۡكِتََٰبِِۚرَسُولِهِِِ ۡوَ ٱلۡقُوۡلِ ۚ وَمَنْ يُصۡلِبَ ۖۚ وَمَنْ يَكْفُرُ بِإِيَّاهُۢ وَيَكْفُرُ بِرُسُلِهِۢ وَيَكْفُرُ بِٱلۡكِتََٰبِِۚوَمَنْ يَكْفُرُ بِإِيَّاهُۢ وَيَكْفُرُ بِرُسُلِهِۢ وَيَكْفُرُ بِٱلۡقُوۡلِ ۚ وَمَنْ يَكْفُرُ بِإِيَّاهُۢ وَيَكْفُرُ بِرُسُلِهِۢ وَيَكْفُرُ بِٱلۡقُوۡلِ ۚ وَمَنْ يَكْفُرُ بِإِيَّاهُۢ وَيَكْفُرُ بِرُسُلِهِۢ وَيَكْفُرُ بِٱلۡقُوۡلِ ۚ وَمَنْ يَكْفُرُ بِإِيَّاهُۢ وَيَكْفُرُ بِرُسُلِهِۢ وَيَكْفُرُ بِٱلۡقُوۡلِ ۚ وَمَنْ يَكْفُرُ بِإِيَّاهُۢ وَيَكْفُرُ بِرُسُلِهِۢ وَيَكْفُرُ بِٱلۡقُوۡلِ ۚ وَمَنْ يَكْفُرُ بِإِيَّاهُۢ وَيَكْفُرُ بِرُسُلِهِۢ وَيَكْفُرُ بِٱلۡقُوۡلِ ۚ وَمَنْ يَكْفُرُ بِإِيَّاهُۢ وَيَكْفُرُ بِرُسُلِهِۢ وَيَكْفُرُ بِٱلۡقُوۡلِ ۚ وَمَنْ يَكْفُرُ بِإِيَّاهُۢ وَيَكْفُرُ بِرُسُلِهِۢ وَيَكْفُرُ بِٱلۡقُوۡلِ ۚ وَمَنْ يَكْفُرُ بِإِيَّاهُۢ وَيَكْفُرُ بِرُسُلِهِۢ وَيَكْفُرُ بِٱلۡقُوۡلِ ۚ وَمَنْ يَكْفُرُ بِإِيَّاهُۢ وَيَكْفُرُ بِرُسُلِهِۢ وَيَكْفُرُ بِٱلۡقُوۡلِ ۚ وَمَنْ يَكْفُرُ بِإِيَّاهُۢ وَيَكْفُرُ بِرُسُلِهِۢ وَيَكْفُرُ بِٱلۡقُوۡلِ ۚ وَمَنْ يَكْفُرُ بِإِيَّاهُۢ وَيَكْفُرُ بِرُسُلِهِۢ وَيَكْفُرُ بِٱلۡقُوۡلِ ۚ وَمَنْ يَكْفُرُ بِإِيَّاهُۢ وَيَكْفُرُ بِرُسُلِهِۢ وَيَكْفُرُ بِٱلۡقُوۡلِ ۚ وَمَنْ يَكْفُرُ بِإِيَّاهُۢ وَيَكْفُرُ بِرُسُلِهِۢ وَيَكْفُرُ بِٱلۡقُوۡلِ ۚ وَمَنْ يَكْفُرُ بِإِيَّah show that believing in God is obligatory in Islam and this implies the religious character value of believing in God put forward by Raja Ali Haji is in line with the teachings of Islam.
6 Conclusion

Raja Ali Haji’s literary works contain 20 religious character values associated with human relationship with God which include (1) having faith in God, (2) mentioning God’s name every time when starting work, (3) praising God's greatness, (4) willing to accept God's destiny, (5) knowing God, (6) expecting God's protection, (7) fearing God, (8) putting trust in God, (9) obeying and worshipping, (10) praying to God, (11) expecting God’s help, (12) believing in God’s power, (13) giving thanks to God, (14) struggling to uphold God’s religion, (15) expecting God’s forgiveness, (16) patiently accepting God’s trials, (17) loving the hereafter more than the world, (18) believing in God’s guidance, (19) following God’s instructions, and (20) believing in the perfection of God’s religion (Islam).

The index of these values consists of four semiotic classes which include rheumatic iconic qualsign, rheumatic indexical sinsign, dicent index legisign, and argument. Moreover, the values were observed to be in line with the teachings of Islam and this infers the works of Raja Ali Haji mainly originated from Islamic teachings contained in the Qur'an and Hadith. Therefore, these works can be used as a learning material for character education.

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Maritim Culture Literacy Acquisition in Early Childhood (Case Study in Kepulauan Seribu, Indonesia)

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Abstract. This study aims to investigate and explore the acquisition of maritime culture literacy in early childhood. This study used a qualitative case study approach with four early childhood participants aged 4-7 years using semi-structured interviews and observation methods. The findings of this study have demonstrated that the acquisition of maritime culture literacy in early childhood through social interaction with peers and adults, through natural play, and providing support through scaffolding) from adults, especially parents around children. The maritime culture literacy acquisition by children includes (1) maritime knowledge such as coastal and marine ecosystems, the lifestyle of fishing communities and natural phenomena that occur, (2) attitudes to life and the maritime environment, and (3) living habits in a maritime environment.

Keywords: maritime cultural literacy, cultural literacy, natural Play, culture maritime acquisition, early childhood.

1 Introduction

Maritime culture literacy is part of cultural literacy. The cultural literacy of a society becomes a reference for measuring the competitiveness of that community. As an important issue, maritime culture literacy is often placed as a central issue in a country's policy in building social life and human resource development through education. Maritime culture has consequently become ingrained in the daily lives of those who work or live near the sea, whether as a fisherman or in other jobs related to the distribution and processing of marine products [1]. The one of a worthy goal of education is improve culturally literate knowledge and appropriate attitudes that oftentimes cultural literacy interpreted a particular form of aesthetic literacy tends exclusionary. Cultural literacy is a focused activity and critical attitude whereby one becomes conscious of take-for-granted values, attitudes, and beliefs of one's own and other cultural systems.[2] Maritime literacy by UNESCO is declared as ocean literacy. The essential principles of ocean literacy are that the Earth has one large ocean with many features, that the ocean and life in the ocean shape the features of the Earth, that the ocean is a major influence on weather and climate, that the ocean makes the Earth habitable, that the ocean supports a great diversity of life and ecosystems, that the ocean and humans are inextricably linked, and that the ocean is largely unexplored [3]
Maritime culture literacy refers to the knowledge, values, attitudes, and skills of individuals in understanding, organizing, and using knowledge, values, and various experiences to solve problems in life in a maritime cultural environment. Maritime culture literacy includes skills in self-organization, social interaction skills, job skills, and academic skills. Cultural literacy is not only purpose to mastering the skills needed at present but also the skills needed and demanded in the next century, especially the 21st century. A number of 21st-century skills need to be built from early childhood, such as communication skills, critical and creative thinking skills, skills collaborating and problem-solving skills.

The development of cultural values and maritime social system repository, improving ocean and culture literacy, harmonizing local wisdom in sustainable resources, historic seaport revitalization, reviving the understanding of maritime culture, and innovation based on local wisdom development are among the six main programs of Indonesian Ocean Policy [4]. So maritime culture literacy, which refers to the various contexts faced by individuals in which they live and the cultural institutions that surround it, need to be controlled by the people of Indonesia as a maritime [5]. Early childhood is part of society and naturally learns through a process of imitation of the environment. Maritime culture literacy is a literacy that needs to be introduced to early childhood. The introduction of maritime culture literacy in early childhood is closely related to acquiring maritime culture literacy. The differences in ecological and cultural environments will have an impact on the types and content of cultural literacy needed and obtained by children. Likewise, early childhood children who are born, live, and raised in a maritime environment they have a need to master maritime culture literacy. Maritime culture literacy, in general, can be taught through various educational settings in families, communities, and schools. Maritime culture literacy is very important because it provides a context for getting to know maritime culture as a culture that is very close to early childhood living in coastal areas and to overcome social problems in the maritime area. Children born and raised on the island, their daily activities are in the maritime environment. Viewed from the cultural aspect, naturally, early childhood carry out daily activities based on the maritime culture that is inherent in them. Therefore, maritime culture literacy, specifically in early childhood living on islands, will be meaningful if it is by the context of the island environment or the environment surrounded by the sea.

Maritime culture that includes not only traditions but also navigation, all the activities related to the sea, an original perspective for an in depth understanding of coastal cities, over and above the traditional approaches [6]. Maritime culture literacy is related to the skills to recognize, understand and process data, information or information relating to conditions and various aspects of maritime life [6]. Literacy has a meaning that extends beyond the ability to read and understand but leads to more intelligent information processing skills [7], [8]. This meaning provides something different from the understanding of cultural literacy, which emphasizes the process of cultural literacy.

Maritime culture literacy is one of the root problems and, at the same time, a focus on developing maritime culture in the generation of the Indonesian nation. Maritime culture literacy, as an effort to improve maritime culture in Indonesia, must start from early childhood because early childhood is the next generation of the maritime nation. After colonialism, the Indonesian nation's awareness of itself as a marine nation diminished. This state of affairs still exists. Maritime culture literacy is achieved by constructing various types of factual, conceptual, procedural, and metacognitive knowledge about Indonesian maritime life, as defined by the Bank (2006) as knowledge construction, in which the cultural communities in which individuals are socialized are also epistemological communities with shared beliefs, perspectives, and knowledge [9]. The fading of the awareness as a maritime nation then has an
impact on the realm of values in maritime culture that has begun to fade in the life of Indonesian people, especially the island community or fishing community. According to the finding previous research that there is a change in the orientation of the life of the fishing community from marine life to the land [10]. Also, attitudes and behavior as a cultured maritime society have undergone a shift, both in the context of everyday people's lives and in the context of education. The various problems faced by the Indonesian nation as a maritime nation must be resolved through the introduction of maritime culture literacy. This study investigates and explores maritime culture literacy in early childhood.

2 Method

This research uses a qualitative approach. Specifically, the case study was chosen by the researcher because it could explore the data more deeply as well as to understand the participants. The focus of this research is to explore the acquisition of maritime culture literacy in early childhood, especially those living on islands. Participants in this study were randomly selected, namely four early childhood children aged 4-7 years who live on the island of Untung Jawa, one of the islands in the Thousand Islands. Data collection was carried out through interviews and participatory observation. Interviews were conducted by researchers informally when children were playing on the beach. Meanwhile, participatory observation is carried out by researchers directly when interacting with participants. This research procedure includes the stages of data collection, data recording, coding, data analysis, and data interpretation. At the data collection stage, researchers conducted interviews using recordings on cellphones and recorded them in field notes. Then the recording is transferred to the computer. Researchers listen again to the recording to be matched with the field notes that have been made. The observed data obtained were also recorded in field notes. Field notes from interviews and observations, then the researcher coded the data. The data coding was then carried out by an analysis of Campbell's matchmaking pattern, which consisted of 3 main stages, namely the preparation of a general statement, the selection of a special statement, and the development of a concept map. [11]. In the final stage, an interpretation of the results of the data analysis.

3 Findings and Discussion

3.1 Social interaction as apicenter of maritime culture acquisition

The process of social interaction in early childhood with peers and adults is the main epicenter in maritime culture literacy acquisition. Early childhood acquire maritime culture literacy through the process of social interaction with peers through various activities, tools, and learning resources from the environment around maritime life, because he ability to effectively begin and maintain social interaction with others while avoiding incorrect social behavior is referred to as social interaction. [12]. The activities of social interaction which are usually catching or fishing, processing shells into toys, building boats, looking for shells, looking for sea turtles, swimming and playing with sand.
“At first, I could not be fishing, but when I played with my friends, then invited me to fish on the dock. My friend tells me how to hook fish—besides that, taught by my father. On Sundays or holidays, my father invited him to catch fish by boat while being introduced to seawater currents, tidal waves, sea breezes, and caught fish. Because my father and friends often invited me to fish, finally I was able to be fishing” (Interview N)

“For me, I was afraid to swim at the beach. My friends always ask me to swim. My friends pulled me, so I wanted to swim. Finally, now I can swim and am not afraid to swim on the beach anymore (Interview U)

Children and their peers collect shells on the beach to play together while playing in the sand. They interact with each other, tell each other about the activities they do. Other activities were children looking for shells and seagrass on the beach. The clams and seaweed they collect are then cooked by one of their mothers and eaten together. Children were able to describe the characteristics of each type of fish and grass they got (Field notes 1)

The process of social interaction that builds early childhood maritime culture literacy occurs in interactional situations with peers during school through playing at school, after school, and during school holidays on Saturdays or Sundays. Social interaction one of a type of play that activities in which they engage are thus incidental to their need for group association and enables more effective resource exchange [13], [14]. Maritime culture literacy as part of literacy involves cognitive processes [15]. The social interaction context would allow children a cognitive benefit [16]. Places that are usually in social interaction are beaches, mangrove forests, docks, ground, and gazebo places to gather. Children in the marine environment carry out social interactions. The marine environment for people living on the island is a public place where they usually interact because public places can support social interaction. [17].

3.2 Natural play gives a dominant role in maritime culture literacy acquisition

The findings of this study found that natural play is the main way for early childhood to interact socially and share knowledge, attitudes, and behaviors related to mastery of maritime culture literacy. Playing is described as a variety of activities and behaviors that children engage in [18], [19]. In early childhood, they love to play and naturally carry out various activities through play, because play is pleasurable, enjoyable, entertaining, self-directed, and intrinsically driven [18], [20].

“I played with my friends on the beach. In the sea, much fish, including pufferfish, stingrays, starfish, and others” (Interview Y)

Children play together with their friends on the beach. They play sand, play hide and seek, play romp, and so children play together with their friends on the beach. They play sand, play hide and seek, play romp, and so on (Field notes, 2)

Based on interviews regarding natural play activities carried out by them, it shows that natural play occurs in early childhood in various contexts of place, situation, or event and time.
Natural play activities are carried out by using places that change and move. There are such as from the beach location to gazebo, from fishing to shifting to looking for kerrang, natural play activities can be done in the morning, afternoon, and evening using various objects or goods that are found around the coastal environment and its surroundings. Children play by taking advantage of the natural environment around the beach. Through their participation, the natural environment for play has been enhanced [21] and is the importance of for the child’s development [22]. Natural play in early childhood will help child development. Children explore the natural environment of the beach while playing with their friends, which naturally develops aspects of their development. Risky outdoor play in the style of natural play [23] influenced and had good effects on a child's development [22], [24]. When children doing the natural play in a beach environment, the children build a relationship with the natural environment around them. Nature play can be a powerful way for children to engage with the natural world [25]. Natural play sometimes carries out doing various traditional island children's games. By doing natural play activities, children can provide the opportunity to freely express themselves and develop their abilities without feeling tired or embarrassed by adults, and Nature play provides more open-ended chances for movement, affordances, and the development of social and problem-solving skills. [26].

3.3 Scaffolding from parents support maritime culture literacy acquisition

Parental support has an important role in providing an intervention to help early childhood acquire diverse maritime culture literacy. The process of providing assistance to youngsters in order to help them overcome difficulties beyond their current skills or attain a goal that would be impossible for them to achieve on their own [27], [28] and a significant influence on the form of parental scaffolding [29], [30].

“My father taught me how to be fishing, for example, find out bait to fish and how to hook the hook. Father also told me that fish are dangerous and not, including telling me that sea urchins can sting and cause itching.” (Interview U)

“My mother told me if the shells are still alive, their shells will be closed, but when my mother cooks the shells, the shells will open. Mother also told me about the types of fish that were edible and which could not eat. My mother said to me if the shells are still alive, their shells will be closed, but when cooked, the shells will open. Mother also told them what kinds of fish were edible and which were not” (Interview I)

“My father and mother taught me to become tour guides for tourists. I was following when Mom or Dad were guiding tourists, after finishing driving then Mom or Dad explained how to tour guide (wawancara U)"

These interviews indicated that parental support in the form of scaffolding helped them to understand maritime culture literacy. Parental support is carried out by giving examples and teaching children directly in mastering maritime culture literacy, such as using a hook and hooking a fishing line, choosing the type of bait, looking for types of shellfish, identifying dangerous fish, and looking for edible types of seagrass. Parents provide skills of maritime culture literacy by scaffolding with giving support to children so that they can be
mastered independently without help gradually. For example, when teaching fishing, at first, the child only sees the parent putting the bait on the hook; the next stage, the child begins to learn to put the bait on the hook with the help of the parent; until the final step, the child can put the bait on the hook themselves without help from the parents. Parental scaffolding may help children transfer skills learned from parent–child interactions, as well as parents develop more developmentally sensitive approaches to similar independent problem-solving contexts, as the child practices solving the problem alone to the greatest extent possible when the adult shifts the level of support according to the child's performance [31], [32].

4. Conclusion

Maritime culture literacy acquisition occurs through a process of early childhood social interaction in various times, places, and contexts of events. Also, natural play is the best event and experience for children to know and learn various types of maritime culture literacy. In natural play, children share knowledge, tools, and ways of playing, which contain a lot of maritime culture literacy content. Strengthening the acquisition of maritime culture literacy is also provided by adults through scaffolding in the form of giving examples in recognizing, understanding, and demonstrating specific skills concerning maritime culture. In conclusion, maritime culture literacy in early childhood based on the process of social interaction, natural play, and scaffolding from parents, namely skills to know and understand sea conditions such as ocean currents and winds, tidal waves, the dangers of several types of animals; the skills of baiting a hook, using fishing gear, and fishing by various techniques; identify types of marine animals and grasses which are edible and which are dangerous for consumption; communicate well to be a tour guide for tourists. These findings suggest that do more future research to explore the specific maritime culture literacy in other contexts and cultures.

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References


Malay Folklore "The legend of Alut Island"  
As a Media of Character Education  
Maritime Society

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Abstract. The Maritime Society of the Riau Islands Province has various forms and varieties of folklore, for instance the Legend of the Alut Island. This legend has the value of local wisdom that is appropriate for character education media at the primary and secondary education levels. The purpose of this study is (1) to describe the educational value of Alut Island folklore characters, (2) assist teachers in providing literary teaching materials (folklore), (3) help the availability of learning materials about folklore, and to (4) introduce students about the folklore of Alut Island. This research includes qualitative research. The research method uses content analysis method. Data collection techniques using document techniques and the data analysis using structural techniques. The result of the research is that the Legend of Alut Island contains character education values, for instance religious values, hard work, and responsibility values.

Keywords: Folklore, Legend, Alut Island, Character Education

1. Introduction

Riau Islands province is a province that is mostly surrounded by the sea. It can be said, the area of the ocean is greater than the land area. Therefore, the people of Riau Islands Province can be considered as Maritime Communities because the sea is an object that is used as a source of life (economic, social, political, legal, and cultural). As a source of cultural life, the sea for the people of Riau Islands Province is also a source of inspiration to generate various forms of folklore, for instance: sagas, fairy tales, myths, legends, poetry, pantun, and so on. Various forms of folklore are now spread in several places (districts / cities).

Folklore as an asset of Malay culture certainly needs to be preserved and developed so that its existence is not extinct. In addition, so that the younger generation of Malays can know and enjoy it as an educational consumption, thus, the younger generation of Malays is expected to love it and care in preserving and expanding it. In addition, it is also expected that the younger generation can explore the richness of the values contained in it and can make it as a medium of moral education, religious, culture, and educational media (character education). Thus, the identity of the Malay that has existed so far can continue to be preserved, as the philosophy "Takkan Melayu Hilang Di Bumi".
Viewing the conditions that occur today, there is a concern that is felt by observers of Malay folklore, if not increased attention and action, folklore as an asset of Malay culture that has existed so far, will be lost. This loss can be caused by several things. First, the existence of native folklore figures is getting less and less in number. It is difficult today to find who is really able to master existing folklore so that it can be the source of researchers who will do existing folklore. This is much felt by the researcher when taking data into the field related to the study of folklore. Time is often wasted in vain (not in accordance with the results obtained). The researcher often finds sources who only master a few existing folklore, so researcher often feel dissatisfied.

Second, the process of inheritance of folklore, from the old to the young has not worked as expected. Generally the cause comes from the side of the younger generation itself, such as: the attitude of the younger generation who consider folklore unnecessary / useless / ancient. Another attitude is not to take care, whatever, whether there is or not folklore. Both of these attitudes are certainly very detrimental to the younger generation itself. They increasingly do not know the riches and magnificence of folklore. There is a possibility, low love of young people to existing folklore because they do not know deeply in folklore. If they knew it, we would be sure their attitude would turn 180 degrees (loving folklore). It is our responsibility as researchers to provide more information to today's young people so that they love the folklore around them more.

Third, the process of transliteration of Malay literature, from oral form to writing form so far has not worked as expected. The number of Malay folklore books is still small and limited in spread. As a result, there is not much that can be known the form and diversity of Malay folklore that exists among students and folklore enthusiasts. Maybe this is also the cause, why foreign researchers have very little attention to do the study of Malay folklore that exists today. The reason is that they still have little information regarding the form and diversity of Malay folklore that exist. This is very different from what happens in the people of Java and Bali, whose people have long been accustomed to writing culture so that they have written documents that have a lot to do with their culture. Things are very different from the Malay community, which has been more accustomed to its oral culture. As a result, we are poor with written documents. We are excited, Malay figures have realized the shortcomings so far, so they began to embed a writing culture and generate to several documents related to Malay folklore.

Fourth, the existence of local content (folklore: fairy tales, legends, and myths) in the school curriculum at various levels in Riau Islands Province, has high expectation in introducing folklore early on to students so that students know, understand, and love existing folklore. However, it is unfortunate that the implementation process has many obstacles, for instance: (1) teachers who teach these subjects are not teachers who are from the background of literature faculty graduates, but teachers in other subject fields given additional assignments by the principal. The result is certainly imaginable;(2) the subjects of local content of folklore have not been supported by the availability of sufficient numbers of folklore books, which can be the reading material of students at school and at home; and (3) teachers who are given the additional task of teaching folklore subjects, often not teachers whose hobbies read folklore and the
experience of reading folklore is still very minimal so there is not much that can be obtained by students in the classroom while the learning process takes place.

Fifth, media support (electronic and print) has been low to existing Malay folklore, such as: lifting some existing folklore into the form of film scenarios (soap operas or big screens). Even if there are already numbers that are not comparable to folklore that comes from outside. It is natural why our children today are more familiar with folklore from the outside than what is in their midst. The cause is still unknown. Is the director afraid if the film will be quiet when it is aired or indeed because the film directors do not get references about some of the best Malay folklore that already exists to be able to be lifted into a film scenario?

Sixth, throughout the observations that researchers have made so far, the results of Malay folklore studies (in the form of research) are still few in number. There are still many folklores that have not been chosen as objects of study. Both among students and lovers of Malay folklore. Some folklore that exists, there is still a lot of information on the wealth of value contained in it. Whether in the form of fairy tales, myths, or legends. Likewise in the rich form and diversity of Malay society traditions.

The purpose of this research is (1) to describe the values of character education contained in existing Malay folklore, (2) help teachers of local content subjects (folklore) at various levels of education (elementary and secondary) in the provision of teaching materials so that curriculum objectives can be achieved, (3) help students prepare learning / reading materials in local content subjects (Malay folklore), and to (4) motivate students to love existing folklore so that they have the care and responsibility to nurture and develop it going forward.

In Online KBBI (Kamus Besar Bahasa Indonesia) it is loaded that the word 'maritime' is related to something that smells of sea, sea voyage, or sea trade (https://kbbi.kemdikbud.go.id/entri/maritim). In the Alphabetical Thesaurus Indonesian [1], it is contained that the word 'maritime' is nautical, marine, maritime. Based on these two sources, the phrase "maritime community of Riau Islands Province" can be interpreted as the people of Riau Islands Province living along the coast / coast that makes the sea as a place of daily activities, people who use the sea as a source of life, or people who make the sea as inspiration to generate their creative works (such as: folklore: fairy tales, myths, and legends).

Literary works such as folklore that makes the sea as an object, can be said to be a work of Maritime Literature. Malay folklore can be said to be maritime folklore because many Malay folklore that exists uses the sea as the setting of the story, for instance: the story of the Legend of Paku Island, Tapai Island, Panglima Jangoi, Pilang Island, Senua Island, and Nasi Strait. This is as Djoko Saryono revealed in his paper on, "Seminar on Maritime Literature and Rituals: Surfing Literature, Exploring Culture" which is peddled by HISKI State University of Jakarta August 9, 2021, that Maritime Literature is a literary work that is closely related to the people of the sea / coastal / live on the beach. People who make the sea as a source of life and daily activities. Maritime literature is very interesting to study. There are 5 aspects that must receive special attention in the study of maritime literature, namely (1) how preservation steps should be done, (2) how the process of creation / generation, (3) how the study has been done so far, (5) how connoisseurs / readers so far. These five steps are also processes that must be done in the revitalization of maritime literature in the future [2].
According to Yock Fang (2011:1) [3], "Folk literature is literature that lives in the midst of the people. Spoken by mothers to their children while in the cradle. Likewise, the storyteller tells it to the villagers who cannot read. These folk literary forms include: stories, expressions, proverbs, songs, dances, traditional customs, laws, puzzles, folk games, beliefs, and celebration." So, it can be concluded that folklore is part of literature or folk literature.

The study of folklore certainly has many benefits. First, it provides information about the way of thinking of a particular group of people. Second, providing information about people's lifestyles. Third, providing information about problems that have occurred in community groups [4]. As for the form of folklore there are 3 groups, namely: myths, legends, and fairy tales [5]. Folklore as a product of oral literature remains an interesting study to this day. According to Ong [6] oral literature has always existed in human life as a basic authorship or reflection of native human culture, and cannot be underestimated.

The Research and Development Agency for the Curriculum and Books Center of the Ministry of Education and Culture in 2011 has compiled a book related to character education. The book contains 18 types of character education, such as: (1) religious, (2) honest, (3) tolerance, (4) discipline, (5) hard work, (6) creative, (7) independent, (8) democratic, (9) curiosity, (10) spirit of nationality, (11) love of the homeland, (12) appreciate achievement, (13) friendly / communicative, (14) peace love, (15) love to read, (16) care about the environment, (17) social care, and (18) Responsibility. This Eighteen values of local wisdom used as a basis for folklore analysis that is used as a sample.

Based on the results of the researcher's monitoring, there are several folklore studies that have been done by previous researchers. Novi Anugrajeki (2021) [7] with the title, "Ritual Laut Muncar dalam perspektif Ekowisata." The results of the research obtained are sea rituals that are always commemorated by the Muncar community has become ecotourism so that it makes a positive contribution to the progress of the world of tourism. Muncar sea ritual is not only an element of community entertainment but also as a tourist event.

Junaini, Agustina, and Canrhas. In 2017 [8] through the title of her research "Analysis of the Value of Character Education in Seluma Folklore" obtained the results of her research that Seluma folklore contains the value of character education courage, mutual attitude, discipline, self-respect, fairness, caring, mutual protection, respect for others, deliberation, and the value of gotong royong. Furthermore, Merdiyatna in 2019 [9] raised the title "Cultural Values in Panjalu Folklore". The results of the research obtained are Panjalu folklore contains noble cultural values, local wisdom, and wisdom. Suhardi and Riau Wati in 2017 [10] raised the research title "Analysis of Cultural Values (Malay) in Oral Literature of Tanjungpinang City Community." The results of the research obtained are oral literature of the people of Tanjungpinang city contains cultural values (Malay), such as the value of responsibility to yourself, society and the environment.

Another researcher, who also conducted research related to folklore is Arief Setyawan in 2017 [11]. The title of his research is "Content of Character Education in Folklore in Pacitan." The results of the research obtained are Folklore from Pacitan as a literary work containing the educational value of characters that include: (1) religious; (2) Honest; (3) hard work; (4)
creative; (5) curiosity; (6) the spirit of pride; (7) appreciate performance; (8) peace love; (9) care about the environment; (10) social care; and (11) answer. These values become the basis that folklore in addition to being used as a medium to introduce stories that are believed by ancestors to their descendants, can also be a means of educating characters in themselves.

2. Method

This research uses a method of content analysis, namely the content of a communication, especially verbal communication in the form of language [11]. Furthermore, the data was collected using document techniques (Malay folklore), namely the Legend of Alut Island. While data analysis uses structural analysis techniques, namely describing existing story units (plots). Furthermore, explain (interpret) according to relevant theories to find the values of character education in the story [9].

3. Results and Discussions

3.1 Results

Malay folklore that until now is still preserved and developed by the maritime community of Riau Islands Province is the "Legend of Alut Island". Alut Island is one of the islands located in Lingga Regency, precisely in North Lingga subdistrict. The word "alut" means ship. Alut Island is a ship-shaped island. This island has a story. It is said that there used to be a child who disobeyed his mother. The boy's name was Alut. Alut and his mother lived in an old hut, not far from the harbor where the large ships were leaning.

Alut after adulthood migrated and left his mother alone in the village. Having always worked hard in the region, Alut eventually became a successful young man. He was appointed captain of a large ship. Day by day Alut's life is getting better. Once the ship that Alut was riding stopped on an island. The island is none other than his own homeland and the place of his mother who has always longed for his arrival.

One morning, Alut's mother got word that her son's ship named Alut docked at the port to fill the water and food supplies to sail. His mother was also informed that his son had now become a successful man, a captain of a large ship, and was wealthy. That same day the mother came to the port where her son's boat was leaning. He brought some of her son's favorite food. In the heart of Alut's mother has been imagined, surely her son is now an adult. He has become a brave man. Her life will soon be good because her son has succeeded.

What Alut's mother imagined turned out to be very different. Alut did not like to come to his mother who looked already hunched, shabby and poor. Alut didn't admit that it was his mother. Even Alut rudely drove his mother to leave his ship. It was heartbroken for his mother at the time. She could only cry out of her son's boat. Now Alut's mother was furious. Alut's mother prayed to God that her son's ship would be sunk in the middle of the sea as a lesson because it had done badly to her own mother. Shortly after the ship left the ship, it was buffeted by strong winds and sank. Then came an island. The local people call it Alut Island.

3.2 Discussions
Based on the storyline and the content of the story contained in the legend of Alut Island, a content analysis can be carried out, in the form of the values contained in it.

1) Religious Values

The legend of Alut Island contains religious values, namely an unrequited child, a child who disobeys his own mother, and a child who does not follow the teachings of Islam. A child can ideally give affection to his mother or both parents as they have done, having raised him into adulthood. Even the mother had been pregnant for 9 months in difficult circumstances and the struggle between life and death during her birth. It is a great sin when a child is rude to his parents. In Islamic teachings it is said that if a child wants to taste the pleasures of the surge in the hereafter then happy both parents (fathers). The word of Allah in Al-Quran states:

“…do good to both your parents” (An-Nisa:36).

The 36th verse of Surat An-Nisa clearly warns us as children to always do good to our parents. Al-Quran in the next verse also states:

"…Do the best you can to your parents. If both are old and in your care, then do not say to them the words "ah", do not snap at them, and speak glorious words to them." (QS: Al-Isra ayat 23-24).

The meaning of the verse is that we as children are obliged to do good with our mother and father. Especially when they are old, it is our duty as children to love and love them. As children, we are forbidden to speak words that can hurt our hearts or feelings. Use words that show them words.

Another verse relating to the obligation to do good to a child to both parents is also found in Al-Quran, namely:

“…Do good to your parents! Give thanks to Me and to your parents, only to Me will you return.” (QS Luqman: 14).

From some verses in the Qur'an it is clear that we as children must do good to both parents (father and mother). Don't be rude to both. Say kind words to them (your mothers)!

Alut's character could drive his mother away, when his mother missed him terribly. His mother was very proud to see that her son had succeeded. But what Alut's mother got was the rudeness of speech spoken by the child who had been very dreamed of taking refuge in his old age. Alut has the heart to make his mother sad crying sobbing. Alut could be rude to his own biological mother to the point of dragging her outside the ship. It was outrageous to Alut's actions to his mother. Alut deserves a great punishment from God. This is as happened in the story, Alut's ship was sunk by God through a large wave that came crashing his ship until it sank and made the island with his ship.

2) The Value of Hard Work

The change of Alut's character from an ordinary person, as a large crew member until he was successfully appointed as the captain of a large ship is clearly a result of hard work done by Alut figures. Hard work until he was successfully appointed captain of the great ship also by the intervention of God. The success achieved by Alut figures should be more grateful to God.
Did Not God say clearly that if his people were grateful for the blessings and gifts He gave, God would have added them from unexpected doors? On the contrary, Allah also warns that whoever is not grateful for the blessings that have been given, Allah will bring down His cruel punishment.

Alut included a figure who was ungrateful to God for the abundance of sustenance he received. He became arrogant and forgotten himself. God warns in the Qur'an against proud people:

"Worship God, and do not associate him with anything. And do good to your parents, relatives, orphans, the poor, close neighbors and distant neighbors, and your colleagues, ibn sabil and servants. God does not like those who are proud and proud of themselves." (An-Nisa:36)

He was embarrassed to see his mother who was already bad, hunched, and weak until he could be rude to his own biological mother. God certainly doesn't like this. God sent down his punishment to the Alut. All his possessions, including his own, were sunk by God into the sea. This can really be a lesson for those of us who see and read this story, to always give thanks to God and ask that the sustenance we get is always blessed by God. It's a lesson to always respect and love our parents. The blessings of life will come if we always love our parents and always give blessings to God.

3) Value of Responsibility

The legend of "Alut Island" also contains the value of responsibility in it. Alut is a character who does not have a sense of responsibility to his own mother. Supposedly, after he was successful and successful in working, in addition to being responsible to his wife and children, Alut also had a responsibility to make his mother happy. Did not the figure of Alut when asking permission to leave the house promised if he was successful in the region, he would return to the village to make his mother himself happy. However, what happened? Alut did not keep his promise. He ran away 100 percent of his promise. Never mind sending his mother money for daily shopping, just going to his mother he does not want to.

Alut's character is even ashamed to have a poor and shabby mother. Alut does not realize that he comes from his poor and shabby mother. If the character Alut has a sense of responsibility, Alut's character should give a lot of money or property to his birth mother so that his mother becomes a rich man. Likewise, if the character of Alu sees his mother who is shabby and ugly, the character should buy good clothes for his mother, buy gold in the form of rings, necklaces, bracelets, and so on so that his mother looks luxurious. However, none of this was done by Alut. Alut was just hateful, ashamed, and didn't want to do much for his own mother. This attitude is clearly the attitude of a child who is not grateful to both parents.

Based on the contents of this Alut Island legend and the values of character education contained in it, the Legend of Alut Island can be used as a medium of character education, especially for students in elementary and secondary education levels. Through this Legend of Alut Island, students can be invited by their teachers to think and behave right through Alut figures, such as: how to respect and love both parents (father and mother). In other words, the material of the Legend of Alut Island can be used as teacher teaching material in the classroom in order to foster good student character.

Stories similar to the legend of Alut Island actually still exist, such as: Legend of Tapai Island, and Legend of Pilang Island. The folklore is also themed children who are not grateful
to their parents. The Bachelor figure in the Legend of Tapai Island also ended tragically, drowning with his ship in the ocean. Pilang figures in the legend of Pilang Island are also the same, namely drowning with his ship in the ocean and becoming an island.

4. Conclusions and Suggestions

Based on the results of the analysis that has been done it can be concluded that the Legend of Alut Island contains the value of character education, such as: religious values, hard work, and the value of responsibility. Judging from the aspect of religious values (teachings of Islam), Alut figures are figures who have attitudes contrary to the teachings of Islam, namely children who must be polite, loving, and loving both parents. From the aspect of hard work, Pilang figures are hard workers to successfully become a respected person. However, his success made him arrogant and strayed into the path of not true. From the aspect of responsibility, Alut is an irresponsible figure, especially to his own mother. Alut Island folklore is very suitable to be chosen as teaching material and studying in the classroom. Through this folklore, students have indirectly instilled an attitude of respect for both parents at home.

References


Symbolism In The Structure Of: Study Of Poetry
“Retak Mencari Belah” By Junewal Muchtar

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Abstract. The purpose of this study is to reveal about the symbols and meanings of the symbols contained in the poetry structure of Junewal Muchtar's poetry. The theory used in this research is symbol theory which analyzes an object representing a symbol. The method used in analyzing this poem is descriptive and qualitative methods. The source of the data was obtained from the collection of poetry Retak Looking for Belah by Jenewal Muchtar. The results of this study indicate that the symbols contained in 46 poems by Jenewal Muchtar are living things and objects. Symbols of living things include humans, animals and plants which have the meaning of piety, faith, honor, power, loyalty, strength, peace and so on. as well as objects including anchors, bottles, glasses, and others which have the meaning of being transparent, and easily cracked.

Keywords: Symbolism, Poetry, Structure

1. Introduction
1.1 Background Of The Study

Basically, poetry is an expression of emotion. Poetry usually appears in the form of sections (paragraphs) and chapters in several kinds of structures such as parables, allegory and figurative language. Poetry is a literary work in the form of responses and opinions of poets on various things [6]. This thought is then embodied by using beautiful languages and having an inner and physical structure as a characteristic [12]. Based on the scale, the form of poetry can be said as a literary work to convey all aspects of life deeply and broadly with far fewer words than other literary works. There are two types of poetry, namely old poetry and modern poetry. Old poetry can be in the form of rhymes, talibun, mantra, and gurindam [2]. Modern poetry can be in the form of narrative poetry, lyric poetry, and descriptive poetry. Modern poetry is usually called free poetry because it is not constrained by rhyme, number of lines, and so on. There are several ways to write poetry. The first stage is to create a framework, starting from determining the type of poetry. If the reader wants to write old poetry, then the rhythm and rhyme must be determined in advance so that the message to be conveyed can be understood. The second stage is to determine the title to make it easier to limit the expression of emotion to be conveyed through poetry. The third stage is the creative process by reading references or imagining. Literature is an expression of thoughts, feelings, ideas, and beliefs in the form of words, pictures, and actions [9]. Literary works can be in the form of imaginative literary works with the aim of explaining, explaining, understanding, opening new views, and giving meaning to the reality of life so that humans better understand and behave properly in the reality of life, in addition, there are non-imaginative literary works with the aim of showing facts that tend to use denotative and fixed expressions.
1.2 Problem Formulation
Based on the background above, how are the symbols in the structure of “Retak Mencari Belah” poetry by Junewal Muchtar?

1.3 Purpose
This study aimed to analyze the symbols in the structure of “Retak Mencari Belah” poetry by Junewal Muchtar?

2. Method
This study was carried out using descriptive and qualitative methods. Qualitative descriptive methods merely describe facts or language phenomena empirically as in reality. Thus, it is hoped that the data will show the situation as it is [5], [8].

This study used library techniques and note-taking techniques. The library technique is a method of collecting data in the form of goods or written objects [10]. Such as "Retak Mencari Belah" poetry by Junewal Muchtar [11].

The note-taking technique is a method of collecting data by reading, taking notes, and understanding theories related to the problem required by quoting directly and indirectly and then reflecting on it.

Poetry is a work of art with a special meaning of beauty. Poetry as a work of literary art can be studied from two main elements, both of which consist of elements that bind each other and all of these elements form a whole meaning given that poetry is a structure composed of various poems. Poetry consists of solid building elements because they cannot be separated without relating other elements [7].

3. Literature Review
Poetry is a form of literary work using beautiful and meaningful words [3]. Poetry is a literary work in the form of responses and opinions of poets on various things. This thought is then embodied by using beautiful languages and having an inner and physical structure as a characteristic. According to Burke in Setiawan, works of art, including literature, "are strategic namings of situations" so that readers can better understand and "control" social events through works of art [13].

In Poetry there are two elements, namely intrinsic elements an extrinsic elements [12]. There are seven Intrinsic Elements of Poetry, namely:

a. Theme
Theme is the main idea or idea of poetry. Every poetry has many things to discuss, but must have one main topic of discussion. The main topic is called the theme.

b. Feeling
Feeling shows the thoughts and feelings of the poet that are able to influence the reader or listener after reading or hearing poetry. Feelings can be happy, sad, touched, and so on. The more conveyed the feeling to the reader or listener, the better the poetry will be.
c. **Imagery**

Imagery is an image generated when reading poetry. Imagery touches the reader or listener through hearing, sight, touch, and others. Imagery aims to make the reader or listener able to understand and really understand the meaning of the poetry. Imagery is usually categorized as follows: sight, hearing, touch, smell, taste, movement, feeling, and intellectual.

d. **Symbol**

The symbol is an element showing that the words in poetry have other meanings and purposes. For example “Heart is Made of Steel”, the word “Steel” can symbolize the strength that is hard to break.

e. **Tone**

Poetry is composed of certain words with meaning and is also beautiful to hear. These words serve the overall meaning in poetry. The tone in question is the arrangement of words that are meaningful, beautiful, and also interesting to hear the sound so that it is interesting for the reader or listener.

f. **Language style**

The basis of a poetry structure is language. Each poet has a different language style, this language style is the choice according to the thoughts and feelings when making the poetry. There are several things that cause differences in the choice of words in poetry, including differences in times, life experiences, cultural differences and others.

g. **Message**

Every poetry has a certain meaning, after understanding the theme, meaning, and sound in the poetry. The message in a poetry is usually conveyed implicitly, so the reader must really understand the poetry correctly in order to get the message.

**Extrinsic Elements of Poetry**

Extrinsic elements are not directly related to poetry, namely:

a. Social conditions of the poet  
b. Neighborhood of poet  
c. Profession of poet  
d. Experience of poet  
e. Economic conditions of the poet  
f. The role of the poet in society

Symbols denote or represent and give the impression of something else. For example, the dove is a symbol of peace [5]. A symbol is a sign that can be seen and can be replaced with an idea or object. Symbols are usually interpreted in a limited way as a traditional symbol or something constructed by the community or individual with a certain meaning. Symbols can be in the form of many things that are considered to give meaning to literary works. Symbols can explain an event based on imagination.

In traditional literary usage, symbols connect words or thoughts with certain objects, scenes, or actions, although they are fundamentally different, they have certain semantic relationships [13].

According Martin, B. & Felizitas, R. in Setiawan, In Peirce's semiotics, the term symbol denotes a sign (signifier) whose relationship to its object (signified) is entirely arbitrary or based on convention. An example would be the word 'car' where there is no causal physical link or resemblance between the sign (the word car) and its object. In his
system of classification, Peirce distinguishes signs used as symbols from those used as icons or as indices [13].

According to Finkelstein in Setiawan, there are three kinds of symbol, they are: Archetypal symbols, conventional symbol and personal symbol. Archetypal symbols are the universal roles everyone must eventually play out in the act of consciousness integration [13].

4. Result And Discussion

4.1 Symbolism in the poetry by Junewal Muchtar

Symbols in the poetry by Jenewal Muchtar can be grouped into two elements namely living things and inanimate things. The symbols in the form of "living things" are humans, animals, and plants, while "inanimate things" are anchors, bottles, glasses, and others [1], [11].

4.1.1 Sejenak di Bumi

Poetry has a symbol of a person sitting in a back position with the meaning of gratitude, faith, and piety which means accepting God gifts wholeheartedly:

![Fig 1. A Person sitting in a position](image)

Kun katanya
jadilah aku darinya
Maka berlayarlah
si anak muda itu
Dengan jalan pikirannya
jauh melangkah
Bahkan
sungai
gunung
ia daki
Dengan amarahnya
di bumi
Terkadang pikirannya
hanyut dimalam gelap
Lunglai
jiwanya kian jadi hutan
Diapitnya sejuknya rimba
Walau hujan terus alirkan dendam
Pada kehidupan
si anak muda itu
Terus memaki-maki laut
Dengan siulan malam
Terkadang anak muda itu
Ingin sejenak lagi
menuai hidup
walau maut menjemput

4.1.2 Tausiran Selamat Jalan
Poetry is symbolized by a tree showing strength and tranquility which means an atmosphere of peace, calm and physical ability.

![A Tree](image)

Tak ada lagi kata
yang buat aku tertawa
Apalagi reuni
yang lagi ngantor
dan Sibuk ngurusin negeri
Tak ada lagi suara hp
yang mengajakku mncing
di air tenang
Yang ada kenangan
selembar proposal terakhir
Untuk mengabari dirinya
terserang penyakit jantung
Dan ia pergi
dengan kemarahan padaku
Tentang dirinya lelah
dan kaku

4.1.3 Retak Mencari Belah
Poetry is symbolized by bottle which has a closed meaning, rigid and cannot be changed.
Fig 3. Bottle

Seorang penyair marah dan amuk
dipucuk darahnya
Mengalirkan kata-kata sumpah
dan caci maki
Kata penyair itu dengan nada dan
bahasa marahnya diterik matahari
Dimana-mana
kini tanah airku semakin retak
jiwanya terombang-ambing dilaut
gelap
Disana-sini tak harmonis
antara kampung anu
Bertikai soal tanah
yang digusur investor kapitalis
Antara penyair yang satu ini
menulis puisi dicelana kolornya
dengan kata-kata yang tak sedap
Ah, tanah airku
kini semakin retak dan porak poranda
ada kalimat bait puisi
Caci maki tentang presiden
merengek minta naik gaji
belum lagi para anggota dewan
Merampok uang negara dari hasil
kongkalikong
rupanya kalian wakil rakyat
tukang bohongi rakyat
puisi yang ditulis penyair itu
sampai kemalaikat
sampai ke tuhan
Ah, kalian telah buat negeri ini
menjadi retak menjadi belah
tanah air kami
Kalian jadikan lahan
mencari uang dan kekayaan
matahari terus menjalarkan perih
Ke tubuh penyair
yang lagi marah dan amuk itu
Di sepanjang jalan merdeka
penyair itu Terus menulis puisi
batinnya menjerit
Aku warga negara Indonesia
tapi aku kalian Perlakukan
aku sebagai sampah
penyair itu terus mencaci maki
mulutnya terus komat-kamit membacakan puisi retak mencari belah
ah, kalian puki mak

4.1.4 Puisi Buat Anak dan Leluhur
Poetry is symbolized glass which has a transparent meaning that is open to decisions.

Fig 4. Glass

Tak ada yang ku berikan
hanya ilmu dan agama yang kuberikan
Buat anak-anak dan leluhur
Jangan tanyakan tentang harta
Sejengkal tanah pun kita tak punya
hanya halaman puisi
tempat kita bersuka-suka
Apalgi sebongkah emas permata
jangan kalian tanya nanti
Berangkatlah wahai anak-anakku
juga cucuku
jadilah kalian api
penerang hidup dan bakar
Jiwa semangat kalian
agar kalian mampu belajar
Dengan kehidupan yang jujur
dan beramanah
ini yang dapat ku berikan pada kalian
Anak-anakku juga cucuku
jangannya takut jika benar
tantanglah kehidupan yang keras
Namun kalian pasti sampai
Poetry is symbolized by anchor that has the meaning of strength, namely immunity, resilience, toughness, skill, and etc.

Fig 5. Anchor

Di tanjung riau
ada darah ngalirkan darah
di perahu malam
Berlayar diantara debar
kisah anak manusia
mengais bintang dan bulan
ditaman
Jam berdetak
tentukan nasib di liang
kubur tak bernama

Ada warkah tak terbaca
pada lembaran hati
melintas dipersimpangan gundah
Bocah-bocah berjalan kaki
dengan lumpur
keharuannya

Tak ada
berkas senyum kuntum
di tanjung riau
Tawanya membakar bocah-bocah
dengan batu karang dan bakau
kering diatas langit

Ditanjung riau
para bocah tadahkan tangannya
dipersimpangan jalan raya
Antara perih dan luka
dihu riau
para bocah menghitung nasibnya sekali lagi
Yang tak dapat menjamah
sepotong roti
ditanjung riau

4.1.3 Syair Engku Putri
Poetry is symbolized by centipede which has the meanings of strength and power, namely the ability to control the attitude of oneself and others directly or indirectly.

Fig 6. Centipedes

Adalah kisah yang pernah kugubah
dalam madal kehidupan
Ladang hati dan jiwaku membara
di selembar cogan
Yang kau jadikan kisah
seribu satu malam
pada pulau kahyangan
Yang bertuangkan putri sigunung
ledang
Kau jadikan aku si raja api
yang membakar diri kami kembali
Dari balik nisan yang mencakar
kehulu riau
Inilah syair engku putri
gurindam yang kugubah
Dengan sejuta
kata-kata
bermadahkan kekecewaan
pada sebuah pulau sejarah
Tak kurelakan cogan ini
5. Conclusion

Researchers find and classify several symbols which include: 1). Living beings symbolize animate things including humans, animals and plants which have the meaning of piety, faith, honor, power, loyalty, strength, peace and so on. 2). These objects include types of objects such as bottles, anchors, glasses which have the meaning of being transparent, and easily cracked.


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References

The Use of Integrated Science Learning Media in Maritime Context during the New Normal Era in Tanjungpinang City, Riau Archipelagos, Indonesia

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Abstract. This research aims to describe the use of learning media for science in junior high schools in an integrated maritime context during the new normal era in Tanjungpinang City, Riau Archipelagos Province, Indonesia. The research was conducted by using a survey method involving 24 junior high school science teachers, and the questionnaire used was distributed through the google form platform. The results showed that 55% of teachers had not integrated the maritime context into science learning media because they are still not used to linking materials with contexts, and not all materials is integrated with maritime contexts. However, some have already integrated it into the learning media such as the material for biotic and abiotic components of marine ecosystems, marine pollution and its prevention efforts, coral reef biodiversity, the application of Archimedes' law on ships.

Keywords: Science learning media, integrated maritime context, new normal.

1 Introduction

The Covid-19 virus has spread recently to various countries in the world, including Indonesia, and created a new normal in various fields of education, such as a change in the learning process from face-to-face to online [1], [2]. Hence, the learning process carried out during the new normal requires educators to be more creative and innovative, including the use of media that is oriented towards technology application [2]–[4].

The use of media is one of the main keys for an educator to achieve learning goals in the classroom because it has an impact on quality learning [5]–[7]. Therefore, educators need to use this media to make learning active and easy for students to understand [8], [9]. Furthermore, freedom must be given to students to use facilities in school in order to actualize the behavior and to improve the quality of learning in science at the junior high school level, specifically in the current new normal era.

Science learning that is integrated with the maritime context is needed, specifically in coastal areas to support the realization of Indonesia as the world's maritime axis [13] and the learning process contextually [12]. However, research revealed that the context has not been widely practiced by teachers [10], [11]. Therefore, this research aims to describe and evaluate the use of integrated learning media in maritime contexts used by junior high school science teachers during the new normal period in Tanjungpinang City, Riau Archipelago.
2 Research Method

This research is a descriptive survey that involved 24 junior high school science teachers in Tanjungpinang City. In addition, open and closed online questionnaires were used and distributed through the google form platform which was filled out by respondents within 5 days (10-15 August 2021). In the introductory part of the questionnaire, a brief explanation of the purpose and procedure of the survey and voluntary participation in filling out the questionnaire was given. The instrument was developed to explore information on aspects of using science learning media that are integrated in the maritime context during the new normal. This consist of the suitability of the use of learning media with the objectives and subject matter, its relevance to the interests of students' needs, contextuality of learning media as well as its effectiveness and efficiency, the use of learning media for learning evaluation, and the use of integrated science learning media with maritime concepts. The data obtained through the questionnaire were analyzed using the following formula.

\[ S = \frac{R}{N} \times 100 \]

Information:
S = Percentage of learning media usage
R = Respondent's answer score
N = Total maximum score

The percentage of use of integrated science learning media in maritime contexts is grouped into the following categories:

Table 1. The percentage of the use of science learning media is grouped into the categories [14]

<table>
<thead>
<tr>
<th>No.</th>
<th>Category</th>
<th>Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Very Good</td>
<td>86 – 100 %</td>
</tr>
<tr>
<td>2</td>
<td>Good</td>
<td>76 – 85 %</td>
</tr>
<tr>
<td>3</td>
<td>Sufficient</td>
<td>60 – 75 %</td>
</tr>
<tr>
<td>4</td>
<td>Less</td>
<td>55 – 59 %</td>
</tr>
<tr>
<td>5</td>
<td>Very Less</td>
<td>54 %</td>
</tr>
</tbody>
</table>

3 Result and Discussion

The results of data analysis on the use of integrated science learning media in maritime contexts used by teachers in Tanjungpinang City, Riau Archipelagos during the new normal period is seen in Table 2.

Table 2. The use of integrated science learning media in the maritime context used by teachers during the new normal

<table>
<thead>
<tr>
<th>No</th>
<th>Aspect</th>
<th>Percentage (%)</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The suitability of the use of science learning media with learning objectives</td>
<td>87.5</td>
<td>Very Good</td>
</tr>
<tr>
<td>2</td>
<td>The suitability of the concept of the subject matter with the learning media used</td>
<td>87.5</td>
<td>Very Good</td>
</tr>
<tr>
<td>No</td>
<td>Aspect</td>
<td>Percentage (%)</td>
<td>Category</td>
</tr>
<tr>
<td>----</td>
<td>------------------------------------------------------------------------</td>
<td>----------------</td>
<td>-------------</td>
</tr>
<tr>
<td>3</td>
<td>The relevance of learning media to the interests of students’ needs</td>
<td>78.82</td>
<td>Good</td>
</tr>
<tr>
<td>4</td>
<td>The science learning media used in the new normal is helpful in linking concepts with student reality (contextual)</td>
<td>81.25</td>
<td>Good</td>
</tr>
<tr>
<td>5</td>
<td>The effectiveness of science learning media used in the new normal</td>
<td>76.74</td>
<td>Good</td>
</tr>
<tr>
<td>6</td>
<td>Efficiency of science learning media used in the new normal</td>
<td>84.72</td>
<td>Very Good</td>
</tr>
<tr>
<td>7</td>
<td>The science learning media used has an impact on the evaluation of learning</td>
<td>71.18</td>
<td>Sufficient</td>
</tr>
<tr>
<td>8</td>
<td>The use of integrated science learning media in maritime context</td>
<td>55</td>
<td>Less</td>
</tr>
</tbody>
</table>

According to Table 2, the science learning media used by junior high school teachers in Tanjungpinang City, Riau Archipelagos, during the new normal period is currently in accordance with the learning objectives and the concept of the material taught to students are in a very good category. Science teachers carry out online learning by utilizing the media that are designed to the learning objectives. These learning media used include videos, PowerPoint slides, figures, and sound recordings made according to the material being taught, which makes it easier for students to understand the material in order to achieve the learning objectives \[5\], \[6\], \[15\].

Furthermore, the online learning media is considered more efficient, because it resulted in very good results when used during the new normal. It is in accordance with the lesson plans and time allocations listed in the Learning Implementation Plan (RPP) to simplify the learning process \[7\], \[16\]. In the aspects of science learning media usage as related to the evaluation of learning, a sufficient category was obtained. In this case, teachers use learning media at the time of remedial and enrichment which makes student learning outcomes reach the Minimum Completeness Criteria (KKM) that have been set by the school. This remedial learning is used for students who have not reached the KKM, while enrichment learning for the ones who have achieved the KKM score, in order to make students to be more interested in participating in the learning process \[5\], \[9\], \[17\].

In the aspects of using integrated science learning media in maritime contexts, a less result with category of 55% is obtained. This explains that in the New Normal Era, some teachers are still lacking in relating science material to the maritime context. Based on the open questionnaires that have been distributed, teachers have not integrated the maritime context into science learning media because of the following reasons, they are still not used to linking material with the maritime context, do not really understand the concept, and not all materials could be integrated with the maritime context. However, some science teachers (45%) have integrated the maritime context into their learning such as by presenting a discussion of the biotic and abiotic components of marine ecosystems, marine pollution and its prevention efforts, biodiversity in coastal areas and coral reefs, the application of Archimedes’ law on ships, and tsunami disaster mitigation. The materials in science learning are combined with maritime context to ensure that teachers and students have knowledge and competence in protecting the marine environment \[10\]–\[12\], \[18\]. In addition, the understanding of maritime context needs to be given to science teachers for it to be integrated in the learning process, specifically in learning media \[18\], \[19\]. Similarly, teachers need to be trained on how to integrate subject matter with maritime contexts, specifically for the ones in archipelagos areas, to make the learning process becomes more contextual \[11\], \[18\], \[20\].
4 Conclusion

This research shows that in this new normal era, there is a lack of science learning media usage that is integrated in the maritime context. Basically, teachers have not integrated the maritime context into science learning media because of the following reasons, they are still not used to linking the material with the maritime context, do not understand the maritime concept, teachers assume that not all materials could be integrated with the maritime context. However, few science teachers have integrated the maritime context in learning by presenting a discussion of the biotic and abiotic components of marine ecosystems and pollution as well as its prevention efforts, biodiversity in coastal areas and coral reefs, application of Archimedes law on ships, and tsunami disaster mitigation.

References


The Design of Literature Learning Innovation based on a Modern Digital Model for Generation Z Students

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Abstract. One form of literary learning that can be applied to members of Generation Z is the adoption of a digital-based learning model, which involves designing an application that contains literary materials and content. The use of such applications in literary learning is optional, as teachers can employ this digital device as an alternative or in combination with conventional learning. Hence, literary learning with this digital device should cover a larger portion during lessons based on the characteristics of current Generation Z students, who are generally more interested in learning with electronic visual forms. This will allow teachers to only serve as facilitators to direct the teaching of all elements of instructional materials that have been incorporated into the digital application. Therefore, teachers' position becomes less central because the learning is more student-centered. The design of literature learning using this digital device is one of the efforts of innovation to answer the challenge of science and technology in education.

Keywords: Innovation, Learning Literature, Digital, Generation Z

1. Introduction

Technological developments such as "flood" are definitely powerful and cannot be prevented from affecting various aspects of human life. Although humans enjoy being dragged into the flood wave technologies, they may not be mentally ready due to the rapidity of developments. This speed is marked by numerous inventions, specifically in the information technology (IT) field, which sprung a surprise to the humans who were still adapting to the prior artistic era. Hence, they were forced to learn and adapt quickly before the appearance of further discoveries.

Meanwhile, the rapid technological developments required by learning processes have been presented through various digital devices to satisfy the different needs and characteristics of students in this information-free era. The digital age has extensively provided diverse information through digital and electronic devices connected to the internet network. This available information can be used as a source of learning in the classroom and presented through various forms and means, including visual through writing, audio, or audiovisual. In addition, these digital devices provide current information that offers the latest developments. It can be processed by teachers and serve as interesting material for students, thereby preventing literature teaching classes from seeming monotonous.

Generally, monotony is an issue in very diverse literature learning classes. Teachers often complain about students' lack of motivation concerning literary texts in many ways, such as poor listening and reading skills, unappreciation, writing unproficiency, and various other
phenomena. However, this is the effect of teachers’ limited knowledge of the latest methods, techniques, and media that can be explored in literary learning. Teachers also exhibit less innovation and creativity towards forming interesting classes, and their duties are limited to thinking. Although their teaching methods are monotonous and conventional, the task is concerned as completed once the class has been held. This has been a major problem in literature education that hinders students from displaying interest and motivation towards learning.

This phenomenon is irrelevant to current digital era students who are already influenced by the development of communication and information technology and tend to prefer the most challenging activities. These students enjoy acquiring information and other interesting material present in digital devices rather than listening to presentations by teachers, where the dominant discourse is implemented in the absence of other facilities that support the visual learning process. Therefore, the pattern of knowledge transfer in literature classes should be modified to suit the characteristics of these students. The form of interaction between teachers and students should also be reformed and more directed towards the provision of instruction that enables students to individually construct their knowledge about literature and composition. Hence, teachers are no longer concerned as a source of information, but as facilitators.

The skills involved in processing and presenting information as teaching materials using various electronic devices and existing technologies will greatly support learning advanced literature. Such information is packed with interesting systematics and corresponds to the stages/phases of students’ cognitive, affective, and psychomotor development. Therefore, this research described the theoretical literature relevant to learning and explored theory books sourced from parents and previous investigations by experts on learning innovation in the digital age. The theories and ideas derived from these references were adapted into literary learning and integrated with various phenomena about the development of technology and the mindset of the current generation to promote the creation of innovation in teaching literature. At the end of the discussion, a basic design of the literature teaching for Generation Z was described using a digital device, which is the core objective of this research.

2. The Characteristics of Generation-Z Students in Learning Literature

Every generation has beliefs, values, cultures, perspectives, interests, and different skills for life and work. The generation born in the early 2000s, along with the rapid development of technology, is called Generation Z or the net generation. According to the generation theory presented by experts, these individuals were born between 1995 and 2010 and are the children of generations X and Y. Their characteristics include high sensitivity to technology and communication, meaning they have an advantage in the information and knowledge development field. They also tend to multitask by performing several jobs simultaneously and are pleased with issues that require quick decisions. Therefore, the proximity of generation-Z and alpha generation students with technology and the digital world is inseparable such as two sides of a co-dependent currency.

Although students in the digital age possess skills and outstanding expertise in the art and entertainment fields, their logic and language abilities are poorly trained because they focus on digitization. Social interaction in the real world is minimally performed as these individuals are more likely to interact virtually. Indirectly, this will lead to self-centered students that wish to obtain faster results with little effort. The development of digital technology has resulted in the formation of an instant mindset that cannot find a causal relationship between problems in life.

Also, the friendships formed virtually in cyberspace lead to the inability to distinguish between communicating with older persons and their age mates. As a result, parents and
educators in this digital era feel overwhelmed and reluctant to teach this, while students are becoming more individualistic, selfish and experience more difficulties adapting to the real world. The lack of social interaction with others is preventing students from learning basic life values, such as tolerance, kindness, honesty, diligence, and respect.

Learning for Generation Z students will be difficult, providing educators continue to apply styles of the past, such as the "sitting-listening-memorizing" method [1]. However, this is not the time to make children sit, listen, summarize, and write down their homework in a notebook. Instead, teachers should abandon the old ways and progress with the times by successfully guiding Generation Z as the face of the future. Innovation is required in teaching these children because they possess a different concept of thinking, and their environments are not solely constituted by the real world but also the virtual.

3. **Ideal Learning Literature in the Millennial Age**

Literature education, which includes poetry, drama, and prose, has its peculiarities for language teaching, as the learning involves literary and imaginative aspects of human creativity. It involves the display of literary works in front of readers, listeners, and spectators with touches of beauty that are strung into motion, song, or dialogue in writing or speech [2]. Literary education is definitely important because it teaches moral values besides literature, authors, and the content of the work. It is also closely related to the four language skills, namely listening, speaking, reading, and writing. However, there is an occasional presumption that literature teaching is considered to hold little attraction and use for some students due to the media or methods used by teachers. These methods do not stimulate the motivation of students to learn more and teach, thereby becoming a trigger for the unappreciation of literature.

In teaching literature, teachers must use appropriate means to improve students' appreciation. This has become more important in this present era, as teachers are dealing with Generation Z students who are generally too busy with digital devices. The challenges involved in teaching literature are numerous as students possess weak literature sensitivity and taste compared to the high demands of this educational subject. Therefore, teachers must utilize various strategies to incite the willingness to compose that is embedded in Generation Z students.

Literary learning should remain current, and teachers must be skilled at maximizing all technological devices that facilitate literature education. In using such devices and concepts, the essence of the lesson should not be lost, and priority should be given to sensitivity and taste. The design technology is only used as a facility to support the learning process, meaning that the content of literary concepts and essence must be maintained.

4. **Integration Development of Technology in Learning Literature**

Technology can improve the quality and range of education when used wisely. It is directly proportional to the direction of futuristic education, which is open, two-way, diverse, multidisciplinary, and concerned with competitive labor productivity [3]. The utilization of technology, specifically in learning literature, can change its conventional tradition or culture. As indicated by [4], information technology in learning can be a self-learning system (instruction-independent) or combined to produce a direct delivery method (face-to-face in class) that relies on teachers' presence.

Learning technologies have been classified into two, namely technology-based and technology-based web learning. According to [5], technology based-learning is principally
composed of two aspects, namely audio (audiotape, radio, voice mail, and phone) and video information technology (videotape, text, and messaging). Meanwhile, web-based technology learning comprises information data technology, such as bulletin boards, the internet, email, and telecollaboration. In learning, a combination of written technologies, including audio/data, video/data, and audio/video, are often employed.

According to [6], three factors must be realized in the use of information technology to improve the quality of subject teaching, including literature. First, students and teachers must have access to digital technology within educational institutions. Second, quality and useful materials must be provided for teachers and students. Third, teachers must possess knowledge and skills in using learning facilities and digital media to help students achieve academic standards and develop their potential.

The integration of technology into the learning process plays an important role in literary education. As stated by [4], designed electronic learning has three functions, first, it is an optional element of learning that can serve as a supplement. Students and teachers can choose to utilize electronic or conventional learning as there is no obligation in accessing the electronically designed learning materials. Hence, students who use these devices will obtain more value in terms of knowledge, creativity, and experience. Second, it is as a complementary learning element programmed to assist in the completion of the course material. Third, it is also as a replacement for conventional learning methods when utilized fully in the learning process.

Therefore, the integration of technology into literature education is expected to contribute to improving the quality of literature teaching. According to [4], the benefits of this integration include (1) increasing the level of interaction between teachers and students, (2) allowing the learning to occur anywhere and at any time, (3) extensive coverage and reach, and (4) facilitating the improvement and delivery of learning materials.

5. The Presence of Digital Literature as a Source of Literary Education

The development of digital literature is considered as an alternative for the appreciation and dissemination of literature in this era of information technology. Reading literary works through a computer, laptop, notebook, device, or smartphone has begun to develop into a lifestyle for every generation in this millennial era, specifically Generation Z. Although digital literature is not the first choice for technology consumers, it is indirectly digital literature in tune with the use of smartphones in their daily life. Therefore, digital literature is expected to become an alternative favored by many people with the development of creativity and passage of time.

As described by [7], digital literature is a website or page that is open and can be accessed for free by anyone, at any time, and anywhere, using an Internet connection. Digital literature provides free membership for those who are interested in further interaction. It also offers platinum membership to the lovers of literature and culture of various social circles, educational backgrounds, and philanthropists willing to assist the device through a once-in-a-lifetime purchase.

In addition, [7] stated that digital literature is established with the main goal of becoming a publication container, as every Indonesian writer desires that his work be digitally published on a trusted page. These trustworthy pages point to the work's aesthetic quality and selection process, which determines the literary piece to be published online.

With the growing number of digital literature, teachers can create related teaching and learning resources for Generation Z students. Online literature is currently a source of abundant learning, thereby requiring teachers to be clever in filtering and selecting the works that will be taught to students. Since the digital world has become an inseparable part of Generation Z's
lives, teachers can more easily and freely engage these students by accessing literary works online.

Besides conventional learning methods, literary skills can be improved through the utilization of digital devices. Numerous videos of literary appreciation are scattered on the internet, including poetry reading, videos and musicals, drama performances, rhymes, short stories, storytelling, etc. These videos can be used as a model for students to learn literature appreciation, while teachers are required to be more creative in guiding Generation Z students to access and select the right video content to serve as a model.

By using digital devices, teachers will not lack resources for teaching literature, and their activeness will only be required in accessing digital works to be adopted as learning materials. Therefore, teachers of Generation Z students are expected to master and use all kinds of digital devices and possess the knowledge for accessing online sites related to literature. The inability of teachers to access ideal learning technology will result in the suboptimal achievement of literary learning for Generation Z students.

6. The Use of Instructional Design and Digital Devices to Learn Literature in Modern Times

The employment of a technology-based learning literature paradigm is expected to produce modern developments in learning that correspond to the demands and the times. Modern learning, concerning the use of Internet media and computerization, is expected to improve the intellectuality of Generation Z students. According to [8], the use of the Internet and various computer applications is the hallmark of modern learning that can provoke changes in the old paradigm.

Interaction involving Generation Z members and digital devices, such as computers, laptops, notebooks, tablets, gadgets, smartphones, and others, is a science that investigates the design, evaluation, and implementation of interactive computer systems for human use and the exploration of the main environmental factors. The interaction referred to this is the two-way communication between humans and digital devices to create a specific goal to be achieved through a bridge that serves as the interface. As stated by [9], the concept of human and computer interaction consists of three components, first, man (human) is the most important component in the human and computer interaction process. Humans function as the subject and object that is seen as an information processing system. Second, the computer, a component that acts as a servant of man in relation to the interaction between humans and computers. It acts as a participant that facilitates the functioning of a program in the interaction process, which is categorized into two areas, batch and interactive interactions. Third, interaction, the communication process between humans as the users and the computer system, which acts as a participant that runs a program. The interaction process is grouped into the same areas mentioned above.

After observing the closeness and interaction between Generation Z with digital devices, an appropriately designed learning system based on digital technology, including for the literature teaching, became necessary. The process demands every student to possess a digital device, either a smartphone, tablet, gadget, etcetera. Designing education in collaboration with digital devices is more effective in satisfying the current learning needs. In learning literature, concepts and theories have been simplified by applications that contain texts, images, audio, video, and many others. Such applications are implanted into students’ digital devices, which can be easily accessed and can promote literature visualization, in order to adjust the characteristics of the learning process.
There are several advantages of application-based literature learning models. First, convenience, as users can access learning content, including quizzes, journals, games, etc., anywhere. Second, collaboration, which ensures the implementation of learning at any moment in real-time. Third, portability, as users guide RAM is replaced by learning that can be arranged and connected. Fourth, compatibility, learning is designed for use on mobile devices, and fifth, interesting, through the combination with games to create more fun [10].

The following describes the basic scheme and menu of literature learning for Generation Z students, designed as an application in digital devices, such as cell phones, gadgets, smartphones, laptops, computers, and other electronic communication devices.

![Figure 1. Instructional Design for Modern Literature using Digital Devices](image)

The scheme is basic and can be further developed according to each user's needs, and teachers can fill each submenu with appropriate material. For example, in the learning of "Poetry," teachers can include material on definitions, types, elements, structures, and examples, which will be learned during the educational process. The submenus titled "About Prose" and "About Drama" can be designed similarly. Also, teachers can add other supporting content, such as audio and video recordings on the submenus designated "Listening to Poetry," "Listening to Prose," and "Listening to Drama." The videos added should be chosen and selected according to the needs and characteristics of students' learning objectives. In the submenus entitled "Understand Poetry," "Understand Prose," and "Understanding Drama," teachers can add material, such as clues for comprehension tests. The instructions should be written in a language that is easily understood by the Generation Z students who possess fast-thinking abilities, and teachers can add interesting pictures as complements to the hints.
Furthermore, the submenus named "Reading a Poem," "Reading Prose," and "Role-play" can be filled with steps, ordinances, instructions, and video tutorials, while "Writing Poetry," "Writing a Prose," and "Writing Drama" can contain steps in writing literary elements. This will guide and lead students to write poetry, prose, and drama appropriately.

This scheme could also further the creation of technological advances and be equipped with chat and discussion forums among students and with teachers. As stated by [11], direct interaction through the technology-based, web and digital learning systems can use (1) chat, a medium of direct communication between students and occasionally with teachers through text. (2) Application sharing, using a specific application that allows a group to collaborate and work directly on a document by performing remote editing. (3) Audio/video conferencing, through a specific software application that enables audio/video conference communication. Additional amenities to these technological creations will increase the utility and attraction of these applications for student learning. These amenities, such as chats and discussion forums, can be used by students outside to perform classroom learning. Hence, the habitual use of social media and digital devices by Generation Z students can be exploited for scientific discussion activities through the application of literary learning.

Meanwhile, several aspects involved in instructional design should be included in the digital literary elements that constitute an application’s content. According to [10], the facilities in applications containing learning material should comprise access to documents, quizzes, tutorials, audios, and videos, archives of subjects, presentations of student work, and participation by the learning community.

By learning the concepts of digital literature, education can occur continuously without time and space limitations. Literary education will be implemented in the classroom as well as the home, allowing students to discuss interesting information about literature with their teachers and friends regardless of location. Therefore, the concept of continuous literary learning at any time or place and by anyone can be materialized through digital devices.

7. Conclusion

The development of communication technology has facilitated various digital devices to rapidly access disclosed information, which can be used as an abundant source in learning literature. Therefore, language and literature teachers require skills to gather information in creating learning materials for students. The integration of digital technologies in the educational process, specifically in teaching literature, has a significant impact on improving the quality of learning. According to previous research, the integration of technology in learning positively affects the quality and quality of learning, as well as the interest and motivation of students. In this research, the application of technology development on digital devices into literary design and learning was described. This design was aimed at adapting literature concepts to suit the characteristics of Generation Z students learning in this digital era. These students are in the digital age and depend on various digital devices to process information. Finally, the development of digital devices for literature-based learning must be accompanied by teachers’ knowledge, technology mastery, and skills.

References

The Effect of Online Learning on Indonesian Students
Learning Outcome of Tanjungpinang Senior High
School in The 2020/2021 Academic Year

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Education, Raja Ali Haji Maritime University, Senggarang, Tanjungpinang, Indonesia

Abstract. The purpose of this research is to determine the effect of online learning on the
learning outcome of Indonesian high school students in Tanjungpinang City. This is a
quantitative research carried out using the ex post facto method. Data were collected
through questionnaires and documentation techniques. The data collected were analyzed
through normality, linearity, and simple linear regression tests. The results obtained showed
that t-count is greater than t-table (2.447 > 1.664). Therefore, hypothesis Ha stated that
online learning significantly influences Indonesian language learning outcomes for
Tanjungpinang City High School students in the 2020/2021 academic year is accepted. In
conclusion, Ha is accepted because the t-count is greater than the t-table, while Ho is
rejected with the r-square value of 0.074, which indicates that online learning on the
Indonesian language is 7.4%.

Keywords: Influence, Online Learning, Learning Outcomes

1 Introduction

Raja Ali Haji Maritime University (UMRAH) is committed to synergizing and collaborating
with the Tanjungpinang City Government to improve the quality of human resources (HR). This
is because qualified and highly competitive human resources realize quality development,
specifically in the fields of science and technology. Cooperation is also carried out to explore
the regional potentials of this maritime area, as stated in the MoU Number
1379/UN53.0/KS/2020 between UMRAH and the Tanjungpinang City Government.

As part of UMRAH, the Indonesian Language and Literature Education Study Program
need to take on certain roles to achieve this goal. Furthermore, alumni must be prepared to
become a resource for prospective Indonesian language teachers specializing in chemistry
lessons based on maritime contexts. This indirectly improves the quality of students in
Tanjungpinang, thereby making them familiar with the region's potentials. In the educational
sector, information technology is focused on improving the quality of learning [1]. This led to
the implementation of the online or e-learning program by some schools. The University of
Illinois first introduced online learning with the development of electronic-based learning [2].

Based on interviews and observations, schools implemented online learning using
Whatsapp, Google Classroom, and Google Meet. Everyone often used these selected media to
convey information, even before the government implemented the online learning system.
Besides, these media also have several features such as forming groups, sharing files and
pictures, filling in the attendance list, making video calls, sending voice messages, etc, thereby
enabling educators to send, give, and assess assignments online. The implementation of this
type of learning aims to aid the students even in adverse conditions such as the Covid-19 pandemic. Learning activities are important and have become the main factor in achieving academic objectives, such as reading, writing, story-telling, asking questions, listening, and practicing.

Students are also faced with several online learning problems in Indonesia. First, it limits their ability because some cannot provide the needed communication tools such as cellphones, which causes them to often ignore Indonesian language lessons. This is also one of the reasons they do not participate in learning activities. Second, students feel bored because of the numerous hours needed to participate in online learning and the associated series of tasks that the teacher continuously gives. Third, they are less active in asking questions, and fourth, the lengthy tests make it difficult for them to capture the lessons, and they are sometimes lazy to read. However, when given assignments, the majority of the students fail to submit while others earn low scores due to their poor performance.

Formal education is continuously followed by measurement and assessment, as well as the teaching process and learning activities. This means by knowing the learning outcomes, it is easier to determine students' position that is smart, moderate, or slow. Therefore, education always needs to be improved in terms of quality and quantity [3]. Husman (2016) stated that "Learning outcomes are the abilities possessed by students after learning experiences." These are described as their competencies or abilities obtained after carrying out the learning activities as well as a measure to determine the extent they understood the provided material. In accordance with the preliminary research, it was reported that online learning at SMK Ketintang Surabaya significantly affects students' learning outcomes. This is because t-count 8.396 > t-table 1.99773 and the significance result was realized as 0.000 <0.05. Therefore, it was concluded that online learning has a positive and significant impact on the learning outcomes of class X students in the subject of office technology. In addition, learning is a process that involves a combination of 2 aspects, namely, which are aimed at students' abilities, and teaching which is oriented towards teachers' competence. Electronic learning is an English word derived from learning online. According to Susanto (2013), it is a combination of learning and teaching activities. Meanwhile, learning is a process that involves the interaction between students, educators, and educative resources in a conducive environment [4]. It is also defined as the act of changing students' behaviors by optimizing the environment as a source of stimulus study.

2 Results and Discussion

2.1 Results of Online Learning Questionnaire for Tanjungpinang City High School Students for 2020/2021 Academic Year

The research questionnaire is composed of 20 statements that were prepared based on an online learning grid, which has been tested for validity and reliability [5]. Siregar (2014), stated that the Likert scale is used to measure a person's attitudes, opinions, and perceptions on a particular object or phenomenon. It was in the assessment technique which was awarded a score of 1, 2, 3, 4, and 5. A closed questionnaire in which each statement is awarded, a score was distributed and filled with positive and negative statements. However, assuming the positive statement is awarded scores of 5, 4, 3, 2, 1, then the negative one becomes 1, 2, 3, 4, 5. Information from the positive statement with a score of 5 is categorized as strongly agree. Furthermore, scores of 4, 3, 2, and 1 are in the agreed, neutral, disagree, and strongly disagree categories, respectively.

Based on the online learning questionnaire scores, detailed results were obtained. Approximately 70 and 50 students were awarded moderate scores of 67 and 73. Furthermore,
the highest and lowest scores were 89 and 50, which were obtained by 20 and 10 students, respectively. The purpose of distributing this questionnaire is to determine the extent of influence online learning has on students of the Indonesian language. Therefore, in accordance with the scores obtained, it was concluded that it impacts their learning outcomes.

### 2.2 Learning Outcomes of Final Semester Grades for High School Students in Tanjungpinang City for the 2020/2021 Academic Year

The indicator used to measure the learning outcome during the final semester exam held in Tanjungpinang High School for the 2020/2021 academic year is the field of knowledge. The final results were obtained in the form of documents and were described afterward. The average score of 63.70 was realized with the help of Microsoft Excel 2010.

### 2.3 Normality Test

The normality test is the first prerequisite carried out and used to analyze data processing using statistical tests. According to Siregar (2014), "Supposing the data is normally distributed, then a parametric statistical test is carried out, whereas assuming otherwise, then a nonparametric statistical test is performed." The normality test aims to determine whether the data obtained from the research is normally or abnormally distributed. It is carried out on parametric statistics, in accordance with the assumption that the data obtained is normally distributed, using the Kolmogorov-Smirnov test.

### 2.4 Hypothesis Test

#### 2.4.1 Simple Linear Regression Test

Siregar (2014) stated that "one of the tools used to predict future demand based on previously acquired data, or to determine the effect of one independent variable on a dependent is linear regression." This aims to determine whether or not online learning affects students of the Indonesian language in Tanjungpinang High School during the 2020/2021 academic year, using SPSS version 22.

Based on the results shown in the coefficients table, it is evident that the t-count and significance values are 2.447 and 0.017, respectively. Furthermore, in the model summary table, the r-square, an output guideline to determine the magnitude of the influence of online learning on the outcomes of Indonesian subjects, is 0.074. This means that online learning affects 7.4% of Indonesian learning outcomes, while other variables influence the remaining 92.6%. Subsequently, a regression line equation was obtained with the following formula.

\[ Y = a + bX \]

The explanation of the formula above is a constant number a, with numerous coefficients. The SPSS version 22 output was used to determine the value of a as 35.187. This result is a constant, which means that when there is no online learning of Language X, the consistent value outcomes is 35,187. Furthermore, b depicts the number of regression coefficients, and the value obtained is 0.418. This means that for every 1% rise in online learning rate or lahasale X, the learning outcomes increase by 0.418.

Based on the discussion above, the regression coefficient value obtained as \( Y = 35.187 + 0.418X \) is positive. It was reported that online learning or lahasale X has a positive effect on learning outcomes lIndonesian or lahasale Y. After the values of a and b are obtained, then the validity of the regression equation was determined with a significance analysis based on the t-test.
2.4.2 Significance Test

A significant test was performed using the t-test, and it obtained a t-count of 2.447, while the t-table with a significance level of 0.05, at a value of 1.664. Furthermore, assuming the t-count is equal to or greater than the t-table with a significance level of 0.05, then the language, which has a significant effect and Ha, is accepted. Conversely, assuming the t-count is smaller than the t-table, the language is insignificant, and Ho is accepted. The t-test was carried out to verify the proposed hypothesis, and afterward, conclusions were drawn by comparing the t-count with the t-table at a significance level of 0.05 or 5%. Degrees of freedom (DK) = n-2 = 77-2 = 75, then t-table = 1.664, which are based on the guideline dk t-table. The hypotheses in this research are proposed as follows:

Ha: indicates a significant influence between online learning on outcomes 1Indonesian language for Tanjungpinang High School students for the 2020/2021 academic year. The hypothesis is accepted assuming t-arithmetic > t-table at DK = n-2 and p = 0.05. The hypothesis is rejected when t-count < t-table at DK = n-2 and p = 0.05.

Ho: indicates an insignificant effect on online and on learning outcomes 1Indonesian language for Tanjungpinang High School students for the 2020/2021 academic year. The hypothesis is accepted assuming t-count < t-table at DK = n-2 and p = 0.05. The hypothesis is rejected supposing t-count > t-table at DK = n-2 and p = 0.05.

The test results show that t-arithmetic is greater than t-table (2.447 > 1.664) Therefore, hypothesis Ha states that online learning has a significant influence on learning outcomes 1Indonesian language of Tanjungpinang High School students for the 2020/2021 academic year, is accepted. It was concluded that Ha is accepted because it fulfills the requirements of the proposed hypothesis, namely t-count is greater than t-table while Ho is rejected. This indicates that online learning has an effect on the Indonesian language learning outcomes of Tanjungpinang High School students for the 2020/2021 academic year. Based on the regression output, r-square is 0.074, which shows that online learning on Indonesian language learning outcomes is 7.4%.

3 Conclusion

The total research sample of 770 students involved in online learning at the Tanjungpinang City High School for the 2020/2021 academic year had an average score of 68.15. Meanwhile, the SMA Tanjungpinang City XI students' result for learning Indonesian had an average score of 63.70 and is categorized as sufficient. Therefore, the conclusion drawn from the formulated problem is that students understood the online learning system. This is proven by their answers to the questionnaires with a coefficient of r of 0.074. In terms of learning Indonesian, an average score of 63.70 was realized and categorized as sufficient. This indicates online learning positively influences Indonesian language learning outcomes with a coefficient of r-square = 0.074 and a significance of 0.017 <0.05. This means that it affects Indonesian language learning outcomes for high school students in Tanjungpinang City.
References

Foundation Writes.
Teacher's Questioning Skills in Elementary Science Classroom to Facilitate Student's Higher-Order Thinking Skills

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Abstract. Teachers need to have good inquisitive techniques because they help to train students cognitively. Therefore, this study aims to examine teacher's questioning skills to facilitate students in thinking at higher levels. A total of 150 teachers from the elementary school that partakes in online training activities were selected as participants. The results showed that the teacher's questioning skills through the HOTS were in a suitable category, while the evaluating and creating aspects were in the lower level.

Keywords: Bloom's Taxonomy, 21st-century skills, cognitive

1 Introduction

In the 21st-century, the rapid growth of technology is one of the significant challenges in the world order because Information and Communication Technology provides instant and fast access facilities, as well as interpersonal communication that needs to be handled wisely. However, children need to face a lot of challenges during this period by filtering all the information received. ICT has touched the field of education because it is spread across all modern societies [1]. The preparation of students in terms of knowledge, skills, literacy attitudes, digital science, and technology is one of the teacher's efforts in training them cognitively. This is achieved by applying higher-order thinking skills including critical thinking, problem-solving, creativity, innovation, communication, and collaboration in learning [2].

In Indonesia, the learning process is in line with education policy on the National Assessment to foster reasoning power and student's character [3]. Therefore, teachers need to facilitate students to develop their thinking potential, find ideas, inspire imagination and promote action by asking questions. The questioning skills help to achieve goals and stimulate student's mental activity because their quality determines the effectiveness of learning in the classroom. Furthermore, teachers need to focus on the proper inquisitive techniques to foster students’ interest in learning. These questioning skills tend to increase motivation and improve student's ability to think critically and creatively. Also, these inquisitive techniques help students to be actively involved in the teaching and learning process, as well as stimulate the mastery of higher-order thinking skills. These questioning skills help teachers in explaining the importance of a concept to allow students to understand and develop their thinking to a higher level [4].

The questions normally asked while teaching and learning varied with the level of asking that is divided into two parts including lower and higher-order thinking skills [5].
The lower-order thinking skills in the teaching and learning process are remembering, understanding, and applying, while the higher-order thinking includes analyzing, evaluating, and creating. However, teachers need to promote students by asking questions at a higher level because they are expected to engage in more creative and stimulating thought processes [6]. In 21st-century, higher-order thinking skills including cognitive domains, critical and creative thinking, as well as problem-solving are needed in learning. Meanwhile, teachers still focus on low-level questions or primary memory that [7], [8] only need short answers [9] for various reasons [10]. This negatively affects the students because they are not used to the critical thinking needed to succeed in life. Therefore, teachers need to change their learning process by planning questions that tend to help them remember information and require students to analyze, evaluate, as well as create.

Questions become one of the most powerful teaching tools because it affects student's thinking processes, hence teacher should improve their questioning skills [11], [12]. Also, students need to be motivated by asking higher-level questions if they are expected to engage in more creative and stimulating thought processes. This study aims to describe the skills of elementary school teachers in asking questions related to science material in online training activities with the title "Developing Higher-Order Thinking Skills Through Learning with an Inquiry Approach."

2 Methodology

2.1 Research Method

This study is qualitative descriptive in nature and aims to describe the skills of elementary school teachers in asking questions related to science material in online training activities titled "Developing higher-order thinking skills through learning with an inquiry approach." A total of 150 teachers from the elementary school spread across various parts of Indonesia were selected as participants.
2.2 Research Instrument

An online written test with description answers from the teachers was performed using the padlet.com application. This instrument contains three questions including analyzing, evaluating, and creating aspects. However, the training instructor provides an Inquiry, HOTS, Science Process Skills, Virtual Practicum materials on temperature and heat, as well as examples of questions to train the teachers before giving the test. The learning activity scenario continued by presenting a heat transfer problem in daily life. Subsequently, the teachers are asked to make guiding questions that develop students’ higher-order thinking skills.

2.3 Analysis Data

Data were obtained in a list of answers that raise higher-order thinking skills. The following is an equation to determine the percentage of variation due to the HOTS.

\[ P = \frac{f}{N} \times 100\% \]  

where:
- \( P \) = Percentage of correct question variations by HOTS
- \( f \) = Variations of correct questions based on HOTS
- \( N \) = Number of variations of questions that appear

Table 1 shows the category of the teacher asking skills in raising HOTS questions

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Questioning skill criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>0% &lt; ( x \leq 25% )</td>
<td>Very low</td>
</tr>
<tr>
<td>25% &lt; ( x \leq 50% )</td>
<td>Low</td>
</tr>
<tr>
<td>50% &lt; ( x \leq 75% )</td>
<td>Very</td>
</tr>
<tr>
<td>75% &lt; ( x \leq 100% )</td>
<td>Very well</td>
</tr>
</tbody>
</table>

3 Result and Discussion

The following activities are important after presenting materials related to the development of higher-order thinking skills in various virtual practicums. Firstly, the teachers try out inquiry learning activities that present a new problem independently. Secondly, the teachers made a list of questions regarding the problems displayed on the padlet.com application. The following shows the sequence of activities performed by the teacher.

**Activity:** Heat transfer on seeds
**Problem:** Every morning, you use a spoon to stir the sugar which dissolves quickly while making a hot tea. There are spoons made of various materials to keep the tea warm.

![Fig 2. A cup of hot tea](image)

**Description of the virtual experiment:** In this virtual experiment, there is an electric heater, butter, and seeds, as well as five spoons with different materials including aluminum, iron, glass, plastic, and wood. Meanwhile, smeared butter and seed are placed at one end of each spoon and the other end is dipped into water that has been heated using an electric heater. Teachers were allowed to observe the events and asked to design guiding questions that elicit higher-order thinking skills.

However, the questions made by the teacher are grouped based on the indicators of HOTS including analyzing, evaluating, and creating. Figure 3 shows the question quality categories that are obtained for each indicator.

![Fig 3. Category Teacher Questioning Skills in Practicing Higher Order Thinking Skills](image)

Figure 3 shows that 60% of the variety of questions written by the teacher are good analytical skills. Furthermore, the teacher's questions for the indicators of evaluating and creating are in the lower category with a percentage of 30% and 27.5% respectively. The following tables show the explanation of each indicator.

Table 2 shows the numbers 1, 3, 4, 6, 8, 9, 11, 13, and 14 to be the designed questions that explain teacher's inquisitive techniques to analyze. Therefore, the teacher asked students questions to solve the material and group it into interconnected parts due to the aiming objectives. This question contains elements of comparing, looking for causes, and giving reasons, as well as stimulating students’ thinking to reason and argue sustainably [13].
### Table 2. Results of Teacher Question Variations for HOTS on Analyzing Levels

<table>
<thead>
<tr>
<th>No.</th>
<th>Variations of Teacher Question</th>
<th>Question Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Why do the seeds on the end of the spoon fall at different times?</td>
<td>True</td>
</tr>
<tr>
<td>2</td>
<td>What material spoon falls first? What is the reason?</td>
<td>False</td>
</tr>
<tr>
<td>3</td>
<td>Which seed on the spoon falls first?</td>
<td>True</td>
</tr>
<tr>
<td>4</td>
<td>Which ingredient melts butter the fastest?</td>
<td>True</td>
</tr>
<tr>
<td>5</td>
<td>Which is the fastest spoon that melts?</td>
<td>False</td>
</tr>
<tr>
<td>6</td>
<td>Which seed fell first and last in this experiment?</td>
<td>True</td>
</tr>
<tr>
<td>7</td>
<td>What is the difference in the speed of the fall?</td>
<td>False</td>
</tr>
<tr>
<td>8</td>
<td>Why does butter melt at different times?</td>
<td>True</td>
</tr>
<tr>
<td>9</td>
<td>Compare the spoon material based on the speed of seeds fall.</td>
<td>True</td>
</tr>
<tr>
<td>10</td>
<td>What is the purpose of putting butter on each spoon?</td>
<td>False</td>
</tr>
<tr>
<td>11</td>
<td>What causes the difference in seeds drops? Which seeds fall early and last? What factors influence?</td>
<td>False</td>
</tr>
<tr>
<td>12</td>
<td>What do you think caused the butter to melt?</td>
<td>False</td>
</tr>
<tr>
<td>13</td>
<td>What causes each of the seeds to drop at different times?</td>
<td>True</td>
</tr>
<tr>
<td>14</td>
<td>Compare the spoon material that make the butter melt first</td>
<td>True</td>
</tr>
<tr>
<td>15</td>
<td>Which is the fastest material that drops the seeds and butter?</td>
<td>False</td>
</tr>
</tbody>
</table>

### Table 3. Results of Teacher Question Variations for HOTS on Evaluations Levels

<table>
<thead>
<tr>
<th>No.</th>
<th>Variation of teacher’s questions</th>
<th>Question Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Determine with a spoon what material tend to make the water stay warm for a long time.</td>
<td>False</td>
</tr>
<tr>
<td>2</td>
<td>Why do aluminum spoons conduct heat faster than wooden ones?</td>
<td>False</td>
</tr>
<tr>
<td>3</td>
<td>Based on the experimental results, which spoon has the characteristics of a conductor and an insulator? Explain your answer!</td>
<td>False</td>
</tr>
<tr>
<td>4</td>
<td>How could that happen?</td>
<td>False</td>
</tr>
<tr>
<td>5</td>
<td>What is the effect of spoon material on the speed of falling seeds?</td>
<td>True</td>
</tr>
<tr>
<td>6</td>
<td>Which seeds fall in the third tier?</td>
<td>False</td>
</tr>
<tr>
<td>7</td>
<td>How does the spoon-making material affect the rate at which the seeds fall?</td>
<td>True</td>
</tr>
<tr>
<td>8</td>
<td>What about the speed at which seeds fall on an aluminum and a wooden spoon?</td>
<td>False</td>
</tr>
<tr>
<td>9</td>
<td>How do you experiment to get accurate information?</td>
<td>True</td>
</tr>
<tr>
<td>10</td>
<td>Make a conclusion from the practicum that you have done proven by the experimental table!</td>
<td>False</td>
</tr>
<tr>
<td>11</td>
<td>From analyzing, which the fastest spoon that melts the seeds?</td>
<td>False</td>
</tr>
<tr>
<td>12</td>
<td>Make a sequence of spoons that melts the fastest using pictures!</td>
<td>True</td>
</tr>
<tr>
<td>13</td>
<td>Try to compare the time difference shown by each spoon!</td>
<td>False</td>
</tr>
<tr>
<td>14</td>
<td>The fastest object that melts The slowest object that melts</td>
<td>True</td>
</tr>
<tr>
<td>15</td>
<td>In a tabular form, make the results of the observations that have been made to the experiment!</td>
<td>False</td>
</tr>
<tr>
<td>16</td>
<td>Which seed in the spoon fell faster and why?</td>
<td>False</td>
</tr>
<tr>
<td>17</td>
<td>What causes an aluminum spoon to quickly drop seeds?</td>
<td>False</td>
</tr>
<tr>
<td>18</td>
<td>Organize data from butter-melting spoons!</td>
<td>False</td>
</tr>
</tbody>
</table>

Table 3 shows the numbers 5, 7, 9, 12, and 14 to be the questions that explain the teacher’s inquisitive techniques to evaluate. However, the evaluation aspect is categorized as low-order...
thinking skills because only a few variations of questions provoke answers to make choices or judgments based on criteria or standards.

Table 4. Results of Teacher Question Variations for HOTS on Creating Levels

<table>
<thead>
<tr>
<th>No.</th>
<th>Variations of Teacher Question</th>
<th>Question Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Make a table to record the data from this experiment!</td>
<td>False</td>
</tr>
<tr>
<td>2</td>
<td>Make a poster about which spoon melts fast!</td>
<td>True</td>
</tr>
<tr>
<td>3</td>
<td>What to do to make the seeds on the end of the aluminum and iron spoon fall together?</td>
<td>False</td>
</tr>
<tr>
<td>4</td>
<td>Make data if butter is replaced with other ingredients!</td>
<td>False</td>
</tr>
<tr>
<td>5</td>
<td>What happens if all the spoon ingredients are the same</td>
<td>False</td>
</tr>
<tr>
<td>6</td>
<td>Make a hypothesis about the experiment performed</td>
<td>False</td>
</tr>
<tr>
<td>7</td>
<td>Write down the results of the experiments you have done!</td>
<td>False</td>
</tr>
<tr>
<td>8</td>
<td>Arrange the materials from the fastest to the slowest to conduct heat!</td>
<td>False</td>
</tr>
<tr>
<td>9</td>
<td>How can these materials be used to make a tool from a cooking pot?</td>
<td>True</td>
</tr>
<tr>
<td></td>
<td>State the reason!</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Make a good spoon ad for consuming soup!</td>
<td>True</td>
</tr>
</tbody>
</table>

Table 4 shows the numbers 2, 9, and 10 are the questions that explain the teacher's inquisitive techniques to create. However, indicates that teachers have the low level of creating category. Also, only few questions lead to the arrangement of elements or new structures.

The low teacher's questioning skills for evaluating and creating are caused by the inaccurate answers given. The following are the errors that occur: First, the number 2 and 5 questions given by the teacher are not clear; second, the number 2 and 3 questions need to be categorized as an analyzing aspect instead of evaluating and vice versa; third, the duration of thinking and the time spent to give a short answer; and fourth, the number 5 question leads to the lack of material understanding or the experiments performed. The question "What happens if all the spoon ingredients are the same?" tend not to give any change because teachers are not used to HOTS questions in class but actively ask students a low-level one [8].

However, a teacher that asked higher-order thinking questions has a good understanding of the subject matter. This type of teacher needs to involve in lessons to help students connect meaningful knowledge and integrate new subject matter into their cognitive structures [14]. Moreover, meaningful learning occurs when learners use existing knowledge to understand new experiences [15].

4 Conclusion

This study shows that the questioning skills that facilitate HOTS are still low in the evaluating and creating aspects, while the average teacher raises questions that are in the analysis category. In the future, teachers need to develop better inquisitive techniques through continuous training activities, increasing understanding of teaching content, and reading various kinds of literature related to learning models/approaches in the classroom. These skills facilitate students to gain experiences in developing conceptual understanding through the questions given, processing knowledge, and submitting opinions following their critical thinking patterns [16],[17]. Therefore, the art of asking some critical questions is to train students to think at a higher level.
Acknowledgments

The author thanks the elementary science teachers that participated in this study.

References


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