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## **The Development of Students' Worksheet Based on Inquiry Integrated by Youtube Video as the Alternative of Teaching Materials During the Covid-19 Pandemic Period**

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### **ABSTRACT**

This research aims to develop students' worksheets based on inquiry integrated by Youtube Video. This is Research and Development (R&D) with the ADDIE model where 50 active students from the Faculty of Teacher Training and Education of Universitas Syiah Kuala are involved at the implementation stage. The results showed that the average percentage of students' worksheets validated by the 3 validators could be categorized as very valid to be used. Questionnaire results showed the students agree that the worksheets developed help with learning during COVID-19, the worksheets help students to study independently, and they easily understand the material presented. Based on the results of validation and students' questionnaire response, it can be concluded that the students' worksheets based on inquiry integrated by youtube videos are feasible to be used the alternative of teaching materials for online learning during the COVID-19 pandemic.

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### **INTRODUCTION**

The COVID-19 pandemic, which has been sweeping the world since 2019, spread to Indonesia. As a result of this rapid spread, the government began to impose large-scale social restrictions. The social restrictions imposed are also applied in the world of education. Since the beginning of March 2020, the learning process in every education unit has been carried out online. It is done by Circular issued by the Ministry of Culture and Education Number 4 the Year 2020 Regarding the Implementation of Education Policy in Emergency During the Spread of COVID-19 which states that the learning process is online.

Online learning is distance learning that can be done anywhere by utilizing technology and the internet as a medium. Online learning also applies to college. Students can attend lectures without having to attend class, as well as lecturers who can carry out learning anywhere. This requires lecturers to be

more innovative in designing teaching materials to generate student interest and activity during learning. The results of a survey conducted by Zhafira, Ertika, and Chairiyaton (2020) knew that students who were interested in and liked lectures with teaching materials in the form of softcopy files and photos or visual forms as much as 71% while 29% liked lectures with using audio, video and video conference.

One of the teaching materials that are often used in lectures is Students' Worksheets. Students' Worksheets is a teaching material that can help students to explore and solve problems during lectures. Students' Worksheet contains directions for students to investigate a problem and directions for solving the problem given in the form of assignments or questions (Ramadhona & Izzati, 2018). Through Students' Worksheets, lecturers can increase student motivation. High learning motivation tends to cause excitement and assume that learning is no longer a burden but a need, then with that learning objectives will be achieved. In addition to increasing motivation to learn, the use of Worksheets for students can also increase the independence in the student itself in understanding the material so that learning takes place effectively and efficiently. Therefore, lecturers are required to create the Students' Worksheets that can make students play an active role during learning, be independent, and be responsible so that the alternative that can be chosen in creating this students' worksheet is by applying the inquiry method (Ni'mah, 2016). The Inquiry Method is a method of learning that places students as learning subjects where students are required to think more scientifically, develop their creativity, and solve problems independently (Yenni and Kurniasi, 2018). The inquiry can also be interpreted as one of the learning methods that require students to be more independent, creative, and play an active role in investigating and solving the problems given. the Students' Worksheets based on inquiry is a worksheet for students that contains several problems that can trigger students to think critically and make students independently design and solve problems with some given directions such as reading literature or watching videos. This is in line with research conducted by Nazar, Rahmayani, and Yulia (2018), showed that as much as 47.92% of students strongly agree and 50% of students agree with the use of Students' Worksheets based on the inquiry because it can help students in criticizing a problem that occurs in everyday life. According to Ramadhona and Izzati (2018), Students' Worksheets based on Inquiry can increase student learning motivation and student involvement to play an active role both physically and mentally during learning. Lecturers have a role to give direction through Students' Worksheets and guide students in conducting an investigation or discovery of a problem that has been determined so that students are more excited and motivated during learning.

Students' Worksheets can contain photos, illustrations, and videos. Videos contained in Students' Worksheets do not have to be made by lecturers but can utilize available videos. Videos can be obtained from various website video distributors. Some video distribution websites that can be accessed to upload and download omit are youtube, Dailymotion, Yahoo !, Vimeo, vidio.com, MyVideo.de, etc. (Faiqah, Nadjib, and Amir, 2016). The results of research conducted by Setiadi, Azmi, and Indrawadi (2019) showed that internet users who want to find videos of 92% of them will access YouTube as the first destination. Youtube is a video-based information technology with a variety of informative content. Not a few who use youtube as a learning medium. Youtube as a learning medium has many advantages, including 1) Informative and up-to-date, youTube contains various latest and up to date, 2) Cost-effective, youtube videos can be accessed free of charge with the help of the internet network, 3) Potential, the development of technology has made youtube as popular site these days so that many videos

have been uploaded and are very influential on education, 4) Practical and complete, it can be accessed anywhere by using the internet network and can be accessed by all people to obtain information, 5) Shareable, youtube videos provide a link sharing feature to be shared with other sites that can be used for other purposes, and 6) Interactive, youTube provides a comment column feature so that questions and answers can be discussed between creators and video viewers (Suryaman, 2015).

Youtube videos can be used by lecturers to provide direction for students to understand the material more quickly because it is packaged attractively, presenting audio-visual, and on target (Mujianto, 2019). Youtube videos can be loaded into the Students' Worksheet by utilizing the available share link feature. In addition to accessing videos, the video link in this Students' Worksheet is also a form of appreciation for the video creators and to protect the copyright of the videos. Through videos that are also published in Students' Worksheet, students can easily investigate and solve problems given in Students' Worksheet. Besides, students are also more independent, active, creative, and have better experience in solving problems during learning.

Based on the description that has been described, the authors are interested in developing a students' Worksheet based on inquiry that integrated youtube videos. The developed Students' Worksheets is expected to be an alternative to teaching material that can be used during the COVID-19 pandemic. Besides, the development of the Students' Worksheet based on inquiry that integrated YouTube videos is also expected to help students learn independently in limited circumstances.

## METHODOLOGY

This research used the research and development (R&D) type method with the ADDIE model.

According to Ni'mah (2014), the ADDIE development model consists of five stages: (1) Analysis, (2) Design, (3) Development, (4) Implementation; dan (5) Evaluation. The approach to this detail is qualitative. This research focuses on developing a Students' Worksheet based on inquiry that integrated youtube videos as the alternative of teaching materials for online learning during the COVID-19 pandemic.

Research subjects for limited trial of Students' Worksheet based inquiry integrated through youtube video were 50 active students of 2016 to 2018 academic year from the department of Indonesian Language Education, Chemical Education, and Guidance and Counseling of Unsyiah FKIP. The reason for selecting them because they have taken courses according to the Students' Worksheet topic that has been developed. So that the subjects can compare the teaching materials they got before with integrated inquiry-based Students' Worksheet video. Additionally, the deciding of majoring in Indonesian Language Education, Chemical Education, and Guidance and Counseling as the author team came from all three majors.

Students' Worksheet which has been further developed was validated by 3 expert validator lecturers from Indonesian Language Education, Chemical Education, and Guidance and Counseling. Students' Worksheets and the link of the feasibility assessment form were given to each expert validator in soft file form. Eligibility of a Students' Worksheetbased on inquiry assessment instrument integrated through a youtube video that has been developed using the following equations:

$$\% \text{ Validation Result} = \frac{\text{Total Score}}{\text{Maximum Score}} \times 100\%$$

As for interpretation score percentage of validation results, presented in Table 1.

**Tabel 1.** Percentage score interpretation

| Percentage (5) | Criteria     |
|----------------|--------------|
| <b>80-100</b>  | Very decent  |
| <b>66-79</b>   | Decent       |
| <b>56-65</b>   | Quite decent |
| <b>46-55</b>   | Less decent  |
| <b>0-45</b>    | Not worth it |

(Source: Arikunto, 2010)

Students' Worksheet which had been declared worthy by the validators, further tested on the subject of research. The Students' Worksheet soft file was distributed to Whatsapp Group which had been created for each field. Once the Students' Worksheet was shared, students were directed to read and follow the instructions on the Students' Worksheet to answer the questions presented. The next step was the students had to complete answering questions at Students' Worksheet share link form of assessment of Students' Worksheet to be filled by students who became the subject of the study. The result of the poll been developed.

The questions in the assessment of student ratings were processed using the Likert Scale. There are four alternative answers namely (1) Very Concur; (2) Agree; (3) Disagreeing; and (4) strongly disagree. Students response poll analysis can be calculated using the following equations:

$$\text{Value} = \frac{\text{Total of answer agree/not}}{\text{Total Value of each question}} \times 100\%$$

As for interpretation score percentage of students assesment, presented in Table 2.

**Tabel 2.** Percentage score interpretation

| Percentage (5) | Criteria          |
|----------------|-------------------|
| <b>80-100</b>  | Very Concur       |
| <b>66-79</b>   | Agree             |
| <b>56-65</b>   | Disagreeing       |
| <b>46-55</b>   | Strongly disagree |

(Source: Arikunto, 2010)

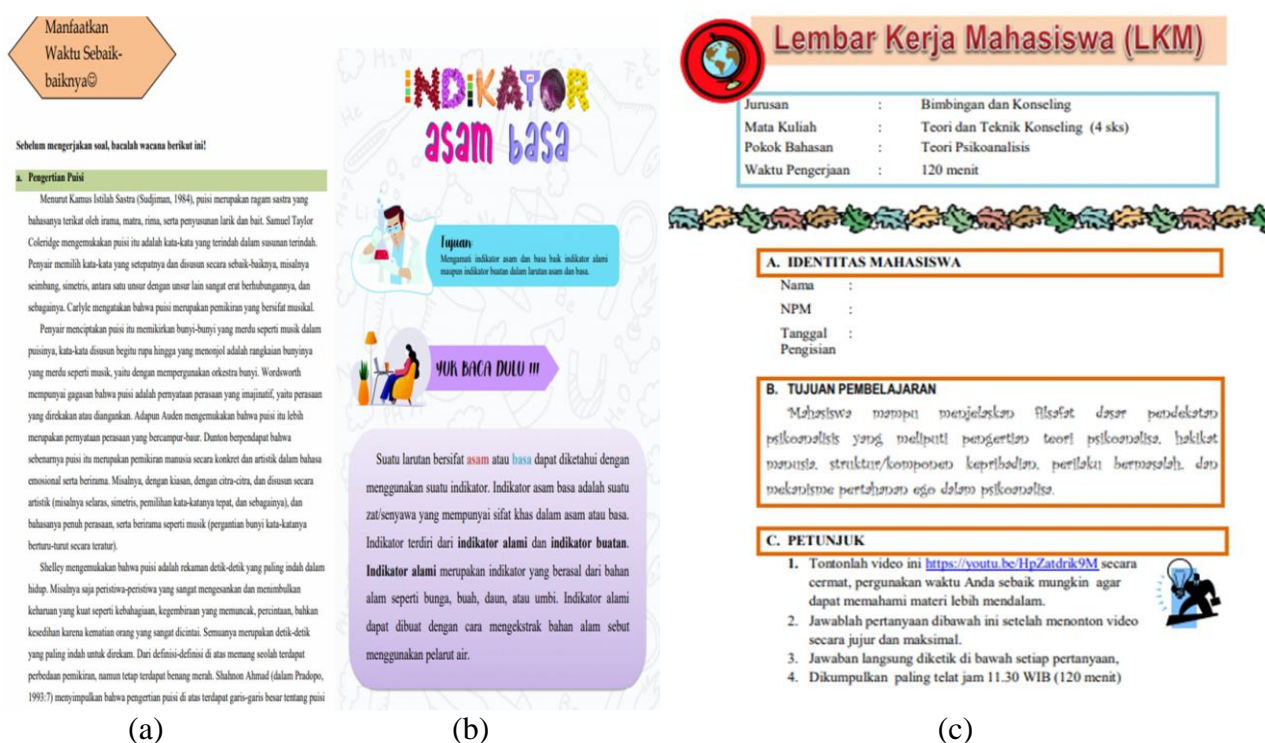
## RESULT AND DISCUSSION

### Analysis Phase

During the current COVID-19 pandemic, students who were studying online tended to feel bored easily. This is because the reading material provided is quite a lot so students were bored reading it. Often students were not motivated because the learning system was less attractive. Students usually worked on assignments given by lecturers via chat on WAG, did it on double folio paper or typed in Microsoft Word, then sent it to their lecturers. This repeation of learning activities made students bored so that lecturers need to create more interesting and not rigid teaching material that can help students to thinkcritically and creatively so that they can get rid of boredom.

## Design Stage

Pribadi (2011) explains the design stage is the core stage of the analysis phase to study the problem and then find alternative solutions according to the results of the needs analysis. The Students' Worksheet design developed has components consisting of a brief theory, video links, and questions. This brief theory contains a brief explanation of concepts that are relevant and related to the material that is to be conveyed through the Students' Worksheet to students. A video link is a link or reference used to connect to videos recommended in the Students' Worksheet. Each video link is placed by the material sub-chapter in the Students' Worksheet and can be a reference to be able to answer the questions that have been designed. Next, it consists of questions that support students' critical thinking. The appearance of the initial design of the developed Students' Worksheet can be seen in Figure 1.



**Figure 1.** Initial Inquiry-based Students' Worksheet Design Display Integrated with Youtube Video: (a) Indonesian Language Education Students' Worksheet, (b) Chemical Education Students' Worksheet, and (c) Guidance and Counseling Students' Worksheet.

## Development Phase

The initial design of the Students' Worksheet carried out many changes, including at the beginning of the paraphrased writing and the material presented looked monotonous and only contained writing, then developed with more limited but on target words, and made in colored boxes, the material presented was combined with a visual of the material and applying more than one video link, and motivational quotes added so students are motivated to read and work on the Students' Worksheet. The initial design did not include many video links and was later developed by adding interesting covers to look at. The appearance of the final design of the developed Students' Worksheet can be seen in Figure 2.





**Figure 2.** Display of Final Inquiry-based Students' Worksheet Design Integrated with youtube Video: (a) Indonesian Language Education Students' Worksheet, (b) Chemical Education Students' Worksheet, and (c) Guidance and Counseling Students' Worksheet.

After the development process is carried out, the Students' Worksheet final product are validated by validators. Validation results can be seen in Table 3.

**Table 3.** Students' Worksheet Validation Results

| No                            | Assesment Criteria  | Score Value |             |             | Average |
|-------------------------------|---|-------------|-------------|-------------|---------|
|                               |   | Validator 1 | Validator 2 | Validator 3 |         |
| A) Students' Worksheet Design |   |             |             |             |         |
| a)                            | Legibility  | 5           | 5           | 5           | 5       |
| b)                            | Accuracy in choosing the shape and size of the letters used | 5           | 5           | 4           | 4.66    |
| c)                            | Practicality of size  | 5           | 4           | 5           | 4.66    |
| B) The Video                  |   |             |             |             |         |
| 3.                            | Video display quality                                       | 5           | 4           | 4           | 4.33    |
| 4.                            | the accuracy of video selection with material               | 5           | 4           | 4           | 4.33    |
| 5.                            | the use of video in learning                                | 5           | 4           | 5           | 4.66    |
| 6.                            | Suitability of video placement with related material        | 5           | 4           | 4           | 4.33    |
| C) Picture                    |   |             |             |             |         |
| 2.                            | Image display quality                                       | 5           | 4           | 4           | 4.33    |
| 3.                            | The accuracy of the selection of images with the material   | 5           | 5           | 5           | 5       |
| 4.                            | The use of images in learning                               | 5           | 5           | 4           | 4.66    |
| 5.                            | Appropriate placement of images with related material       | 5           | 4           | 5           | 4.66    |
| D) Theory                     |   |             |             |             |         |
| 4.                            | The truth of the concept                                    | 5           | 4           | 5           | 4.66    |
| 5.                            | Accuracy in content coverage                                | 5           | 4           | 5           | 4.66    |
| 6.                            | The order of material / sub chapters Displayed              | 5           | 4           | 4           | 4.33    |
| 7.                            | Easy to understand  | 5           | 5           | 5           | 5       |
| E) Language                   |   |             |             |             |         |
| b)                            | Use language that is easy to understand                     | 5           | 4           | 4           | 4.33    |
| c)                            | Word Selection  | 5           | 5           | 4           | 4.66    |
|                               | Total Score   | 8.5         | 76          | 74          | 78.33   |
|                               | Average   | 5           | 4.35        | 4.47        | 4.6     |

Based on Table 3, the average percentage of Students' Worksheet validation results obtained by 3 validators is 92%, included in the feasible category. This is supported by Arikunto (2010) who categorizes that the percentage of assessment results in the range of 80-100, including the

category is very feasible. A perfect score is given by the validator for the readability of the Students' Worksheet design, the accuracy of the selection of images with the material, and the ease of understanding the material. In general, all validators provide the same ratings for Students' Worksheet that are developed. This stage of development has created an inquiry-based Students' Worksheet that integrates youtube videos. This Students' Worksheet has also been validated by a team of experts and obtained valid assessments so it is very feasible to apply to students.

### Implementation Phase

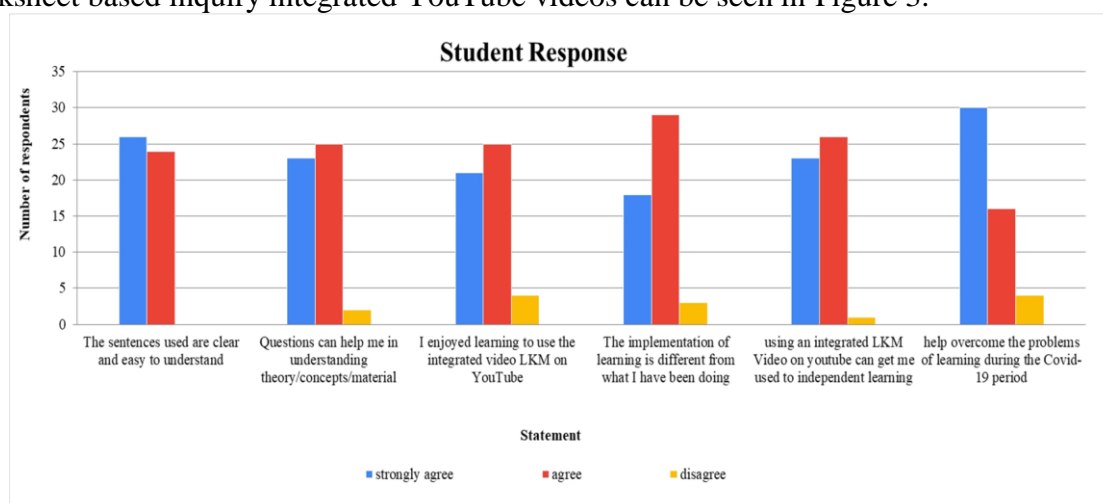
The application of the Students' Worksheet was carried out through a limited trial of 50 students, including students majoring in Indonesian Language Education, students majoring in Chemistry Education, and students majoring in Guidance and Counseling. The application of Students' Worksheet is carried out through WAG (Whatsapp Group) by sharing Students' Worksheet links that need to be filled out by students. Students are then directed to read the given Students' Worksheet and follow all the instructions in the Students' Worksheet, such as reading a short theory, watching a Youtube video from the video link that is already on the Students' Worksheet, to answering questions in the Students' Worksheet. Achievement of competencies that are expected to be considered in Students' Worksheet that has been filled by students.

### Evaluation Stage

Evaluation activities are carried out through filling out student response questionnaire that are distributed through WGA (Whatsapp Group). Response questionnaire can be accessed via the link provided. Every question in this questionnaire is processed using a Likert Scale. There are four alternative answers made namely strongly agree (SA), agree (A), disagree (DS), and strongly disagree (SDS).

### Student Response

Student responses to the application of the developed Students' Worksheet can be known through the calculation of questionnaire results. The results of students' responses to Students' Worksheet based inquiry integrated YouTube videos can be seen in Figure 3.



**Figure 3.** Student Response Questionnaire to Inquiry Based Students' Worksheet Integrated with Youtube Video.



Based on the students' responses in Figure 3, the responses were generally very good. The recapitulation results of the students' questionnaire responses show that as many as 95% of students gave a positive response to the Students' Worksheet that had been developed. As many as 92% of students agree that Students' Worksheet can help overcome learning problems during the COVID-19 period, 100% of students agree that the sentences in Students' Worksheet are clear and easy to understand, and 98% agree that the Students' Worksheet developed is able to direct students to learn independently.

## CONCLUSION

Based on the results of the study, it can be concluded that Students' Worksheet based on inquiry that integrated Youtube videos are feasible to be used as the alternative of teaching materials online to learn during the COVID-19 pandemic. The results of the student's questionnaire response showed the students agree that the Worksheet can help to learn during COVID-19, the sentences in the worksheet are clear and easy to understand, the developed Students' Worksheet is able to direct students to learn independently, and the students easily understand the theory/concept/material through the questions presented in the Students' Worksheet based on inquiry that integrated by YouTube videos.

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