Development of Character-Based Student Worksheets in Online Learning in Geography Subjects

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ABSTRACT

This research is a Research and Development which aims to develop and determine the feasibility of character-based student worksheets in the subject of Geography. The development model applied is a 4-D model which is modified into 3-D consisting of define, design, and develop. Data collection techniques were carried out using observation, interviews, documentation, and questionnaires. The results of research and development show that first, character-based student worksheets have been able to be developed and declared very valid based on the results of the questionnaire obtained from the assessment and responses by validators, namely material experts at 90.52 %, linguistic experts at 95.00 %, and teaching materials experts at 84.00 %. Second, character-based worksheets are considered very practical based on the results of the teacher's response questionnaire of 91.30 % and students of 86.60 %. The character-based student worksheets that have been produced have only been tested on a limited group, so it is necessary to conduct extensive trials in order to further confirm the effectiveness of the student worksheets made. In addition, the character-based student worksheets produced is only limited to one Basic Competence, therefore further development can be carried out with other Basic Competencies so that the process of strengthening character values can be carried out more deeply.

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1.   INTRODUCTION

In Law number 20 of 2003 regarding the National Education System in Article 3 it is emphasized that national education functions to improve competence, build personality and civilization of the Indonesian state which has the dignity to educate the joints of life with the aim of optimizing the skills of students so that they are able to become religious, character, independent, knowledgeable, competent, innovative,

independent, and trustworthy and have a populist attitude as citizens (Sujana, 2019). In the end, the educational process must be able to maximize the potential of students who not only excel in academics but also have noble character. Efforts to bring up character values and habituation in the long term will create a school culture which ultimately shapes the behavior of students in dealing with their daily lives to become eternal as character (Suparno, 2018). Considering the need for character education is such a crucial factor, in the implementation of the 2013 curriculum, the priority is to strengthen character values that prioritize the character development of students throughout the learning process (Shafa, 2014), (Waseso, 2018), and (Sholekah, 2020), so that the ultimate goal of the 2013 curriculum is to shape character behavior, increase knowledge and skills (Maqfirah, 2020).

The creation of learning activities that are pro-student and meaningful that are oriented toward character building continues to be intensified by the residents of SMA Negeri 2 Sambas in growing a culture of character in accordance with the vision and mission that has been declared. Various actions were taken to instil character values including integrating them into the learning process. According to the student representative of SMA Negeri 2 Sambas, character strengthening requires habituation in schools that initially are coercive, but will be an effort to change the character of students for the better, such as praying the midday prayer in congregation, welcoming students by the teacher in the morning, and so on. The facts on the ground today, there have been major changes since the country was hit by a disease outbreak, namely Corona Virus disease (Covid-19), the application of character education is increasingly difficult to implement. The social distancing policy has an impact on the interaction of the learning process. Based on Circular No. 36962/MPK.A/HK/2020 published by the Ministry of Education and Culture of the Republic of Indonesia, it is stated that the learning process at all levels of education is carried out using an online system (online learning). This change in the teaching and learning system requires extraordinary adaptation for the whole community, especially for teachers and students and affects all types of educational activities including the character-strengthening process.

Based on pre-research interviews conducted with several teachers at SMA Negeri 2 Sambas, especially Geography teachers and counselling guidance teachers and students, it was concluded that with online learning there was a decrease in the character quality of students. Students become inactive, lack discipline and responsibility in attendance, work and collection of assignments as well as etiquette in communicating with impolite teachers are some indications that the character of students is starting to experience degradation. The online learning process that only relies on WhatsApp groups without being accompanied by virtual meetings makes it difficult for teachers to strengthen the character of students. Based on notes from the vice principal of student affairs, throughout the online learning process, more than 60 students were in the problematic category, so a home visit was needed and parents were called. Research conducted by previous researchers such as (Sari et al., 2020) and (Asmuni, 2020) also produces a picture of similar conditions and problems, that learning strategies are also difficult to do in virtual meetings so only maximizing the use of chat platforms only shows that there are problems of decreasing the quality of students' character such as discipline, honesty, responsibility, hard work and independence.

8 character values are strikingly degraded namely discipline, creativity, hard work, honesty, curiosity, religion, responsible, and independent character items. From each note, the teacher recorded that each item of the character was more than 70 % of students who experienced problems. After further investigation, one of the reasons is the lack of attractiveness of the online learning process implemented by the teacher, including the lack of use of teaching materials. The same thing also happened to the Geography subject, the supporting teacher had never used teaching materials other than textbooks as a complement and support for the learning process. The online learning process causes teachers to be able to create and design learning activities that are not only effective but also meaningful and interesting for students, such as formulating problems, searching for data, collecting data from various sources, digesting data, checking information, presenting data which in the end will be able to shape the character of students by taking the online learning process (Pertiwi, 2020). The planting of character values in the online learning process is carried out using actions that integrate these character values into teaching and learning activities (Adi, 2020).

Strengthening character values can be integrated into every subject, including Geography lessons. The basic competencies in Geography subject matter are so close to the lives of students that the implementation process is easy to implement as an application of the psychomotor and affective domains. Regulation of the Minister of Education and Culture Number 65 of 2013 concerning Standards for the Primary and Secondary Education Process states that the process of making learning instruments is included in the part of learning planning activities. When planning to learn, it is necessary to prepare learning resources, media used, assessment instruments, and Learning Implementation Plans (LIP) including teaching materials to be used. Teaching materials are various materials in the form of explanations, equipment, and also manuscripts or reading materials that are deliberately designed systematically related to the skills that must be mastered by students and can be used in teaching and learning activities (Prastowo, 2015). Some examples of teaching materials include student worksheets, modules, textbooks, handouts, audio and interactive teaching materials, and learning mockups. Based on the analysis of learning device needs, student worksheets is one of the learning tools that are often used and needed in learning.

Some research results (Winaya, 2020), (Munandar et al., 2015), (Tarigan et al., 2019), (Dewi et al., 2017), and (Ibrahim et al., 2015) known to use the student worksheet as an effort to create a teaching and learning process that is not only effective but also able to integrate the development of character values such as independence, responsibility, creativity, curiosity, caring, and discipline. In the end, the result of the learning process does not lie absolutely in the ability to master the results of the exercise, but rather a change in attitude due to the interaction between students and their environment. The steps in completing the activities in the student worksheets will lead students to be able to develop character values. Students answer several questions that are not only rote but will also directed at finding concepts and implementing the knowledge they have acquired. Through the student worksheets, students obtain a more systematic and interesting study guide, including efforts to strengthen their character so that the independent and active potential of students will be explored. This is certainly in line with one of the expectations of the implementation of the 2013 Curriculum. The results of hearings with Geography teachers at SMA Negeri 2 Sambas, it is known that the application of student worksheets in the online Geography learning process has never been done. Moreover, in the current learning conditions, teaching and learning activities only rely on chat platforms, namely whatsapp groups. On the basis of these problem conditions, the authors conducted research that would provide an alternative in overcoming the problems that occurred with the title "Development of Character-Based Student Worksheets in Online Learning in Geography Subjects". This research aims to; (1) develop character-based student worksheets. for Geography subjects and (2) determine the feasibility of character-based student worksheets.

2. METHODS

The type of research applied in Research and Development (R & D) refers to the 4-D development model (define, design, develop, disseminate) from S. Thiagarajan, but in this study, it was modified to 3-D so that only up to the development stage. This research was conducted for almost 10 months starting from March 2021 to December 2021 starting from pre-research activities to limited trials. The research subjects consisted of 1 Geography teacher and 20 students in class XI IPS SMA Negeri 2 Sambas who were selected through a random sampling system by drawing lots. There are 4 types of data collection techniques used, namely observation, interviews, documentation, and questionnaires. Meanwhile, the data collection instruments applied consisted of two categories, namely; (1) the validation instrument used to measure and obtain data on the validity of the student worksheets developed by utilizing the validation sheet which will be reviewed by material experts, linguists, and teaching materials experts, and (2) practicality instruments used to obtain data on the practicality of use student worksheets which was developed by utilizing the questionnaire responses of teachers and students. The student worksheet eligibility data were analyzed using a quantitative descriptive method that applied the Likert score calculation with a range of 1 (disagree) to 5 (strongly agree). The calculated scores for the validity and

practicality data are then converted into percentages and interpreted into criteria according to the following table.

Tabel 1. Validity Interpretation Criteria

Achievement Level	Criteria	Test Decision
81 % - 100 %	Very valid	No Revision Needed
61 % - 80 %	Valid	No Revision Needed
41 % - 60 %	Quite Valid	Revision Needed
21 % - 40 %	Less valid	Revision Needed
0 – 20 %	Invalid	Revision Needed

Source : Setiawati 2013 in (Fitriani, 2020)

Table 2. Practical Interpretation Criteria

Achievement Level	Criteria
$80< X \leq 100\%$	Very Practical
$60< X \leq 80\%$	Practical
$40< X \leq 60\%$	Quite Practical
$20< X \leq 40\%$	Less Practical
$0< X \leq 20\%$	Not Practical

Source: Sari (2015)

According to Setiawati 2013 (Fitriani, 2020), character-based student worksheets are said to be valid if they get a validity score percentage of 61 % and according to Sari (2015), character-based student worksheets are considered practical when obtaining a practicality score percentage of 60 %.

3. FINDINGS AND DISCUSSION

3.1. Findings

The main purpose of this research is to develop a character-based student worksheet for students of class XI Social Sciences in the subject of Geography by using 4-D models (Four D Models) which have been modified into 3-D (Three D Models). The development flow of this 3-D model consists of three stages, namely the define, design, and developing stages. It will be described in more detail below.

Define

Front-end Analysis

From the results of interviews with two Geography teachers, thirteen other subject teachers, two counselling guidance teachers, and two students, the research findings indicate that the problem that is considered the most crucial in the research location is the character degradation of students as one of the impacts. Online learning without virtual meetings and the lack of use of teaching materials by teachers during the learning process. This is similar to the research conducted by (N. K. Sari et al., 2020) that one of the impacts of online learning is a decrease in the quality of the character of students. Such problem conditions also occur in research (Asmuni, 2020) where students are less enthusiastic about participating in the online learning process. Similar to research (Asmuni, 2020), If viewed from the teacher's perspective, it was also found conditions where teachers experienced limited control over the learning activities of students during the learning process, including teachers also experienced difficulties in instilling or strengthening the character values of students so that the quality of students' character gradually degraded. Such a learning process is certainly not a teaching and learning activity that is expected because a good learning process is not only transferring knowledge from the teacher to students or simply

interpreting learning but also being able to shape competence and improve the quality of the character of students (Salsabilah et al., 2021).

Learner Analysis

Based on the results of interviews with counselling guidance teachers, it is known that students in class XI are between 15-17 years old. Cognitive development according to Jean Piaget's Theory in (Ibda, 2015) states that at this age range, a child has been able to think abstractly and develop hypotheses logically. At this age range children have been able to solve problems and form arguments because their operational competencies have developed to be more complex. In the same age range, children have been able to show an attitude of independence.

Concept Analysis

Concept formulation is carried out on teaching materials developed by identifying the things that will be included in the character-based student worksheets that are prepared. Activities carried out at this stage include identifying, detailing, and systematically compiling the main materials that will be studied by students.

Task Analysis

In honing the cognitive abilities of students, the tasks given are in the form of solving analytical questions by prioritizing the demands of problem-solving, critical, and inquiry thinking patterns which begin by presenting an article containing problems that are currently happening and relevant to the material being studied discussed. Psychomotor abilities of students, the tasks given are in the form of tasks that require students to produce various works. When students complete all these cognitive and psychomotor tasks, the affective side of students is also developed because it includes activities that are principled in strengthening character values.

Specifying Instructional Objectives

The formulation of learning objectives is obtained from competency achievement indicators which are the result of derivatives of basic competencies by the 2013 Curriculum. In addition to general learning objectives, the authors also specifically separate learning objectives related to strengthening character values which the researcher calls affective learning objectives.

Design

At the design stage, there are several stages carried out by the researcher, namely the stage of selecting teaching materials, the stage of selecting the format of the developed teaching materials (in this case in the form of character-based student worksheets), and the initial design stage of character-based student worksheets.

Selection of Teaching Materials

Based on concept analysis, task analysis, student analysis, and existing problems, the teaching materials chosen to be developed are character-based student worksheets on the material 'distribution and management of forestry, mining, marine, and tourism resources with the principles of sustainable development in class XI IPS.

Selection of Student Worksheet Formats

This character-based student worksheets format includes the student worksheets' title page, introduction, table of contents, instructions for using student worksheets, Core Competencies (CC) and Basic Competencies (BC), Competency Achievement Indicators (GPA) and learning objectives, learning affective objectives, mind maps, student worksheets (consisting of GPA, learning objectives, learning

affective objectives, student learning instructions, tools and materials, apperception, theoretical basis, student activities, assessment, 'Do' feature, 'Do you know' feature, character value affirmation feature namely 'You are Cool', self-assessment), evaluation, implementation of character values, reflection in the form of comic strips, bibliography, inner back cover page in the form of illustrations of characters becoming a culture in the form of comic strips, and outer back cover pages in the form of information on 4 types of characters or human personality.

Initial Design of Student Worksheets

In designing character-based student worksheets, the researcher did it in several stages; (1) paying attention to the student worksheets structure by not only fulfilling the 6 mandatory components that must exist in a student worksheets but also adding several other components, (2) formulating Basic Competencies (BC), and (3) designing student worksheets by dividing into three main parts, namely the beginning, body, and end.

Develop

This stage is the stage of developing character-based student worksheets which have passed several validations or reviews from various parties who are experts in their fields.

Expert Validation

It begins with a feasibility assessment carried out by material experts, linguists, and teaching materials experts. In the following, the results of the validation by material experts are presented.

Table 3.Average Validation of Character-Based Student Worksheets by Material Experts

Assessment Aspect	Percentage (%)	Criteria
Material Eligibility	88,00	Very Valid
Material Accuracy	94,00	Very Valid
Serving Suitability	94,00	Very Valid

Source : Primary Data 2021

Based on the results of the assessment by the material expert, it can be seen that the character-based student worksheets in terms of material feasibility obtained an average percentage of 88.00 % with very valid criteria, material accuracy aspect of 94.00 % with very valid criteria, and the suitability aspect of the demands presented student-centred learning is 94.00 % with very valid criteria. Meanwhile, the results of the assessment of linguists can be seen in the following table.

Table 4. Average Validation of Character-Based Student Worksheets by Linguists

Assessment Aspect	Percentage (%)	Criteria
Language	95,00	Very Valid
Strengthening Character Values	95,00	Very Valid

Source : Primary Data 2021

The results of the assessment by linguists as in Table 8 can be seen that the average percentage of linguistic aspects and aspects of strengthening character values are 95.00 % each with very valid criteria so that according to linguists the character-based student worksheets developed are suitable to be used as one of the teaching material in the Geography learning process. Furthermore, the results of the assessment by teaching materials experts are shown in the following table.

Table 5. Average Validation of Character-Based Student Worksheets by Teaching Material Expert

Assessment Aspect	Percentage (%)	Criteria
Eligibility Based on Presentation	88,20	Very Valid
Eligibility Based on Graphics	90,00	Very Valid
Eligibility Based on Character Values Indicator	77,00	Valid

Source : Primary Data 2021

From the table, it can be understood that the average percentage of validation by teaching materials experts on character-based student worksheets developed for the feasibility aspect based on presentation obtained a value of 88.20 % with very valid criteria, eligibility based on graphics of 90.00 % with very valid criteria and the feasibility based on the character values indicator is 77.00 % with valid criteria.

Limited Trial

The limited trial was conducted on one Geography teacher and twenty students. In this trial, teachers and students were given a response questionnaire to the character-based student worksheets which were developed to determine the level of practicality. The following table presents the results of the average percentage of teacher responses to character-based student worksheets.

Table 6. Average Teacher Responses to Character-Based Student Worksheets

Assessment Aspect	Percentage (%)	Criteria
Student Worksheet Display	100	Very Practical
Language of Student Worksheets	88,40	Very Practical
Fill in the Student Worksheet	97,40	Very Practical
Benefits of Student Worksheets	91,20	Very Practical
Character Strengthening	81,60	Very Practical

Source: Primary Data 2021

The data presented in Table 10 shows that the average percentage of teacher responses to character-based student worksheets for the display aspect is obtained by 100 %, the linguistic aspect by 88.40 %, the content aspect by 97.40 %, the benefit aspect by 91.20 %, and aspects of strengthening character values of 81.60 % with each of these aspects included in very practical criteria. Meanwhile, the students' responses to the character-based student worksheets that were developed can be seen in the following table.

Table 7. Average Student Responses to Character-Based Student Worksheets

Assessment Aspect	Percentage (%)	Criteria
Student Worksheet Display	90,00	Very Practical
Language of Student Worksheets	91,40	Very Practical
Fill in the Student Worksheet	84,00	Very Practical
Benefits of Student Worksheets	85,00	Very Practical
Character Strengthening	85,60	Very Practical

Source : Primary Data 2021

Based on the results of the assessment presented in Table 11, it can be seen that the average percentage of student responses to character-based student worksheets for the display aspect is 90.00 %, the linguistic aspect is 91.40 %, the content aspect of the student worksheets is 84.00 %, the benefit aspect is student worksheets is 85.00 %, and aspects of strengthening character values are 85.60 % with each aspect being included in very practical criteria.

3.2. Discussion

Eligibility of Character-Based Student Worksheets

Seeing the learning process that can only be done using WhatsApp media and the Geography teacher has never used any teaching materials during online learning, the alternative that the researcher developed is the character-based Student Worksheet. Student worksheets were chosen because, in addition to being easy to use in various learning conditions, student worksheets can also be used by educators and students to develop new knowledge concepts, including integrating character values to build the character of students. In line with (Komalasari & Pardjono, 2015) who also uses student worksheets as an effort to integrate character values to develop the character of responsibility and discipline. According to them, student worksheets is a teaching material that can optimize the competence of knowledge, skills, and attitudes of students in a learning process which in the end will be able to shape students' thinking abilities holistically. Research (E. Sari et al., 2016) who also use student worksheets as an effort to build the character of students, state that student worksheets encourage students' interest and activity in learning.

Previously (Prastowo, 2015) has emphasized that through teaching materials in the form of student worksheets the teacher will easily attract the attention of students so that they are actively involved in the learning process. In addition, the presence of student worksheets as teaching material in the learning process in class XI IPS SMA Negeri 2 Sambas will be a new thing because teachers who teach Geography in Class XI IPS have never used student worksheets as a supporter of the implementation of effective learning activities, both student worksheets purchased from parties publishers and student worksheets made by the teacher himself. This means that the presence of these character-based student worksheets is not only able to support efforts to create a conducive learning process, including efforts to strengthen character values, but also becomes an innovation for Geography teachers in research schools. Character-based student worksheets are designed and developed not only to meet the ideal standards of compiling a student worksheet but also to promote the strengthening of character values in them. Based on (BSNP, 2012) aspects that must be considered in the preparation of student worksheets are the dimensions of the feasibility of content, language, presentation, and graphics. In principle, the main requirements of the process of making student worksheets are paying attention to construction, technical, and didactic provisions (Rahayuningsih et al., 2018). The character-based student worksheets that have been developed have taken into account these requirements including meeting the minimum structure of student worksheets proposed by (Prastowo, 2015) namely titles, study instructions, competencies, supporting information, tasks and work steps, and assessments.

In the development process, character-based student worksheets are made not only to fulfil these minimum elements but are added with other elements such as instructions for using student worksheets, competency achievement indicators (GPA), learning objectives, concept maps, features to recognize the potential of your area!, tools and materials, apperception, basic theory, feature do, feature you are cool!, self-assessment, evaluation, implementation of character values, reflection in the form of comic strips, bibliography, and character illustrations become culture. In addition, a touch of development is also carried out by providing elements of strengthening character values either explicitly such as the presence of motivational words or aphorisms in several corners of the student worksheets, affirmation of character values contained in each subject on the theory of the basic feature, steps in the features of instructions for using student worksheets and student learning instructions, affective learning objectives, self-assessment, reflection features, character value implementation features, and character illustration features into a culture. Meanwhile, the strengthening of implicit character values lies in the activities of students when completing all activities, both when answering questions and completing assigned tasks. This development step is a complement to several previous studies which also developed student worksheets teaching materials such as research results (Afkar & Hartono, 2017), The student worksheets compiled consist of title elements, mind maps, study instructions, basic competencies, supporting information, tasks and work steps, assessments, and a

bibliography. Likewise with the results of research (Hutami, 2016) which in the student worksheets its development does not contain several elements as researchers did in character-based student worksheets, including the absence of features of instructions for using student worksheets, learning objectives, learning affective objectives, mind maps, assessments, and several other elements. From the two research results, the developed student worksheets also have not integrated the character values that need to be instilled in students.

The character-based student worksheets that were developed was further validated to obtain confirmation regarding the feasibility of character-based student worksheets as teaching materials in the learning process. Validation was carried out by three experts, namely material experts, linguistic experts, and teaching materials experts. In contrast to the research conducted by (Maghfiroh, 2019) which only uses two validators, namely material experts and teaching materials experts. Similar to the research conducted (Afkar & Hartono, 2017) which also only uses two validators, namely material experts and media experts, but it is the same as the research conducted by (Puspita, 2019) which uses three validators, namely material experts, linguists, and media experts. In line with the research conducted by (Lase & Lase, 2020). Based on the validation results from material experts, linguists, and teaching materials experts, the character-based worksheets developed obtained an average percentage of 89.84 %. According to Setiawati (2013) in (Fitriani, 2020), such results fall into the very valid criteria and are considered suitable for use. The results of this validation are in line with research conducted by (Puspita, 2019) with an average validation result of 87.17 %. Another supporting research is (Lase & Lase, 2020) where the results of the validity test show that the average assessment of the three validators is 98.33 %.

The Practicality of Character-Based Student Worksheets

The character-based student worksheets were then tested in small or limited groups, name given to one Geography teacher who taught in class XI IPS and 20 students in the second XI IPS class to be asked for their responses to the character-based student worksheets that were developed. The results of the questionnaire responses of teachers and students to character-based student worksheets, the average percentage of teacher responses were obtained by 91.30 % and students by 86.60 %. According to Sari (2015), student worksheets are declared practical at least obtaining a response percentage rate of 60 %. The results of these two responses when matched with the criteria of practicality are included in the range of values of 80% < X 100 with very practical practicality criteria. Such results mean that teachers and students are easy to use character-based student worksheets in the learning process. This in line with the opinion of Nieveen (1999) in (Wahyuni et al., 2021) who state that the practicality of a teaching material product can be seen from the responses or reactions of the users of the product. In general, character-based student worksheets is said to be practical because in the process of its use there are already instructions for using student worksheets and student learning instructions as well as the structure of the student worksheets is made systematically arranged so that teachers and students will easily use them. In addition, this character-based student worksheets is of course very helpful for teachers and students in creating a much more conducive learning process with all the limitations that exist in the online learning mode. On the other hand, character-based worksheets are presented attractively enough to arouse the curiosity of students which in turn raises students' learning motivation. According to opinion (Kumalasani, 2018), that teaching material that is practical in nature will be able to foster learning motivation.

4.   CONCLUSION

Based on the results and discussion, the conclusions in this study are: 1) the development of character-based student worksheets using a 3-D development model (define, design, and develop) produces a teaching material product in the form of student worksheets which is able to support the Geography learning process much more effectively; 2) Character-based student worksheets that are developed are not only able to hone students' cognitive and psychomotor abilities but can also help

teachers in the process of strengthening students' character values; 3) Character-based student worksheets are declared very valid based on the results of the questionnaire obtained from the assessment and responses of the validators, namely material experts at 90.52 %, linguistic experts at 95.00 %, and teaching materials experts at 84.00 % with an average validation result overall by 89.84 %; and 4) The results of the character-based student worksheets trial were stated to be very practical to be used in the Geography learning process. This very practical decision was obtained from the results of the percentage of teacher responses of 91.30 % and student responses of 86.60 % of the character-based student worksheets developed.

The character-based student worksheets that have been produced have only been tested on a limited group, so it is necessary to conduct extensive trials in order to further confirm the effectiveness of the student worksheets made. In addition, the character-based student worksheets developed are only limited to one Basic Competence, therefore further development can be carried out with other Basic Competence, especially in the observation process and also strengthening the character values of students should be carried out over a longer period of time so that it is necessary to develop student worksheets by using more than one Basic Competence at the same class and semester level.

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