



Development Students Worksheet Using Ethnomatematics-based CTL Approach on SLETV Subject Material for Grade X

Ditya Mursalina¹, Marhamah², and Allen Marga Retta³

Universitas PGRI Palembang, Palembang, Indonesia.

Corresponding Author : Dityamursalinaaa@gmail.com¹, Marhamah1904@gmail.com², allenmargaretta1@gmail.com³

Received: January, 2021

History Article
Accepted: May, 2021

Published: June, 2021

Abstract

This study aims to produce worksheets using an ethnomatematic based CTL approach on SLETV material that is valid and practical. This type of research and development is R&D. The ADDIE development model consists of: analyze, design, development, implementation, evaluation. However, this research is limited to the implementation stage for individual trials (one to one) and small group trials. The results of this study were obtained from the aspects of validity and practicality. a) the validity aspect is obtained based on 3 validators with assessment aspects based on content, construct, and language with the first validator score of 84.61% in the "valid" category then the second validator is 92.30% with the very valid category and the third validator is 86.53 % with a valid category. b) the practicality aspect is obtained based on 9 student response questionnaires given in the small group trial stage completed with an average score of 83.79% and categorized as "practical".

Abstrak

Penelitian ini bertujuan untuk menghasilkan produk LKS Menggunakan Pendekatan CTL berbasis etnomatematika pada materi SLETV yang valid dan praktis. Jenis penelitian dan pengembangan ini adalah R&D. Model pengembangan ADDIE terdiri dari: analyze, design, development, implementation, evaluation. Namun pada penelitian ini dibatasi pada tahap implementasi untuk uji coba perorangan (one to one) dan uji coba kelompok kecil (small group). Hasil penelitian ini di peroleh dari aspek kevalidan dan kepraktisan. a) aspek kevalidan di peroleh berdasarkan 3 validator dengan aspek penilaian berdasarkan isi, konstruk, dan bahasa dengan skor validator pertama yaitu 84,61% dengan kategori "valid" kemudian validator kedua 92,30% dengan kategori sangat valid dan validator ketiga yaitu 86,53% dengan kategori valid. b) aspek kepraktisan diperoleh berdasarkan 9 angket respon siswa yang diberikan pada tahap uji coba kelompok kecil selesai dengan skor rata-rata 83,79% dan dikategorikan "praktis".

Keywords: Development, Students Worksheet, CTL, Ethnomatematics, SLETV.

INTRODUCTION

Mathematics is part of a subject that plays an important role in education and can

produce competent human resources (HR) (Fitriyana & Purwasi, 2018). According to Rewatus (2020), mathematics has

an important role in everyday life because almost everything around us is related to mathematics, including culture.

Mathematics comes from the word *mathema*, which means knowledge and *mathemain*, which means thinking, learning (Muhlisarini and Hamzah, 2014). According to Sumartini (2016), it explains that mathematics has an important role in all aspects of life, especially in improving human thinking. Mathematics has an important role in developing students' thinking power. One of them is in understanding concepts in mathematics. To develop and improve students' thinking power in solving math problems, students need to understand the concepts contained in mathematics. Therefore, conceptual skills are one of the basic abilities' students have that must be mastered by students. One approach that is considered good to contribute to improving conceptual understanding is the contextual approach.

The Contextual Teaching and Learning Approach is the concept of learning that links the material being taught with real world situations (in everyday life) (Apriani *et al*, 2017). In line with Lestari & Yudhanegara (2017) state that CTL is a learning process that seeks students to explore their abilities, learn concepts, and apply them in the real world. Therefore, teachers need to be able to relate the material being taught to real life. Therefore, students can more easily understand mathematics. Therefore, they can get good learning outcomes. In line with Retta (2017) states that good learning outcomes will be determined by the right method as well, in the form of attitudes and behavior, or it can also be the result of the learning process by giving tests to students so that in this study researchers used CTL approach so that makes it easier for students to understand the material to solve problems that exist in students worksheets with the

application that exists in everyday life so that they can get good learning outcomes later

According to (Hasibuan, 2014), there are seven components that base CTL learning: Constructivism, Inquiry, Question, Learning and Community, Modeling, Reflection, and real assessment. According to Annisa (2009) there are several advantages in implementing CTL approach, including learning that will be more meaningful and real, learning will be productive and able to foster the concept of reinforcement so that it can foster students' courage in expressing their opinions about the material to be studied.

However, there are several things that explain the weaknesses in CTL learning, including in the application of learning, CTL does not always work well. Researchers also experience several obstacles and weaknesses. According to Ubaidilah & Saalamah (2020), there are several weaknesses in this CTL learning, including the CTL learning approach which is complex and difficult to implement in the context of learning, besides that CTL can take a long time. Next, CTL can be considered less efficient because it requires a long time in the teaching and learning process. Then Putrianasari & Wasitohadi (2015) explained that CTL learning is group learning where some students are not happy when asked to cooperate with others. They are feeling worried that group members will lose student characteristics because they must adjust to the group. Therefore, students who cannot participate in the group do not get the same knowledge and same experience as other friends because they do not understand themselves.

However, the thing above can be overcome by using teaching materials in the form of student's worksheets based on the CTL approach to make the learning process more active and creative through

group discussions where each group member can present his/her opinion/idea on any discussion that becomes learning.

Mathematics has an important role in everyday life. Almost everything around, was related to mathematics, including the culture of society. According to Setiana & Ayuningtyas (2018), one of the things that can bridge mathematics and culture is ethnomathematics. According to Kurniawan and Hidayati (2019), learning ethnomathematics, data is used as a connecting material that can explain formal mathematics in different learning contexts.

Ethnomathematics is a bridge between mathematics and culture (Wahyuni et al, 2013). Meanwhile, according to Abi (2017), ethnomathematics is a form of cultural integration in learning mathematics. so that ethnomathematics is a form of mathematics based on culture. This is in line with Prabawati (2019) which states that mathematics has an important role in everyday life, including in culture. Through the role in ethnomathematics it is hoped that students can more

understand mathematics and culture so that cultural values can be part of the character of the Indonesian nation. One material that can be related to real life with elements of Ethnomathematical culture is the System of Linear Equation in Three Variable (SLETV).

SLETV is one of the subject materials where students still have many difficulties in learning (Siasa et al, 2018). These difficulties can occur due to the lack of student understanding of the concepts and the difficulty in problem solving (counting operations) on SLETV subject material. The concepts in SLETV must have been used or implemented in everyday life and formed in story problems. Based on the study conducted by Zakaria (2016), these difficulties include students who are not able to communicate information as the correct variable, students are still confused in choosing the terms which are being variables so that they do not understand the concept which can have an impact on the problem-solving process in System of Linear Equations in Two Variable and Three Variable subject

Nama: Dea Mowarni
 Kelas: XI IPA 3
 Sekolah: SMA Negeri 21 Palembang

1. Ella, Devi, dan Mana pergi ke toko alat tulis. Disana, mereka membeli beberapa peralatan tulis. Ella membeli 2 buku tulis, sebuah pensil dan sebuah penghapus Rp. 4700. Kemudian Devi membeli sebuah buku tulis, 2 pensil dan sebuah penghapus dengan harga Rp. 4300. dan Mana membeli 3 buah buku tulis, 2 pensil dan sebuah penghapus dengan harga Rp. 7100. Berapa untuk harga sebuah buku tulis, pensil dan penghapus?

• Jawab:

1. • Dik:

Harga 5 buku dan 2 pensil 12.800,00
 Harga 3 buku dan 4 pensil 14.400,00

• Dit:

Berapa harga sebuah buku tulis, pensil dan penghapus?

• Penyelesaiannya:

$$\begin{array}{r}
 5x + 2y = 12800 \quad | \times 3 \\
 3x + 4y = 14400 \quad | \times 5 \\
 \hline
 15x + 6y = 38400 \\
 15x + 20y = 72000 \quad - \\
 \hline
 x - 14y = -33600 \\
 x = 2500
 \end{array}$$

Figure 1. The answer sheet of Student Grade X

material in their entirety. In addition, according to Pudjiastuti (2020), she explains that this material is often in the form of a story problem because it is closely related to everyday life.

Based on the results of observations with the mathematics teacher at SMA Negeri 21 Palembang, it was found that concepts understanding in students was still low, students still had difficulty in problem solving, of course this had an impact on the problem-solving process in the answers written by students. This difficulty can be seen from the answer sheet for grade X students on **Figure 1**.

Based on the answers above, students immediately answer the problems asked by the teacher without understanding and designing the answers to the problem first, such as identifying the elements being asked up to classify them into a mathematical model first.

Many factors influence the low of concepts understanding and problem solving in mathematics learning. The most influential factor in this school is the learning resources used, namely in students' worksheets. Then in student's worksheet there are no elements that contain ethnomathematics (culture in integrating mathematics) so that concept understanding that students will understand will be more difficult. This is because student worksheet is not designed by the teacher alone.

There are many ways to make mathematics learning comfortable and enjoyable, including showing a friendly attitude in responding to various student mistakes, being conditioned for an open attitude, inviting students to learn while playing, and using various approaches (Marhamah et al, 2011). In this case the writer wants to create a fun mathematics learning using teaching materials. According to Awaludin (2017), which explain that teaching materials are all matter or

materials that will be mastered by students which are arranged systematically. One part of teaching materials that can be fun is student worksheet using an ethnomathematics based CTL approach as an innovation in learning.

To be able to improve mathematics learning outcomes, activities are needed to be able to develop the teaching materials used. Teaching material is an important aspect of the learning process because it includes material that has been compiled systematically. In this case, teachers need creativity up to innovation in delivering SLETV material so that it can be liked by students. One of the teaching materials that can encourage teachers to develop their creativity to be able to activate the learning process is an Ethnomathematics based student worksheet.

Student worksheet is a learning tool in the form of sheets containing student assignments and exercises that have been packaged in such a way by the teacher as one of the supporting teaching materials that can help student success in learning (Fitria et al, 2018). According to (Lestari et al, 2019), there are many student worksheets have been circulating in schools and in all subject material. However, there are still many worksheets that do not emphasize concept discovery and problem solving. The success of students in problem solving in student worksheets can be seen in the preparation of student worksheets. Student worksheets that are monotonous (not interesting) can make students not eager to solve on and find solutions. This is in line with Marisa (2019) arguing that for student worksheets to be more attractive according to the characteristics, students should be able to use a cultural context. SLETV in senior high schools is more associated with real life problems or blends with facts and the surrounding environment. So that student worksheet with a contextual approach is

needed to increase the enthusiasm of students in learning including adding an ethnomathematics context in student worksheet preparation. The ethnomathematics that will be packaged is in the form of South Sumatra culture. With student worksheet associated with an ethnomathematics-based contextual approach, it is expected to solve problems in understanding the material.

This research aims to make it easier for students to understand concepts, understand the material, and introduce the ethnomathematics culture of Palembang, which is packaged in ethnomathematics-based worksheets.

METHOD

The type and development of this research is R&D. R&D is an R&D research method used to produce certain products and test those products (Sugiyono, 2010: 407). Khasanah (2016), one of the development methods is ADDIE, consisting of Analysis, Design, Development, Implementation and Evaluation. It is in line with Tegeh and Kirna (2019), which states that the ADDIE model is used to develop teaching materials. So that researchers use ADDIE Model. ADDIE consists of Analysis, Design, Development, Implementation and Evaluation. The ADDIE stages are: In this **analysis** stage, needs analysis and curriculum analysis are required. The next stage is **design**. It is the design of student worksheet preparation and the design of student worksheet validity instrument. A student worksheet is designed with attention to the structure of student worksheet production, such as title, instructions for use, competence, setting indicators, objectives and selecting materials to be developed according to the ethnomathematics based CTL approach. Then

Development is the completion of

student's worksheet preparation that has been designed, designed by researchers so that the first prototype will be produced. Student worksheet that has become the first prototype will be given to expert review (validator) as well as the one-to-one test. The student worksheet aims to assess and measure the validity level of the student worksheet before being tested in the small group scope.

Implementation. After the student worksheet draft is completed and declared valid (feasible) by an expert review (validator), and a one-to-one trial, the next stage is the researcher implements the student worksheet product limited to small group scope by distributing student response questionnaires to determine student responses about the practicality of student worksheet to be used in learning.

Evaluation. At the implementation stage, it will be obtained response questionnaire that has been given to students. Then the questionnaire is analyzed to determine the quality of the student worksheet that has been developed.

Data collection techniques in this study using instruments. The instruments used in collecting data in this study were divided into 2 types of instruments. Each of the instruments is used to meet the validity criteria, and practicality. The data analysis technique used in this study is quantitative descriptive analysis.

Validation by expert reviews (validators) aims to measure the validity of a student worksheet product before being tested in a small group scope. The results of the analysis are used to revise student worksheet teaching materials made by researchers. To obtain the validity value using the formula:

$$\text{Validity Value} = \frac{\text{total score}}{\text{maximum score}} \cdot 100\%$$

Table 1 Validity Criteria

Validity Value	Validity Criteria
90-100	Very Valid
80-89	Valid
60-79	Enough Valid
0-59	Not Valid

Source: Purwanto (2009)

Then after being validated by a validator, data collection is also obtained through student response questionnaire data. The student response questionnaire aims to measure practicality after the student worksheet product is used. Student worksheet analyzed by

$$\text{Practicality value} = \frac{\text{total of all score}}{\text{maximum score}} \cdot 100\%$$

Table 2 Practicality Criteria

Success score level	Practicality Criteria
86 – 100	Very practical
71 – 85	Practical
56 – 70	Enough practical
41 – 55	Less practical
20-40	Not practical

Modification from Djali and Muldjono (2008).

According to Munthe (in Sittes and Green, 2014), explaining ADDIE Model has a weakness where the ADDIE model is in the implementation stage. It takes a long time and can overemphasize the content, not experience. However, this weakness can be overcome with well-preparation and well-structured components also from the learning experience. The stages that have been designed refine the revision in advance so that it can be structured well.

RESULT AND DISCUSSION

Research Result

The results that have been carried out in development include:

Analysis

Analysis of Needs

From the analysis results, it was found that students would be better if they could know and know more about the culture of Palembang. It is related to the lack of mathematics teaching materials that are themed or based on linking cultural elements in the learning content. Ethnomathematics-based student worksheets using the CTL approach can make innovations to increase student interest in learning and make students more familiar with the culture of Palembang. Therefore, students are expected to understand the material better and solve problems in the student worksheet.

SLETV is an important material. SLETV is one of the subject matters where students still get many difficulties in learning (Siasa et al, 2018). These difficulties can occur due to the lack of student conceptual understanding and the difficulty in problem solving (counting operations) on SLETV material. This difficulty can occur due to student concept understanding in the material so that teaching materials that can make it easier for students to understand the material are needed. One of them is a student worksheet. Student worksheet can make students express ideas, opinions so that it is easier to understand the material. SLETV student worksheet is designed with story problems in the form of understanding in Ethnomathematical culture of Palembang so that students are expected to be able to understand the material.

Analysis of Curriculum

The curriculum is an important analysis

because before developing a student worksheet, the researcher must know what curriculum is used in SMA Negeri 21 Palembang first. In this study, curriculum 2013 was used. Next, the researcher determined the core competencies, basic competencies, indicators to learning objectives according to the material used.

The results of this compatibility are as follows: **Core Competencies**: CC.3: Understand, apply, analyze factual abilities, conceptual, procedural, and metacognitive based on his curiosity about technology science, cultural arts, and humanities with humanity insights, nationality, statehood and civilization related to the causes of phenomena and events, and apply procedural knowledge in the specific field of study according to their talents and interests to solve problems and CC. 4: Process, reason, and present in the concrete realm and the abstract realm with the development of what they have learned, at school independently, act effectively and creatively, and be able to use methods in accordance with scientific principles.

Basic Competencies: 1.3) Arrange system of linear equation in three variables from contextual problems; and 4.3) Solve contextual problems related to the system of linear equation in three variables.

Indicators of Competency Achievements, consist of 1) Identify variable of ethnomathematics contextual problems of Palembang on SLETV subject material; 2) Determine mathematics model of ethnomathematics contextual problems of Palembang on SLETV subject material; and 3) Solve ethnomathematics contextual problems of Palembang by SLETV solving method.

Learning Objective, consist of 1) Students can identify the variable of ethnomathematics contextual problems of Palembang in SLETV subject material; 2) Students can determine the mathematics

model of ethnomathematics contextual problems of Palembang in SLETV subject material; 3) Students can solve ethnomathematics contextual problems of Palembang by SLETV solving method.

Design

After the analysis stage is complete, the next, namely Design Stage, Design Stage is developing the topic, designing student worksheet design, and conducting self-evaluation to produce the first prototype student worksheet. The student worksheet is designed with attention to the structure of the student worksheet, such as title, instructions for use, competencies, supporting information. The student worksheet that will be designed is adjusted to the analysis stage that has been carried out, CTL approach (7 components) and ethnomathematics Based (cultural elements in mathematics). At this stage, in addition to designing student worksheet products, Design is also carried out on the design of student worksheet validity instrument through validation sheets and student response questionnaires sheets.

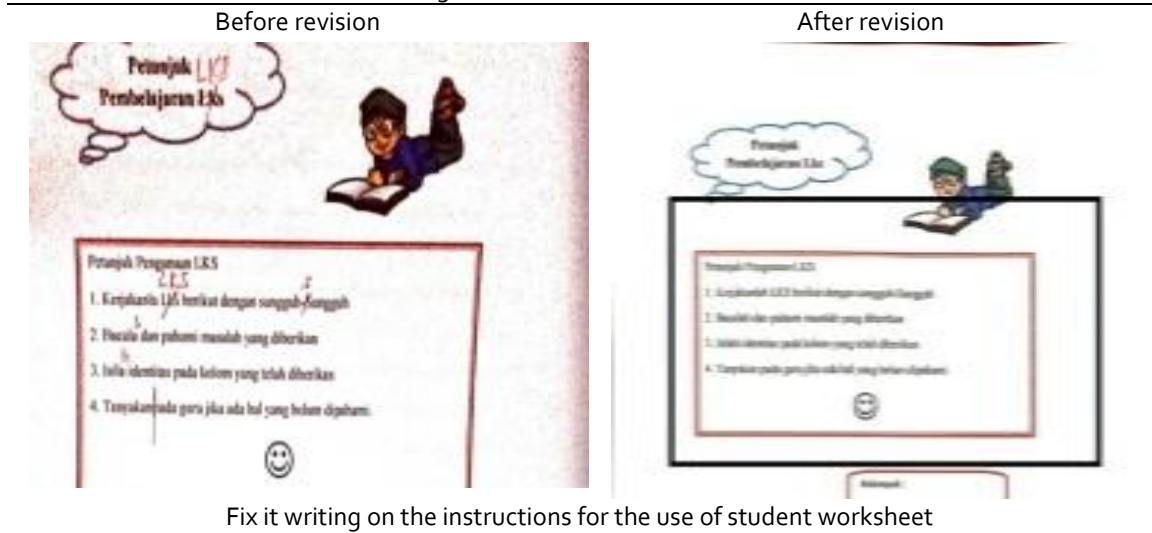
Development

Student worksheets that have been designed are then given to expert reviews (validators), mathematics teachers, and one to one to measure the feasibility (validity). Student worksheet developed by filling out validation questionnaire sheet, student worksheet assessment questionnaire. The **Table 3** is revisions table before and after revision of student worksheet on expert review validators. **Table 4** show the data for the three validators.

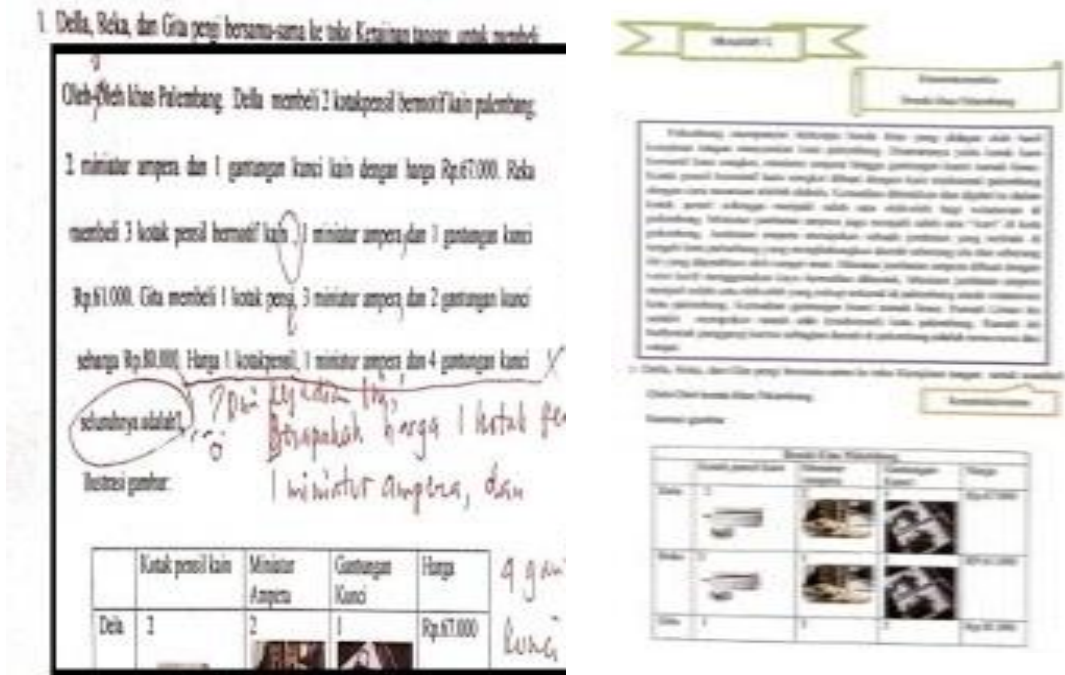
Table 4. The result of three validators

Validator	Percentage	Information
Validator 1	84,61%	Valid
Validator 2	92,30%	Very Valid
Validator 3	86,53%	Valid

Table 3. Before and after Revision



Fix it writing on the instructions for the use of student worksheet



Fix writing, fix layout of construction and modelling. The construct is data/information as a whole. Modelling is the object used as a model.

Based on the results obtained by the three validators, it can be concluded that the first prototype student worksheet product revised is valid and can be tested in a small group scope.

Implementation

After the development stage, the student worksheet product will produce a second

prototype, which means the student worksheet has been fixed and perfected through suggestions/revisions from validators and one to one. After the student worksheet product is declared feasible (valid), the student worksheet product can be implemented, meaning that it can be used as teaching material in the learning process. The implementation stage is carried out by researchers only at the

small group trial stage, not until the field test. A student worksheet is tried out on 9 students while still applying health protocols (masks) because of the Covid-19 pandemic situation. Small group trials are conducted 2 times. At the end of the lesson, students are given a student responses questionnaire sheet to measure practicality of student worksheets that had been used.

Evaluation

The final stage is evaluation of student worksheet products that have been tried out. The researcher gave the student response questionnaire sheet to 9 students and asked the students to fill out the questionnaire sheet. The aim is to measure student responses regarding the practicality of student worksheet products developed. The researcher analyzes the results of the student response questionnaire sheet, and the data obtained can be seen in:

$$\frac{\text{students total score}}{\text{the total score}} \times 100\% = \frac{422}{504} = 83,73\%$$

The number of 83.73% shows that the student worksheet product is "Practical" used.

Discussion

Based on the results of research conducted by researchers, it is given that student worksheet using the Ethnomathematics-based CTL approach on SLETV subject material developed with ADDIE model (Analysis, Design, Development, Implementation, and Evaluation) is declared valid and practical.

According to Fitria et al (2019), CTL is a suitable approach if applied in learning. CTL is also a learning concept that links material with real life conditions. Student worksheet involves the seven

components of constructivism learning, question, inquiry, learning and community, modelling, reflection, and authentic assessment. Students will learn the lesson meaningfully because implementing CTL can emphasize full student involvement in finding the material being studied and connecting it with real life to encourage students to apply it in their lives.

From previous analysis results, SLETV is one of the materials that can be linked to the CTL concept because SLETV is material that is indeed related to factual situations, often using symbols to represent these factual situations. Then another factor is that there are still some students who have not been able to change the problem into a mathematical model in SLETV. Therefore, SLETV becomes one of the suitable materials that can be developed.

Based on the results of the study conducted by the researcher, it is obtained that student worksheets using Ethnomathematics-based CTL approach on the SLETV subject material developed with ADDIE model (Analysis, Design, Development, Implementation, and Evaluation) are declared valid and practical. The student worksheet draft that the researcher has made is called the first prototype, and then the first prototype is carried out individual trials (one to one) simultaneously with assessment by 3 experts (validators) to obtain comments up to suggestions followed by revisions.

Based on the results of the study, it is obtained that the average evaluation of validator 1 on student worksheet using ethnomathematics based CTL approach is 84.61% in 80-89% intervals which means valid. Furthermore, it is obtained that the assessment of validator 2 on student worksheet product is 92.30% with the interval category 90-100%, which means very valid. Then student worksheet product assessment on validator 3 shows an

average value of 86.53% with an interval of 80-89%, which means valid. It is in line with research conducted by Prabawati et al (2019), which explains that student worksheets that have been categorized as valid and very practical can be used as an alternative to support mathematical activities. It means the student worksheet is valid or feasible to be tested.

Then validator assessment results of student worksheet products using the Ethnomathematics-based CTL approach based on the aspects of content, construct and language are valid and can be used until they are tested in small groups. Because researchers only limit it to the small group stage, not up to the field trial stage.

After the student worksheet is declared valid by the validator and can be used in learning grade X SHS. Then the second prototype is tested in a small group with a total of 9 students and divided into 3 groups.

In the first meeting, some students are still confused in determining variables and have not written what they obtained, asked, and answered. Therefore, researchers needed to guide students, interact, and communicate to see the difficulties, difficulties experienced in the learning process for solving student worksheet. So that students began to dare to ask the teacher in conveying their ideas.

In the second meeting on November 27, 2020, students are seen to resolve difficulties by writing what they obtained, asked, mathematical models, and solutions by discussing with their groups. Then, at the end of these two meetings, the researcher distributed the responses questionnaire sheets to 9 students to be filled in to find out student opinions on student worksheet using ethnomathematics-based CTL approach that was developed.

Based on the data that has been

processed from the results of the student practicality questionnaire, the value is 83.73%. It means that the results are in the Practical category. In line with the theory stated by Disnawati (2019), it is stated that student worksheet is stated to be practical means that it can increase student understanding ability in concepts by using teaching materials. In line with that, a study by Fernandez et al (2020) stated that the use of teaching materials could increase it is expected to increase student interest in learning and increase student activity. Therefore, the researcher's practicality value is 83.73%, which illustrates that students' worksheets can be used and understood by students in the learning process of grade X SHS on SLETV material.

CLOSING

Conclusion

Based on the results of the study and discussion, it can be concluded that the student worksheet products developed in this study are said to be valid and practical. The student worksheet is categorized as valid. It can be seen from the results of a study on expert reviews (validators) and subject material teachers up to one-to-one trial through several assessment aspects, such as content, construct, and language. Practical can be seen from the trial study results in small group scope through student response questionnaire sheets.

Suggestion

Based on the results of the study and conclusions above, the researcher can suggest the following: (1) As a reference material for educators to keep working in creating teaching material products in the form of student worksheet or other teaching material products with new methods and strategies to increase student interest

in learning mathematics; (2) Developing student worksheet on SLETV material with ethnomathematics based CTL approach to be used by teachers sustainably with different materials; and (3) For other researchers in order to develop student worksheet with different materials and approaches.

REFERENCES

- Abi, A. M. (2017). Integrasi Etnomatematika Dalam Kurikulum Matematika Sekolah. *JPMI (Jurnal Pendidikan Matematika Indonesia)*, 1(1), 1-6.
- Apriani, Buyung, & Relawati. (2017). Pengembangan Lembar Kerja Siswa (LKS) Berbasis Contextual Teaching and Learning (CTL) Pada Materi Faktorisasi Suku Aljabar Kelas VIII SMP Negeri 9 Muaro Jambi. *PHI: Jurnal Pendidikan Matematika*, 1(1), 12-25.
- Fitria, Buyung, & Azizah. (2018). Pengembangan Lembar Kerja Siswa (LKS) Berbasis Contextual Teaching and Learning Materi Sistem Persamaan Linier Tiga Variabel Kelas X MIA SMA Negeri 9 Kota Jambi. *Jurnal Pendidikan Matematika*. 2(1), 7-13.
- Khasanah, T., & Titin, S. (2016). Pengembangan Lembar Kerja Siswa (LKS) Menggunakan Metode ADDIE Pada Materi Gerak Lurus Di MAN Surabaya. *Jurnal Inovasi Pendidikan Fisika*, 5(3), 45-48.
- Kurniawati, & Tri, H. (2019). *Etnomatematika Konsep dan Eksistensinya*. Jakarta: CV Pena Persada.
- Lestari, D; Darmawijaya, & Aisyah, N. (2018). Pengembangan LKS Berbasis Teori Apos Materi Bangun Ruang Sisi Datar Konteks Rumah Adat Banyuwasin. *Kreano, Jurnal Matematika Kreatif-Inovatif*, 9(1), 1-9.
- Lestari, K., & Yudhanegara, M. (2017). *Penelitian Pendidikan Matematika*. Bandung: PT Refika Adhitama.
- Marhamah, Zulkardi, & Aisyah, N. (2011). Pengembangan Materi Ajar Pecahan Dengan Pendekatan PMRI di SD Negeri 121 Palembang. *Jurnal Pendidikan Matematika*. 5(2), 172-184.
- Muhlisarini, & Hamzah, A. (2014). *Perencanaan dan Strategi Pembelajaran Matematika*. Jakarta: PT. Raja Grafindo Indonesia.
- Munthe, P. A., & Soesilo, A. (2020). Pengembangan Buku Teks Matematika Kelas 8 Dengan Model ADDIE. *Jurnal Pendidikan dan Kebudayaan*. 10(3), 231-243.
- Nur, F., & Purwasi, A. (2019). Pengembangan Lembar Kerja Siswa Berbasis Pendekatan Open Ended Untuk Melatih Kemampuan Pemecahan Masalah Matematis Siswa SMP. *Kreano, Jurnal Matematika Kreatif-Inovatif*, 10(1), 18-26.
- Prabawati, R., Yanto, Y., & Mandasari, N. (2019). Pengembangan LKS Berbasis PMRI Menggunakan Konteks Etnomatematika pada Materi SPLDV. *Jurnal Pendidikan Matematika: Judika Education*, 2(2), 73-79.
- Prasetya, Khamdan, & Aditya. (2018). LKS Ber cerita Bergambar Berbasis Etnomatematika Materi SPLTV Sebagai Inovasi Bahan Ajar Matematika. *Prosiding Seminar Nasional Matematika dan Pendidikan Matematika*, 350-356.
- Prastowo, A. (2014). *Pengembangan Bahan Ajar Tematik*. Jakarta: Kencana.
- Pujiastuti, H., & Azzahra, R. H. (2020). Analisis Kemampuan Pemecahan Masalah Siswa Pada Materi Sistem Persamaan Linier Tiga Variabel. *Transformasi: Jurnal Pendidikan Matematika Dan Matematika*, 4(1), 153-162.
- Purwanto. (2009). *Prinsip-Prinsip Teknik Evaluasi Pengajaran*. Bandung: Remaja Rosdakarya.
- Putrianasari, D.; Wasitohadi. (2015). Pengaruh Penerapan Pendekatan Contextual Teaching Learning (CTL) Terhadap Hasil Belajar Matematika Ditinjau Dari Motivasi Belajar Siswa Kelas 5 SD Negeri Cukil-01 Kecamatan Tengaran Kabupaten Semarang. *Scholaria*, 5(1), 55-77.
- Retta, A. M. (2016). Deskripsi Hasil Belajar Matematika Dengan Menggunakan Pendekatan Matematika Realistik Indonesia (PMRI) ditinjau Dari Gender. *Prosiding Revolusi Mental Mewujudkan Tenaga Pendidikan Yang Profesional Dalam Menyiakan Generasi Emas Di Indonesia*, 393-399.
- Rewatus, A., Leton, S. I., Fernandez, A. J., & Suciati, M. (2020). Pengembangan Lembar Kerja Peserta Didik Berbasis Etnomatematika Pada Materi Segitiga dan Segiempat. *Jurnal Cendekia: Jurnal Pendidikan Matematika*, 4(2), 645-656.
- Sanjaya, W. (2016). *Strategi Pembelajaran berorientasi Standar Proses Pendidikan*. Jakarta: Prenada Media Group.
- Setiana, D. S., & Ayuningtyas, D. A. (2018). Pengembangan Lembar Kerja Siswa (LKS) Matematika Berbasis Etnomatematika Kraton Yogyakarta. *Jurnal Science Tech*, 67-74.
- Siasa, A.S; Salam, M.; and Suhar. (2018). Analisis Kesulitan Belajar Matematika Pada Materi Sistem Persamaan Linier Tiga Variabel Kelas X MA Negeri 10 Kendari. *JPPM, Jurnal Penelitian Pendidikan Matematika*, 6(1), 1-14.

- Sugiyono. (2010). *Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif dan R&D*. Bandung: Alfabeta.
- Sumartini, S. T. (2016). Peningkatan Kemampuan Pemecahan Masalah Matematis Siswa Melalui Pembelajaran Berbasis Masalah. *Mosharafa: Jurnal Pendidikan Matematika*, 5(2), 148-158.
- Sunarto. (2013). *Pengantar Statistika untuk Penelitian Pendidikan, Sosial, Ekonomis, Komunikasi dan Bisnis*. Bandung: Alfabeta.
- Tegeh, I.M. & Kirna, I.M. (2019). Pengembangan Bahan Ajar Metode Penelitian Pendidikan Dengan Model ADDIE. *Jurnal Pendidikan Kimia*. 11(1). 12-26.
- Ubaidilah, F., & Saalamah, U. (2020). Penerapan Metode Contextual Teaching And Learning Untuk Meningkatkan Pemahaman Siswa Pada Pemvelajaran Tematik Pokok Bahasan Siklus Air. *INCARE*. 1(3), 210-218.
- Wahyuni, A.; Tias, A.A.W.; & Sani, B. (2013, November). Peran etnomatematika dalam membangun karakter bangsa. In Makalah Seminar Nasional Matematika dan Pendidikan Matematika, Prosiding, Jurusan Pendidikan Matematika FMIPA UNY, Yogyakarta: UNY. (p. 112-118).