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DEVELOPMENT OF CONTEXTUAL STUDENT WORKSHEET ON SYSTEM OF LINEAR EQUATION INTEGRATED WITH QUR'ANIC VALUES USING THE ADDIE MODEL FOR GRADE VIII STUDENTS

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Abstrak

Penelitian ini bertujuan untuk mengembangkan lembar kerja kontekstual yang terintegrasi dengan nilai Qur'an untuk materi sistem persamaan linier dua variabel, mengevaluasi lembar kerja, kesesuaian dengan nilai Qur'an, dan mendeskripsikan persepsi siswa terhadap materi. Model pengembangan yang digunakan adalah ADDIE dengan subjek penelitian siswa kelas VIII MBS Pleret. Instrumen yang digunakan diadaptasi dari penelitian terdahulu dan ditelaah melalui *expert judgement* sebelum digunakan. Validasi ahli materi dan ahli media menunjukkan skor 161 (baik) dan 144.5 (sangat baik). Implementasi di kelas kecil dan kelas besar memperoleh respon peserta didik sebesar 113,5 (baik) dan 121 (sangat baik). Sementara penilaian kesesuaian integrasi nilai Qur'an ke dalam materi mencapai skor 24.5 dan 20.4 yang menunjukkan kategori baik. Siswa memberi persepsi posistif terhadap pemahaman materi yang disajikan secara kontekstual dan terintegrasi nilai Qur'an dengan skor nilai 35.9 dan 36.9 yang kedua berada dalam kategori baik. Temuan penelitian menunjukkan bahwa lembar kerja yang dikembangkan layak digunakan dan berpotensi mendukung pembelajaran matematika melalui aktivitas kontekstual yang terintegrasi nilai Al-Qur'an.

Kata kunci: Lembar Kerja Siswa; Nilai Al-Qur'an; Sistem Persamaan Linier; Kontekstual

Abstract

This study aimed to develop a contextual student worksheet integrated with Qur'anic values in the system of linear equations in two variables. The study evaluated the worksheet's feasibility, the suitability of Qur'anic values, and described students' perceptions of the contextual material. This research used the ADDIE model of research and development. Research instruments were adapted from previous studies and reviewed by experts before use. The research subjects were eighth-grade students at MBS Pleret. The developed worksheet included five activities that integrating Qur'anic values. Expert validation using using Ideal Assessment Criteria found the worksheet feasible. The material expert's average score was 161, in the good category. The media expert's average score was 144.5, in the very good category. Implementation in small classes with 10 students and large classes with 29 students received student responses of 113,5 and 121, categorized as good and very good. Additionally, the assessment of Qur'anic value suitability in the material scored 24.5 and 20.4 indicating a good category. Students responded positively

to the contextual worksheet integrated with Qur'an value, with perceived understanding scores of 35.9 and 36.9, both falling within the good category. These findings, indicates that the developed worksheet is feasible and has the potential to support mathematics learning through contextual activities integrated with Qur'anic values.

Keywords: Student worksheet; Qur'anic Values; System of Linear Equation; Contextual

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INTRODUCTION

Education serves as a means for character building, guiding individuals to live honest and empathetic life. Character education, as Suwartini (2017) notes, helps develop both academic and moral potential, resulting in positive behaviour and thinking, as well as effective role models. Within Indonesia, innovative teaching models that incorporate religious values are increasingly seen as important, especially in Islamic education. For example, integrating the Qur'an into the curriculum, as shown by Haryadi et al. (2024) and Francis et al. (2019), has been found to positively affect students spiritual attitudes, thereby enhancing their character.

One of the core elements of the educational process is learning. According to Schneider (2024) & Faizah (2017) learning is a fundamental concept of education, and the effectiveness of education depends on the quality of learning. This also applies to the mathematics learning process, which supports the education process. According to (Fadlelmula, 2022) mathematics learning has significant support in the education process. Mathematics is not merely an academic subject but also a tool for developing critical thinking, analytical skills, and problem-solving abilities. The purposes of teaching mathematics in schools are to enable students to understand contextual problems, create mathematical model, solve problems, and interpret the solutions obtained (Ambarsari & Hasanah, 2022; Samo et al., 2018). By understanding mathematical concepts, students not only acquire skills useful across various fields but also developed their logical and analytical thinking

abilities (Ginanjar, 2023). Mathematics is important because it plays a crucial role in various aspect (Rismawati, 2016).

However, in reality, students still find it difficult to understand mathematical concepts. Fadzillah & Wibowo (2016) stated that many students merely memorize mathematical concepts without understanding them. This issue is also prevalent at Muhammadiyah Boarding School (MBS) Pleret, as indicated by a student survey at the school, which found that 61% of eighth-grade students are struggling with mathematics. The implementation of innovative learning media could help students address this challenge.

Meanwhile, learning media plays an important role in the learning process. One of its roles is as a medium for conveying messages in the context of the learning process. The presence of learning media helps deliver material more effectively and can make a significant contribution to information delivery to students (Hasan et al., 2021). However, according to Fitri (2023) research, educational media used in schools are often still in simple and unattractive forms due to poor packaging. This is also happening at MBS Pleret, where the educational media used in mathematics lesson are in simple form. Based on interviews with mathematics teachers at MBS Pleret, explained that the educational media currently used are limited to mathematics module books and worksheets containing routine questions without any steps.

A student worksheet is a learning media that facilitates learning, improve achievement, and serves as a guide for the students to provide a good learning experience (Umbaryati, 2021). Based on the results of a questionnaire distributed, 89% of MBS Pleret students require learning media in the form of worksheets to support mathematics learning activities. During mathematics lessons, students in class VIII at MBS Pleret tend to feel sleepy and fail to pay attention to the teacher. MBS Pleret has been using worksheet in teaching, but they remain simple and lack step-by-step guidance for solving problems, making it difficult for students to complete the exercises, especially in Systems of Two Variable Linear Equations (SPLDV) material, where most of the problems are presented in story form. Based

on the survey results, 54% of students experienced difficulties in the SPLDV material. Therefore, SPLDV was selected as the subject matter for developing student worksheets at MBS Pleret because students frequently encountered difficulties with this material.

SPLDV is one of the algebra topics studied in grade VIII junior high school. Unfortunately, many students find mathematics lesson uninteresting and this perception is often attributed to how mathematics has been taught (Ukobizaba et al., 2021). A similar situation occurs at MBS Pleret, where the teaching methods used in grade VIII are ineffective because the learning process remains teacher-centerered. The teacher also explained that commonly used teaching methods remain conventional. Meanwhile SPLDV is an algebra topic in which most problems are presented as stories and occasionally relate to actual situations around students. Based on research by Akkerman & Bakker (2019), students tend to be interested in learning when instructional contexts are connected to their interest and everyday experiences. Additionally, contextual problems that integrate students' personal elements can help connect new knowledge, thereby improving students' ability to apply mathematical processes (Raihani et al., 2025). Supported by the finding of (Naja et al., 2022) research, which states that contextual learning integrating students' real life experiences into the learning process, can improve mathematical abilities and learning outcome, as well as (Luvita Nafisah et al., 2024) research, which can enhance students' understanding mathematical concepts.

MBS Pleret is a pesantren-based school where students' daily activities are closely tied to Qur'anic values. Therefore, Qur'anic value can serve as an authentic learning because they have become an integral part of students' daily lives and learning experiences. Integrating Qur'anic values into mathematics learning provides contexts relevant to students' experiences while supporting character education goals. This argument is supported by Hasibuan (2014)& Johnson (2002), who stated that students' understanding of a concept is more likely to develop when it is connected to contexts familiar to their daily lives. Thus, the use of contextual learning media or worksheet integrated with Qur'anic values is considered

appropriate for support student's learning needs.

Nesa (2019) stated that mathematics is one of the disciplines closely related to Qur'anic values and plays an important role in achieving educational goals. The Qur'an, as the main guideline in Islam, can serve as a source of mathematical inspiration, containing concepts such as functions, logic and another mathematical principles (Kasman et al., 2025; Meldi et al., 2022). Meanwhile, the materials on SPLDV involve mathematical modeling activities that originate from real-life situations. Also, this material presents many mathematical problems in the form of story problem that can be integrated with Qur'anic values. Qur'anic values can be integrated into learning activities so that students not only learn mathematical concepts but also gain learning experiences that promote character development. Like, the value of honesty can be integrated through contexts involving fair buying and selling transactions, while the value of responsibility can be introduced through problems related to social and community life.

However, in Indonesia today, mathematics in Islamic boarding schools serves only to fulfil obligations, and does not integrate Islamic values (Ramdhani et al., 2021). In fact, mathematics has a close relationship with Islamic spirituality and is familiar with the Qur'an (Huda & Mutia, 2017). Therefore there is a need for learning media in the form of a worksheet that incorporates Islamic values. Based on interviews at MBS Pleret, there are no mathematics worksheet that integrate Qur'an values, and a survey using questionnaires revealed that 68% of students need contextual worksheets integrated with Qur'an values.

Based on the discussion of contextual learning, the characteristics of pesantren environments, and the potential to integrate Qur'anic values into SPLDV learning, this study developed a worksheet integrated with Qur'anic values to support students' understanding of mathematical concepts through contextual learning experiences in a pesantren-based school. The conceptual relationship underlying this study is presented in figure 1.

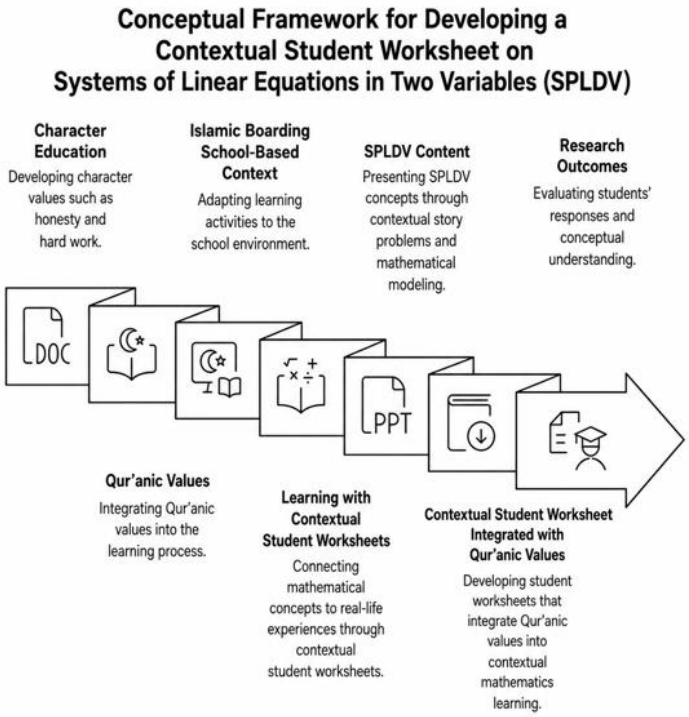


Figure 1. Conceptual Diagram of Research

As illustrated in Figure 1, the framework served as the basis for developing contextual student worksheet integrated with Qur'anic values for the SPLDV materials, taking into account the characteristics of the pesantren-based school.

Previous studies on the development of student worksheets integrated with Qur'anic values have been conducted by (Roy et al., 2024) on integers, and by Najla' Zaul Fadaukas & Widayati Widayati (2025), who developed student worksheets by integrating the values of worship, piety and faith. Darojah et al. (2025) developed worksheets integrated with Islamic values, but using Problem Based Learning model. These studies indicate that integrating Qur'anic values into mathematics learning materials can support the learning process. Nevertheless, previous studies have not specifically developed contextual student worksheets that connect to SPLDV concepts with student's daily life experiences. In addition, no study has been found that positions Qur'anic values derived from students daily live in a pesantren environment as the basis for integrating Qur'anic values into SPLDV learning. Therefore, this study developed a contextual student worksheet on

SPLDV material integrated with Qur'anic values, particularly honesty, hardwork, creativity, environmental care, and social responsibility. These values were embedded in SPLDV word problems closely related to students' experiences at a pesantren-based school. Through this worksheet, students are guided to understand problems, identify variables, formulate mathematical models, solve systems of equations, and interpret the solutions obtained. This study aims to evaluate the feasibility of the developed contextual worksheet, describe student responses to the use of the contextual worksheet integrated with Qur'anic values, and explore students' perceptions regarding their understanding of SPLDV material presented contextually and integrated with Qur'anic values.

METHOD

The method of this study is using Research and Development method (R&D). Sugiyono (2019) states that R&D is the process of developing existing educational products and then testing them. The development model used in this study is the ADDIE development model. The ADDIE model was selected because it provides a structured, systematic and comprehensive approach to instructional development, start from needs analysis, design, development, implementation, and evaluation (Husna et al., 2020; Khalil & Elkhider, 2016). Maydiantoro (2019) stated that the ADDIE model has five stages of development, namely Analysis, Design, Development or Production, Implementation and Evaluation. These stages can be carried out procedurally, using a non-procedural or cyclical instructional design model, or can also start from a specific stage (Hidayat & Nizar, 2021). The following figure is an explanation of stages of the ADDIE model.

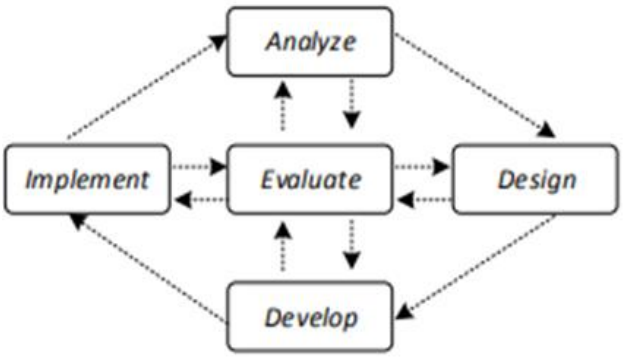


Figure 2. ADDIE Development Stage

Analysis

In ADDIE development research, the first stage is for researcher to analyze the learning media requirements, materials and curriculum to be used as references for developing the worksheet.

Design

Researchers design the worksheet-based learning media, collect references and compile research instrument

Development

Researcher realizes the worksheet product. The steps are as follow: the worksheet is written in accordance with the material determined in the design stage, then validation and assessment process carried out by a material expert and media expert to determine the feasibility of the worksheet.

Implementation

Researcher tested the worksheet on eight-grade students at MBS Pleret. Based on Creswell, J. W., & Creswell (2017) & Sugiyono (2019), the small and large class participants were selected purposively, as this study focused on the development and evaluation of the developed media. Therefore, the small class trial involved 10 students, while the large class trial involved 29 students. This trial was conducted to determine the feasibility of the worksheet. At this stage students were also given questionnaire to determine their response to the worksheet product.

Evaluation

The Evaluation stage involves evaluating the worksheet to determine whether the development product is suitable for use. This evaluation is based on the results of the validation by material experts, media expert and the result of the student questionnaires.

The research instruments used in this study were questionnaires for material and media expert, as well as student responses. The indicators of these questionnaires were adapted from various research instrument that had been used and validated in previous studies, considering the characteristics of the contextual worksheet, which was integrated with Qur'anic values. The material expert instrument included indicators of content feasibility, presentation, language, contextuality, and the integration of Qur'anic values (Mastuti et al., 2021; Ruslan & Sulastry, 2022). The media expert instrument covered graphic quality and language feasibility (Novia et al., 2021), The student response instrument consisted of presentation, language, graphic design, contextuality, and the integration of Quranic values (Halistin et al., 2023; Yana et al., 2023).

The three research instruments were validated by a Mathematics Education lecturer, who provided suggestions and recommendations for improving the instruments. Then, all instruments were revised based on the recommendation by the validator before being used in the study. According to Bruce et al. (2008) & Prendes-Espinosa et al. (2016), expert judgment is a procedure used to obtain evidence of validity by involving experts in reviewing and providing feedback on research instruments prior to their implementation. The validation process resulted in several recommendations for improvement, including revisions to the wording of questionnaire items, the removal of certain indicators, and adjustments to the instrument presentation aspects. Revisions were subsequently made in accordance with the validator's recommendations before the instruments used in the study. Therefore, the instruments were considered suitable for use in the research after undergoing content validation through expert judgment (Bruce et al., 2008; Prendes-Espinosa et al., 2016).

The subjects of this study were eighth-grade students at MBS Pleret. In worksheet trials, students became respondents in small class trials and large class trials, and then they responded to the developed worksheet. The data analysis techniques used were to analyze the questionnaire items, including questionnaire for material experts, media experts and student questionnaires. The data obtained based on the result of the questionnaire form the experts and the student responses were in the form of qualitative scores, which were then converted into quantitative scores using a Likert scale. The following is the analysis of the likert scale scores:

Table 1. Likert Scale Scoring Analysis

Description	Score
Very Good	5
Good	4
Fair	3
Poor	2
Very Poor	1

The collected data was then calculated to find the average value. The formula for calculating the average according to Kasiati et al. (2022) is as follows:

$$\bar{X} = \frac{\sum_{i=0}^{n} xi}{n}$$

Description:

$\bar{X}$: average value

xi: score of indicator statement i, where i :1, 2, …, n

n: Number of assessments

After the score of $\bar{X}$ was obtained from the material and media experts, and also student responses, the scores were interpreted using the ideal assessment criteria proposed by Habsy et al. (2022) As presented in Table 2.,

Table 2. Ideal Assessment Criteria

Number	Score	Criteria
1	$\bar{X} > \bar{X}_i + 1{,}80\ SB_i$	Very Good
2	$\bar{X}_i + 0{,}60\ SB_i < \bar{X} \leq \bar{X}_i + 1{,}80\ SB_i$	Good
3	$\bar{X}_i - 0{,}60\ SB_i < \bar{X} \leq \bar{X}_i + 0{,}60\ SB_i$	Fair
4	$\bar{X}_i - 1{,}80\ SB_i < \bar{X} \leq \bar{X}_i - 0{,}60\ SB_i$	Poor

5	$\bar{X} < \bar{X}_i - 1{,}80\ SB_i$	Very Poor

Description:

$\bar{X}_i$: ideal average

$\bar{X}_i$ calculated using the following formula :

$\bar{X}_i$: $\frac{1}{2}\times$ (ideal maximum score + ideal minimum score)

SBi: Ideal standard deviation

$SBi = \frac{1}{6}\times$: (Ideal maximum score − deal minimum score)

Ideal maximum score = number of criteria items × highest score

Ideal minimum score = number of criteria items × lowest score

$\bar{X}$: Feasibility Score

The feasibility of the contextual worksheet was determined based on the category obtained from the conversion of the score $\bar{X}$ using the Ideal Assessment Criteria presented in Table 2. The developed contextual worksheet was considered feasible if the evaluation results from the materials and media experts, and also students' responses reached at least the 'Good' category.

RESULT AND DISCUSSION

The result of this research will be explained in each stage of the ADDIE development model.

1. Analysis

   At this stage, researchers conducted an analysis to obtain an overview of the student worksheets to be developed. Several analyses conducted by researchers at MBS Pleret included:

   a. Analysis of learning media needs

      The researcher conducted direct interviews with mathematics teachers of class VIII at MBS Pleret and distributed questionnaires to students of class VIII at MBS Pleret. The data obtained from the interviews and questionnaires revealed that the learning media used by teachers in class were only worksheets containing practice questions without any steps for solving them. Based on the questionnaire results, 89% of students needed

a contextual worksheet; the learning model used was still conventional, and there were no worksheets that integrated Qur'anic values at MBS Pleret, while from the results of the pre-research questionnaire, 68% of students needed a contextual worksheet that integrated Al-Qur'an values.

b. Material analysis

The selection of material was carried out after the researcher conducted interviews with mathematics teachers at MBS Pleret. Based on these interviews, the teachers said that students still had difficulty understanding story-based questions, while most of the SPLDV material contained story-based questions. In addition, based on the results of the questionnaire completed by eighth-grade students at SMP MBS Pleret, 54% of students experienced difficulties with SPLDV and 46% experienced difficulties with other mathematics material.

c. Curriculum Analysis

The researcher determines the mathematics curriculum used at the school. The analysis included an analysis of the core material, learning outcomes, learning objectives that must be achieved by students, and the Pancasila Student Profile. The purpose of this stage was to ensure that the worksheet was developed in accordance with the needs of students at MBS Pleret.

2. Design

In the design stage, researcher conducted four activities, including:

a. Collecting sources and references consisting of several school books SPLDV material and books on the study of Qur'anic values related to SPLDV material.

b. Creating an outline of the worksheet in the form of initial concepts of the activities contained in the worksheet. The worksheet contains 5 activities, namely activity 1 containing material on recognizing the general form of SPLDV, activity 2 containing material on solving two-variable linear equation systems using the elimination method, activity 3

contains material on solving two-variable linear equation systems using the substitution method, activity 4 contains material on solving two-variable linear equation systems using the elimination-substitution method, and activity 5 contains material on the application of two-variable linear equation systems.

c. Designing the content of the worksheet, which includes a front cover, inside cover, worksheet identity, foreword, table of contents, learning objectives, instructions for using the worksheet, concept map, content section, evaluation, bibliography, and author's biography.

d. Developing assessment instruments in the form of assessment tools for material experts, media, and student responses. These assessment instruments are in the form of questionnaires consisting of several aspects.

3. Development

At this stage, there are two activities carried out, including:

a. Writing the student worksheet

Researchers develop the student worksheet using software such as Canva, Microsoft Word 2021, and Microsoft Bing. In writing the student worksheet, the writer uses Indonesian in accordance with the General Guidelines for Indonesian Spelling.

b. Validation and Assesments

These stages must be carried out to obtain consideration from material experts and media experts regarding the validity of the student worksheet to be used for research. In the validation process, material experts and media experts will check the developed student worksheet for deficiencies or errors. Material experts evaluate the student worksheet in terms of content feasibility, presentation, language, contextuality, and the integration of Qur'anic values incorporated into the student worksheet. Meanwhile, media experts assess the quality of the graphical design and

language appropriateness. The following table presents the results of the material experts' validation.

Table 3. Score Calculation by Material Experts

Number	Material Expert	Position	Score
1	First Validator	Mathematic Eduation Lecturer	160
2	Second Validator	Mathematics teacher	162

Based on table 3, the first material expert validator, who is a lecturer in mathematics education, awarded a score of 160. Meanwhile, the second validator, a mathematics teacher at MBS Pleret, awarded a score of 162. The interpretation of these scores was determined using the ideal assessment criteria for material experts presented in table 4.

Table 4. Ideal Assessment Category Criteria for Material Experts

Score Range of Material Experts	Criteria
$\bar{X} > 168$	Very Good
$136 < \bar{X} \leq 168$	Good
$104 < \bar{X} \leq 136$	Fair
$72 < \bar{X} \leq 104$	Poor
$\bar{X} \leq 72$	Very Poor

Based on the criteria shown in table 4, the scores obtained from both validators fall within range of $136 < \bar{X} \leq 168$, which corresponds to the "good" category. Therefore, the developed worksheet was categorized as good according both material expert validation.

Subsequently, the results of the validation conducted by media experts on the developed worksheet are shown in the table 5. This media validation includes the quality of graphics on the worksheet and the suitability of the language used on the worksheets.

Table 5. Score Calculation by Media Experts

Number	Media Expert	Position	Score
1	First Validator	Mathematics Education Lecturer	150
2	Second Validator	Mathematics teacher	139

From table 5, the first validator who is a mathematics education lecturer focused on media, obtained a score of 150. The assessment results from the second validator, who is a mathematics teacher, scored 139. The interpretation of these scores was conducted using the Ideal Assessment Criteria presented in table 6.

Table 6. Ideal Assessment Category Criteria for Material Experts

Score Range of Media Experts	Criteria
$\bar{X} > 142.8$	Very Good
$115.6 < \bar{X} \leq 142.8$	Good
$88.4 < \bar{X} \leq 115.6$	Fair
$61.2 < \bar{X} \leq 88.4$	Poor
$\bar{X} \leq 61.2$	Very Poor

Based on the Ideal Assessment Criteria shown in table 6, the score of 150 by the first validator falls within the range of $\bar{X} > 142.8$ and categorized as "very good". Meanwhile, the second validator give score 139 which falls within the range of $115.6 < \bar{X} \leq 142.8$ and is categorized as good. Since both validators assessed the developed worksheet in categories equal to or higher than good, the worksheet met the minimum feasibility criterion in terms of media aspects.

4. Implementation

At this stage, the researcher conducted trials in small classes and large classes. These small class trials were attended by 10 students from class VIII of MBS Pleret. The purpose of the small class trials was to determine whether there were still shortcomings in the development of the LKPD before conducting large class trials. In these small class trials, there were no revisions, so they could be continued in the large class trials. The large-scale trial involved 29 students from Grade VIII of MBS Pleret. In this large-scale trial, no revisions were made because the LKPD was deemed satisfactory in

terms of content and media. The following table of 7. presents the results of the students' responses from both the small and large class trials.

Table 7. Result of the Score Calculation of The Students Response for Small and Large Class

Respondent	Small Class	Large Class
Average of each class	113.5	121

Based on table 7, the average score from the student response questionnaire in the small class trial was 113.5, while the average score in the large-scale trial was 121. To determine the category of each score, the results were interpreted using table 8. below.

Table 8. Ideal Assessment Category Criteria for Student Response

Score Range of Student Response	Criteria
$\bar{X} > 117.6$	Very Good
$95.2 < \bar{X} \leq 117.6$	Good
$72.8 < \bar{X} \leq 95.2$	Fair
$50.4 < \bar{X} \leq 72.8$	Poor
$\bar{X} \leq 50.4$	Very Poor

Based on the Ideal Assessment Criteria shown in table 8, the score of 113.5 obtained from the small-scale trials falls within the range of $95.2 < \bar{X} \leq 117.6$ and its categorized as good. Meanwhile, the score of 121 which from the large-scale trials falls within the range of $\bar{X} > 117.6$ and is categorized as very good. These results indicate that student responded positively to the developed worksheet and that the worksheet met the minimum feasibility criterion from the students' perspective.

Overall, the developed worksheet met the feasibility criteria based on the assessments of material experts, media experts and student responses. Therefore, the contextual worksheet integrated with Qur'anic values is considered feasible for use in learning SPLDV.

5. Evaluation

Evaluation is the process of assessing the quality of student worksheet products to determine whether they can be used in the learning process. The evaluation conducted is an evaluation of the results of validation by material experts, media experts, and student response questionnaires from the results

of trials of the student worksheet. The assessment will be used as a reference to determine the feasibility of the student worksheet developed.

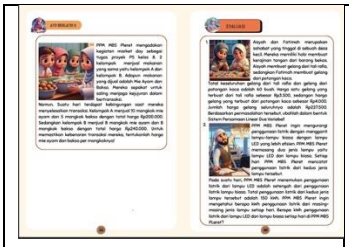
In the developed student-worksheet the content consists of activities 1 to 5. In activity 1, students learn about SPLDV, in activity 2 students learn about solving SPLDV using the elimination method, in activity 3 students learn about solving SPLDV using the substitution method, in activity 4, students learn about solving SPLDV using the elimination-substitution method, and in activity 5, students learn about the application of SPLDV. In each activity, problems are presented in the form of contextual stories and the steps to solve them. At the end of each activity, students are asked to reflect on what they have learned. Additionally, students are asked to briefly explain the exemplary qualities that can be drawn from the story and the presented Qur'anic verse to reinforce the Qur'anic values highlighted. The Qur'anic values emphasized in Activity 1 are creativity, in Activity 2 are hard work, in Activity 3 are environmental concern, in Activity 4 are social responsibility, and in Activity 5 are honesty. As we can see in this following figure 3.

Activity 1	Activity 2
Activity 3	Activity 4
Activity 5	

Figure 3. Initial Page of activity 1 to activity 5

From figure 3, can be seen that activity 1 contains elements of creativity. Islam appreciation of creativity is reflected in many verses of the Qur'an that encourage humans to think, reflect, and make thinking an important part of their lives, especially in relation to developing their inner potential. The value of creativity was integrated because students were required to identify patterns and formulate mathematical models from contextual situations. This process encourages students to generate ideas and represent real-world problems in symbolic forms. Then activity 2 contains hard work, which can be applied when pursuing knowledge, seeking sustenance, and carrying out tasks in accordance with one's profession. The value of hard work was emphasized because solving a SPLDV using the elimination method requires persistence, accuracy and repeated procedural steps. In activity 3, environmental care was integrated through contextual problems related to environmental issues, allowing students to connect mathematical concepts with environmental awareness. Meanwhile in activity 4 about social responsibility, and these characteristics are important to instill and nurture in students through schools, the home environment, and the wider community. The value was emphasized because student worked collaboratively to solve problems and evaluate solution strategies, fostering responsibility toward group learning outcomes. The last, activity, honesty, was integrated because students were required to interpret solutions and present conclusions based on actual calculation results, thereby encouraging of Qur'anic values, which were pedagogically aligned with the learning objectives and learning activities in each section of the worksheet.

While the final part of the student worksheet includes an evaluation, answer keys for the practice questions and evaluation, and a list of references, as we can see in the following figure 4.



Evaluation

Answer key

Bibliography

Figure 4. evaluation, Answer Key and Bibliography

Figure 4 shows the final section of the student worksheet, which consists of an evaluation, answer key, and bibliography. The evaluation was designed to provide opportunities for students to practice and reflect on the material learned, while the answer key helps students and teachers review the correctness of solutions. The bibliography lists the reference sources that strengthen the academic validity of the student worksheet.

The material on the SPLDV in this study is presented by integrating the values of the Qur'an. This integration is done by aligning the concepts of the material and the values being conveyed. To determine the suitability of integrating Qur'anic values into the material, assessments were conducted by experts and based on the students' responses. The result of the assessment of the suitability of integrating Qur'anic value into the material is presented in the following table 9

Table 9. Result of Suitability of Quran Values Integration in the Developed Worksheet

Assessment Source	Score
Validity from expert	24.5
Student responses	20.43

From table 9, the mean score obtained from expert validation was 24.5, and from student responses was 20.43. The interpretation of these scores was determined using table 10.

Table 10. Ideal Assessment Category Criteria for Suitability Quran Values

Score Suitability of Quran Values Integration From Validator	Score Suitability of Quran Values Integration From Student Responses	Criteria
$\bar{X} > 25.2$	$\bar{X} > 20.94$	Very Good
$20.4 < \bar{X} \leq 25.2$	$16.98 < \bar{X} \leq 20.94$	Good
$15.6 < \bar{X} \leq 20.4$	$13.02 < \bar{X} \leq 16.98$	Fair
$10.8 < \bar{X} \leq 15.6$	$9.06 < \bar{X} \leq 13.02$	Poor
$\bar{X} \leq 10.8$	$\bar{X} \leq 9.06$	Very Poor

Based on table 10, the score of 24.5 from expert validation falls within the range of $20.4 < \bar{X} \leq 25.2$ and categorized as good. Similarly, score of 20.43 obtained from student response falls within the range $16.98 < \bar{X} \leq 20.94$ with good category. These findings indicate that the integration of Qur'anic values into the developed worksheet was considered appropriate and relevant by both expert validators and students.

Additionally, student asked to provide responses regarding their perception of the contextual SPLDV material presented in the worksheet. This assessment was intended to describe students' perceived understanding of the material. The results are presented in table 11.

Table 11. Student Perceptions of Understanding of System Linear Equation Material

Student Perception	Score
Small Class	35.9
Large Class	36.9

Table 11. showed that students in both small and large class obtained scores of 35.9 and 36.9 respectively. The interpretation of these scores was determined using the criteria presented in the table 12.

Table 12. Ideal Assessment Category Criteria for Student Perceptions of Understanding

Score Range of Student Perception	Criteria
$\bar{X} > 37.8$	Very Good
$30.6 < \bar{X} \leq 37.8$	Good
$23.4 < \bar{X} \leq 30.6$	Fair
$16.2 < \bar{X} \leq 23.4$	Poor
$\bar{X} \leq 16.2$	Very Poor

Based on assessment criteria, both scores were categorized as good. These findings indicate positive student perceptions regarding their understanding of contextual SPLDV material integrated with Qur'anic values. The use of contextual problems may support students in relating mathematical concepts to real-life situations, which potentially contributes to their perceived understanding of the material. According to Agustinsa et al. (2023), worksheets designed with contextual principles improve student problem-solving abilities, understanding (Fitriani et al., 2023), and learning outcomes (Lituanas & Dela Cruz, 2025).

The Development of this worksheet was motivated by the absence of mathematics lesson worksheets integrated into Al-Qur'an. Meanwhile, MBS schools are boarding schools, so it is necessary to demonstrate that the mathematics learning process can also be related to Qur'anic values in accordance with the school's existing curriculum. According to Mutijah (2018); Winarso & Wahid (2020), a learning process that contains or includes the values of Qur'an may support student engagement and academic learning outcomes. In the process of developing this worksheet, the first step was an analysis conducted through questionnaires and interviews with the students and teachers. The results showed that 89% of students stated that they needed a worksheet, and 68% of students needed a worksheet integrated to Qur'anic values. From these results, it is clear that the majority of students stated the need for worksheets as a supporting medium to help them identify and understand the relationship between mathematics and Qur'an. According to Kamilah & Suprihatiningrum, (2024) students enjoy learning related to religious and ethical values because such learning can create varied and

enjoyable lessons. The previous research said that students gave positive response (Roy et al., 2024) and improved learning outcomes (Chandra et al., 2022) when using worksheets integrated with Quran values.

In addition, the material focused on developing the worksheet of the SPLDV. Based on questionnaire given to students, 54% of students reported difficulty understanding the materials. This was traced back to the reasons students found the material difficulty thru interview with the teachers, who stated that the students still made mistakes when transforming contextual problems into equation models. Students make mistakes in the procedural steps for solving a SPLDV (Samnur Saputra et al., 2024), especially in the final step (Afriadi, 2019).

At the design stage, the researcher carried out four main activities; there area: collecting references (Winarso & Wahid, 2020), outlining (Fodouop Kouam, 2024; Trianto, 2017) designing worksheet content (Sun, 2020), and preparing assessment instrument (Dick et al., 2015; Sun, 2020). The material SPLDV was then organized into five learning activities, from basic concepts to application, resulting in a step-by-step design. This pattern helps students learn progressively, meaning they understand the concept first, then learn the solution methods such as elimination, substitution and combination of elimination and substitution, then finally work on application problems. The complete worksheet structure, starting from the cover to bibliography and author biographies (Siahaan & Siahaan, 2022), indicates that the product is designed as a complete teaching material, not just an exercise sheet. Additionally, the development of assessment instrument for material experts, media experts and student responses ensures data-driven evaluation and quality control of the worksheet's feasibility.

At the worksheet development stage, it was created using Canva and Microsoft word, supported by reference searches. The use of Indonesian language according to EYD rules is a primary concern because readability is crucial for the effectiveness of worksheet for junior high school students (Ika Febriana et al., 2024; Sudiati, 2023). Then, the use of digital devices strengthens the graphics and layout aspects, making the worksheet more engaging compared to previous school

learning materials, which tended to be monotonous. And the graphical aspect can make learning interactive and immersive (Sari et al., 2024; Tiara et al., 2023)

The result of the material expert validation showed an average score of 161 with a good category, indicating that the material is relevant, systematic, and aligned with learning objectives, and was assessed from academic and practical perspectives through the involvement of mathematics education lecturers and school teachers. Media expert validation received a very good category with an average 144,5 which indicates that the appearances, design and readability of the student worksheet are very suitable and have the potential to increase student interest in understanding mathematics (Jamal & Dwidarti, 2025; Setyaningrum & Waryanto, 2018).

The trials were conducted in small classes with up to 10 students and large classes with 29 students. In the research and development procedure, small classes serve to detect initial shortcomings before wider implementation (Juhana et al., 2024). The results of the small class trial showed a good response with an average of 113, 5, followed by the larges class trial which yielded a very good response with an average of 121. The improvement in response from good to very good indicates that the students responded positively to the developed worksheet (Baharuddin et al., 2024). Furthermore, the worksheet may support students in understanding mathematical concepts through structured learning activities (Anggraini & Susilowati, 2022) and help them follow learning steps in a more structured way (Karuniawati & Wulantina, 2025; Roy et al., 2024).

The evaluation stage emphasizes assessing product quality based on expert validation and student responses, while also illustrating the worksheet content integrated to Qur'anic value. The worksheet contains five learning activities arranged in a step-by step manner and relevant to the characteristic of linear system. This can strengthen the essence of the material by facilitating students' ability to transform contextual problems, especially daily routine in mathematical models (Nurhalizah et al., 2023; Wijayanti & Loviana, 2025). Integrating the values of the Qur'an into every activity becomes the unique strength of the product, namely

creativity, hard work, environmental awareness, social responsibility, and honesty. This value mapping shows that the worksheet is not only oriented toward cognitive achievement, but also supports character education through reflection at the end of activity and encourages linking the examples form the stories and verses presented. This aligns with Hasanah S. et al. (2025) & Pujilestari et al. (2025), who stated that using Islamic narratives can improve understanding and encourage perseverance in solved some problems.

The research that has been conducted certainly has several limitations, including the limited variation of schools used in both small and large classes, which is still limited to the characteristics of students at MBS Pleret. Additionally, the developed worksheet is not technologically integrated, whereas many students today have a greater interest in technology. Also, although qualitative data is presented in this research involving feedback from validators, teachers and students, the in-depth analysis of students understanding in facing contextual problems related to the values of the Qur'an is not yet very thorough. The limitations of this research can be used as a consideration for the next research, including the existence of studies that developing media integrated with Qur'an values but within the cultural context of a region or area, thus leading to diversity in the schools that will be the subjects of research and increasing the generalizability of the research result. Not only that, but integrating media into technology is also an important part, considering that current students are very proficient in the digital field. In-depth qualitative research can also be conducted to examine students' thinking processes in interpreting contextual mathematics problems integrated into the Quran Value.

CONCLUSION

This study developed contextual worksheets integrated with the Qur'anic value for material Systems of Linear Equation in Two Variable (SPLDV) using ADDIE model. The contextual student worksheet was validated by material and media validator, achieving scores of 161 and 144.5, respectively, which are

categorized as good and very good. Meanwhile., the result of the student responses from both small and large classes were 113.5 and 121, which were categorized as good and very good. Furthermore, the assessment of the suitability of integrating Qur'anic value into the material yielded scores of 24.5 and 20.43, both of which fall into the good category. Moreover, the student also reported positives perceptions regarding their understanding of the contextual SPLDV material integrated into the Qur'anic value, with score 35.9 and 36.9, which are in the good category.

This research has developed contextual worksheet that integrate Qur'anic value and implements them in learning process. This worksheet has been customized to the characteristics of students at MBS Pleret, making it easier to learn mathematics, especially in topic SPLDV. The contextual principles present in the worksheet allow students to connect the material with the context of daily life, which aligns with the Qur'anic value. Further research that can be conducted is to develop a contextual worksheet linked to local wisdom and integrated with Qur'anic values to broaden the scope of the subject and the use of the worksheet.

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