

DEVELOPMENT OF A DISCOVERY LEARNING-BASED STUDENT WORKSHEET (LKPD) TO IMPROVE STUDENTS' ANALYTICAL SKILLS IN THE AQIDAH AKHLAK SUBJECT ON THE QADHA AND QADAR MATERIAL FOR NINTH GRADE AT MTS AS-SHOFA

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ABSTRACT

Learning of Aqidah Akhlak at MTs As-Shofa is still dominated by lectures and conventional worksheets, so students' analytical skills regarding the Qadha and Qadar material have not developed optimally. This study aims to develop Student Worksheets (LKPD) based on Discovery Learning to improve students' analytical skills in the Aqidah Akhlak subject, specifically on the Qadha and Qadar material for ninth-grade students at MTs As-Shofa. The method used was Research and Development (R&D) with the 4D model (Define, Design, Develop, Disseminate). The research subjects were all 30 ninth-grade students, selected using total sampling with a one-group pre-test post-test design. The instruments included an expert validation sheet, teacher and student response questionnaires, and Higher-Order Thinking Skills (HOTS)-based essay questions. The results showed an average validity of 98.13% (highly valid), practicality of 96.57% (highly practical), and an N-Gain of 73% (high classification), with the average pretest score of 48.33 increasing to 86.17 on the posttest, and 93.33% of students achieving the high N-Gain classification. Thus, the Discovery Learning-based worksheets developed were proven to be valid, practical, and effective in improving students' analytical skills regarding the subject matter of Qadha and Qadar.

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INTRODUCTION

The development of globalization and information technology in the 21st century has driven major changes in the world of education (Destiana et al., 2025). Learning must not only focus on mastering subject matter, but must also cultivate Higher Order Thinking Skills (HOTS), particularly students' analytical skills (Gunartha, 2024). This

skill is important so that students are able to process information systematically, understand problems in depth, and make appropriate decisions in daily life (Ismeirita et al., 2025). From a constructivist perspective, students are not positioned as passive recipients of information, but as subjects who construct knowledge through meaningful learning experiences (Angglepi et al., 2025).

The urgency of improving analytical skills is also evident in the results of the 2022 Programme for International Student Assessment (PISA), which showed that students' ability to solve complex problems and think critically was below the OECD average, even becoming one of the lowest achievements during Indonesia's participation (OECD, 2023). One trigger for this condition is the teacher-centered learning approach, where verbal delivery of information has not yet fully provided space for students to think actively, critically, and independently (Arwira & Tambunan, 2025).

The learning process at Madrasah Tsanawiyah (MTs) should be designed to encourage analytical, inductive, and deductive thinking skills through a student-centered approach (Hakim, 2025). However, based on a preliminary study at MTs As-Shofa, it was found that the learning process for Aqidah Akhlak is still dominated by the lecture method and the use of conventional Arabic-language Student Worksheets (LKS) that limit students' room for exploration. Specifically for the Qadha and Qadar material, teachers also found that students had difficulty distinguishing between God's absolute decrees and matters that can be pursued through human effort (*ikhtiar*). In addition, the teaching media used have not been optimal in helping students think analytically and relate concepts to real-life contexts in an applicable way. Thus, there is a clear gap between the ideal learning conditions and the actual conditions in the field.

This condition indicates the need for learning media capable of connecting the concept of Qadha and Qadar with students' real experiences in a more meaningful way. One relevant alternative is Discovery Learning-based Student Worksheets (LKPD). LKPD are systematically designed to guide the discovery of concepts through directed learning activities (Nurjihan & Bunawan, 2025). Meanwhile, Discovery Learning emphasizes the process of independently discovering knowledge through six stages: stimulation, problem identification, data collection, data processing, verification, and generalization (Siregar et al., 2025). In Islamic Religious Education (PAI) learning, this model is considered flexible for use across various materials and contributes positively to the development of students' understanding and 21st-century skills (Afuwah et al., 2024).

Several previous studies have proven the effectiveness of Discovery Learning-based LKPD in improving students' analytical skills. Fitria et al. (2024) proved that Discovery Learning-based LKPD in Biology was in the very feasible category (95%) and very practical category (94.1%) for encouraging students to actively play a role in discovering and applying their own ideas independently. Meanwhile, Arwira & Tambunan (2025) showed that the development of Discovery Learning-based e-LKPD on hormone material was very effective in improving students' analytical skills, with an N-Gain result of 72.26%, which trained students to analyze, evaluate, and create. However, both studies were still limited to the science domain, such as Biology. The application of Discovery Learning-based LKPD in Islamic Religious Education subjects, particularly Aqidah Akhlak, remains a gap that has not been widely studied in the academic literature.

This topic is increasingly relevant with the implementation of the Merdeka Curriculum, which emphasizes learning independence and the strengthening of a critical and highly reasoning Pancasila Student Profile (Nuralmira et al., 2025).

Based on this background, this research presents novelty in the form of an integration of Discovery Learning syntax specifically designed to dissect the Qadha and Qadar material through LKPD in the context of Aqidah Akhlak learning at MTs As-Shofa. This research aims to develop Discovery Learning-based LKPD on the Qadha and Qadar material that meets the criteria of validity, practicality, and effectiveness in improving students' analytical skills.

Based on the objectives above, the problem formulations in this research include: (1) how is the process of developing Discovery Learning-based LKPD in the Aqidah Akhlak subject on the Qadha and Qadar material for ninth-grade students at MTs As-Shofa using the 4D development model? (2) what is the level of validity and practicality of the developed Discovery Learning-based LKPD based on the assessment of material experts, media experts, and the

responses of teachers and ninth-grade students at MTs As-Shofa? (3) what is the level of effectiveness of Discovery Learning-based LKPD in improving students' analytical skills in the Aqidah Akhlak subject on the Qadha and Qadar material for ninth grade at MTs As-Shofa?

This research is expected to provide theoretical and practical benefits. Theoretically, the results of this research contribute to the development of science in the field of learning technology, particularly in the development of Discovery Learning-based teaching media for the Aqidah Akhlak subject at the Madrasah Tsanawiyah level. Practically, this research can serve as a reference for teachers in designing learning that is more active, innovative, and student-centered, as well as helping students improve their analytical skills so that they are better prepared to face the demands of 21st-century competencies.

Theoretical Review

Development of LKPD

According to the constructivist theory put forward by Jean Piaget, learning is an active process in which individuals construct their own knowledge through interaction with the environment. In his work *The Origins of Intelligence in Children*, Piaget (1952) explains that cognitive development occurs through the processes of assimilation and accommodation, so that knowledge is not acquired passively, but is actively constructed by individuals based on direct experience.

In line with this, Lev Vygotsky (1978), in *Mind in Society: The Development of Higher Psychological Processes*, introduced the concept of the Zone of Proximal Development (ZPD), which is the gap between students' actual ability and the potential development that can be achieved with the help of a more competent other. Vygotsky emphasized the importance of scaffolding as a form of structured support that is gradually reduced to encourage students' learning independence.

In the learning context, the most operational teaching medium for realizing learning independence is the Student Worksheet. Prastowo (2011) defines LKPD as teaching material that contains a summary of the material, activity instructions, and tasks designed to guide students in constructing knowledge independently. Thus, LKPD does not only function as a practice tool, but also as a learning medium that enables students to learn actively and in a directed manner.

The development of LKPD is a strategic step in creating an independent learning aid that facilitates student exploration through structured task guidance and instructions (Nurjihan & Bunawan, 2025). For the developed LKPD to be effective, Prastowo (2011) proposed three main requirements that must be met: didactic (oriented toward concept discovery and student activeness), construction (use of language appropriate to the level of cognitive development), and technical (attractive and easy-to-read visual presentation). The LKPD in this research was developed as scaffolding that facilitates students' independent exploration in order to improve their analytical skills.

Discovery Learning Model

Bruner (1961), in his work *The Process of Education*, argued that learning occurs most effectively when students discover the principles or answers to a problem for themselves. Knowledge discovered independently will be more durable, meaningful, and easily transferred to new situations compared to knowledge received passively (Safitri et al., 2025).

The Discovery Learning model operationalizes this idea through six systematic stages: stimulation to arouse curiosity, problem statement, data collection, data processing, verification, and generalization (drawing a conclusion) (Gloria et al., 2026). These six stages are structurally integrated into the developed LKPD as a road map for scientific thinking for students (Nurjihan & Bunawan, 2025).

Aqidah Akhlak Learning on the Qadha and Qadar Material

Aqidah Akhlak learning aims to shape a Muslim personality capable of correctly understanding the teachings of Islam (Damanik et al., 2025). In the Qadha and Qadar material, analytical skill becomes crucial because students are required not only to understand the concept of God's decree, but also to distinguish between decrees that are absolute and decrees that are still related to human effort (ikhtiar). This is very important to avoid a fatalistic attitude in the event of a mistaken understanding (Bahdar, 2024).

In line with this is the word of Allah SWT in QS. Al-Qamar verse 49:

إِنَّا كُلَّ شَيْءٍ خَلَقْنَاهُ بِقَدَرٍ ﴿٤٩﴾

Meaning: "Indeed, We have created all things according to a (precise) measure." (Kemenag, 2019).

M. Quraish Shihab (2005), in Tafsir Al-Mishbah, affirms that everything is created by Allah SWT with a measure, provision, and perfect order. This concept shows that understanding of Qadha and Qadar is not only related to belief in Allah's decree, but also encourages humans to understand wisdom, cause and effect, and the importance of effort (ikhtiar) in life. Therefore, students need analytical skills in order to distinguish between Allah's provisions that are absolute and provisions that are still related to human effort.

Allah also states in Q.S. Al-Hadid verse 22:

مَا أَصَابَ مِنْ مُصِيبَةٍ فِي الْأَرْضِ وَلَا فِي أَنْفُسِكُمْ إِلَّا فِي كِتَابٍ مِنْ قَبْلِ أَنْ نَبْرَأَهَا... ﴿٢٢﴾

Meaning: "No disaster strikes upon the earth or among yourselves except that it is in a register before We bring it into being..." (Kemenag, 2019).

According to the tafsir of Ibn Kathir (2004), Allah SWT has determined the entire destiny of His creatures before creating them. No calamity or disaster occurs on earth or befalls a human being except that it has all been recorded in the Preserved Tablet (Lauh Mahfuz). This decree existed before Allah created humans and all other creatures. Scholars explain that the phrase "before We create it" can refer to the creation of humans or to the calamity itself, but the stronger opinion states that it refers to the creation of all creatures. Thus, this verse teaches that everything that happens is within Allah's knowledge and decree, so that humans should accept His decree with full faith and patience.

Both verses above are supported by a hadith of the Prophet SAW, which reads:

عَنْ عَبْدِ اللَّهِ بْنِ عَمْرٍو بْنِ الْعَاصِ رَضِيَ اللَّهُ عَنْهُمَا قَالَ: سَمِعْتُ رَسُولَ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ يَقُولُ: كَتَبَ اللَّهُ مَقَادِيرَ الْخَلَائِقِ قَبْلَ أَنْ يَخْلُقَ السَّمَاوَاتِ وَالْأَرْضَ بِخَمْسِينَ أَلْفَ سَنَةٍ

Meaning: "Abdullah bin 'Amr bin Al-'As — may Allah be pleased with them both narrated: I heard the Messenger of Allah ﷺ say: 'Allah wrote the decrees of all creatures fifty thousand years before He created the heavens and the earth.'" (H.R. Muslim No. 2653).

This hadith explains that the entirety of creatures' decrees was known and determined by Allah SWT before the creation of the universe. This decree reflects the perfection of Allah SWT's knowledge, power, and will in governing every aspect of human life. Nevertheless, scholars affirm that belief in destiny does not eliminate the human obligation to strive and to be responsible for every action taken. Humans are still given the ability to choose and are obligated to make effort (ikhtiar) as a form of servitude to Allah SWT. Therefore, understanding of the concept of Qadha and Qadar must be able to give rise to an attitude of tawakal (reliance on Allah) accompanied by a spirit of effort, not an attitude of resignation (Al-Jauziyyah, 2013).

Students' Analytical Skills

Based on Bloom's Taxonomy as revised by Anderson & Krathwohl (2001), human cognitive abilities are grouped into six hierarchical levels: remembering (C1), understanding (C2), applying (C3), analyzing (C4), evaluating (C5), and creating (C6). Analytical skill (C4) is part of HOTS that requires students to break material down into its constituent parts and understand the relationships between those parts (Suyatno et al., 2023). In line with this, Piaget (1952) affirms that ninth-grade students are at the formal operational stage, cognitively already capable of abstract and logical thinking, so that learning that only requires memorization becomes less than optimal for the development of their cognitive potential.

This analytical skill includes three main sub-skills trained through the Discovery Learning model, namely differentiating, organizing, and attributing (Ahyana & Syahri, 2021). These three sub-skills are interrelated and hierarchically form a complete analytical skill (Falah et al., 2024).

First, differentiating refers to students' ability to sort and distinguish relevant information from irrelevant information, as well as to distinguish important parts from unimportant parts in a given material. In the context of the Qadha and Qadar material, this indicator is measured through students' ability to distinguish between qadha and qadar,

to distinguish mubram destiny (Allah's absolute, unchangeable decree) from mu'allaq destiny (Allah's decree that is related to human effort), and to distinguish a mistaken fatalistic attitude from correct faith in destiny.

Second, organizing refers to students' ability to identify the elements within a problem and recognize how those elements are interrelated to form a coherent structure. In the context of the Qadha and Qadar material, this indicator is measured through students' ability to organize the relationship between the concepts of destiny, effort (ikhtiar), reliance on Allah (tawakal), and patience (sabar) within a single, coherent framework of understanding, as well as to construct arguments about how faith in Qadha and Qadar has implications for daily life behavior.

Third, attributing refers to students' ability to determine the point of view, values, or purpose underlying a piece of information or event. In the context of the Qadha and Qadar material, this indicator is measured through students' ability to connect the wisdom of believing in Qadha and Qadar with concrete behavioral values such as the spirit of effort, an attitude of tawakal, and steadfastness in facing calamity based on evidence from the Qur'an and hadith.

These three indicators are trained gradually through the syntax of the Discovery Learning model integrated into the LKPD. The processes of data processing and verification become the main stages that train students to process, classify, and interpret information independently (Damayanti, 2022), so that these three analytical sub-skills can develop systematically through the use of the LKPD developed in this research

METHOD

This research This research uses a Research and Development (R&D) type of research with the 4D (Four-D Model) development model developed by Thiagarajan et al. (1974). This model covers four stages: Define, Design, Develop, and Disseminate.

In the Define stage, a needs analysis was carried out through observation and interviews with the Aqidah Akhlak teacher and students. This analysis included the collection of information regarding student characteristics and the problems faced in the learning process. This stage also included an analysis of the Merdeka Curriculum and an analysis of the Qadha and Qadar material to ensure alignment between the LKPD and the Learning Outcomes (Capaian Pembelajaran/CP).

In the Design stage, the learning product was designed based on the results of the needs analysis. This stage began with the creation of a storyboard, which outlined the layout, structure, learning objectives, and media content. This design also took into account the format, color, and organization of learning components appropriate to the context and cognitive level of the students.

In the Develop stage, the product design was realized into a prototype. The product was then validated by material experts and media experts to evaluate technical, content, and pedagogical feasibility aspects, and was tested on a limited basis with students to ensure the validity of the resulting product. Based on the validation and trial results, product revisions were made based on the suggestions and comments of the validators to refine the feasibility and practicality of the developed teaching media.

Then the final stage, Disseminate, involved distributing the product already declared valid, practical, and effective on a limited basis to the Aqidah Akhlak teacher at MTs As-Shofa as a learning tool that can be used on an ongoing basis. The product was also documented in the form of a research report as a reference for future researchers. In this research, the disseminate stage was carried out on a limited basis given the time constraints and scope of the research. Although widespread dissemination to other madrasahs has not yet been carried out, this stage was nevertheless implemented as an integral part of the 4D development model procedure required by Thiagarajan et al. (1974).

The research was conducted at MTs As-Shofa. The research subjects were determined using a total sampling technique, in which all 30 ninth-grade students were designated as research subjects. This technique was chosen because of the limited population size, and all members of the population were considered to have characteristics relevant to the research objective, namely students who were studying the Qadha and Qadar material in the Aqidah

Akhlaq subject. This research used a one-group pre-test post-test design, in which all subjects took a pre-test before using the LKPD and a post-test after learning took place using the developed Discovery Learning-based LKPD.

The research instruments used were a needs analysis in the form of an interview sheet and a needs analysis questionnaire for teachers and students. Then, a validation sheet consisting of a media expert validation sheet and a material expert validation sheet was used to test the validity of the media, along with a response questionnaire for teachers and students as an instrument to test the practicality of the media. Meanwhile, to measure the effectiveness of the LKPD, a test instrument at the HOTS level was used, consisting of 5 essay questions that had been validated by a question expert.

Validation data, teacher responses, and student responses were analyzed using a Likert scale. The assessment guidelines on the expert validation sheet and response questionnaire have 4 criteria: very appropriate, appropriate, less appropriate, and not appropriate, with scores of 1 to 4 per criterion. Formula 1 was used to calculate the validity and practicality of the data. Validity was grouped according to the criteria outlined in Table 1, while practicality was grouped according to Table 2. Before grouping the level of practicality, the average student response score for each aspect was calculated using Formula 2. Formula 3 was used to analyze effectiveness based on the increase in N-Gain score between the pre-test and post-test results, which was then grouped according to Table 3.

Percentage = (Score obtained / Maximum score) × 100% (Formula 1)

Percentage	Criteria	Description
0% - 44%	Invalid	Total revision
45% - 64%	Less valid	Major revision
65% - 84%	Valid	Minor revision
85% - 100%	Very valid	No revision

Table 1 Validity Criteria for the Student Worksheet (LKPD)

$S = \Sigma p / \Sigma n$ (Formula 2)

Where: S = Score per aspect; Σp = Total per aspect from all students; Σn = Number of students

Score	Description
0% - 20%	Very impractical
21% - 40%	Impractical
41% - 60%	Fairly practical
61% - 80%	Practical
81% - 100%	Very practical

Table 2 Practicality Criteria for the Student Worksheet (LKPD)

Gain = (Post-test score – Pre-test score) / (Maximum score – Pre-test score) (Formula 3)

N-Gain Score	Classification	Criteria
$N\text{-Gain} \geq 0.7$	High	Effective
$0.7 > N\text{-Gain} \geq 0.3$	Moderate	Fairly effective

N-Gain < 0.3	Low	Ineffective
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Table 3 N-Gain Classification for the Effectiveness of the Student Worksheet (LKPD)

RESULTS AND DISCUSSION

This research uses the 4D development model developed by Thiagarajan et al. (1974), covering the Define, Design, Develop, and Disseminate stages. The main objective of this research is to develop a valid, practical, and effective Discovery Learning-based Student Worksheet (LKPD) to improve the analytical skills of ninth-grade students in the Aqidah Akhlak subject on the Qadha and Qadar material at MTs As-Shofa. The success of the product was evaluated comprehensively through three main criteria: validity as the basis for ensuring the product's conformity with the development objectives, practicality indicating the feasibility of applying the product in learning, while effectiveness is the main indicator of the product's success in achieving the development objectives (Cahaya et al., 2024).

A. Define Stage

The Define stage is the initial stage in the 4D development model that aims to establish and define learning needs. Based on the results of the needs analysis conducted through observation and interviews at MTs As-Shofa, it was found that the Aqidah Akhlak learning process is still dominated by the lecture method and the use of conventional Arabic-language LKS. The teacher had never applied a Discovery Learning-based LKPD in teaching and learning activities, so the learning process had not yet fully supported the development of students' analytical skills.

The results of interviews with the Aqidah Akhlak teacher revealed that the analytical skills of ninth-grade students were still relatively low. Most students were only able to answer questions at the basic understanding level, namely remembering and understanding (C1-C2), while questions requiring analytical skill (C4) were still very rarely given. In addition, the Qadha and Qadar material was identified as one of the most difficult materials for students to understand, because it requires an understanding that distinguishes between Allah's absolute provisions and provisions that are still related to human effort.

The results of interviews with students also reinforced these findings. Students admitted that they often experienced confusion in distinguishing terms in the Qadha and Qadar material, and had difficulty relating it to real-life contexts. Based on the needs analysis questionnaire, students stated that they needed an alternative teaching medium that was more interactive, engaging, and contextual. This condition indicates the need for the development of a Discovery Learning-based LKPD specifically designed to dissect the Qadha and Qadar material in order to improve students' analytical skills.

The findings at the Define stage show a clear gap between the demands of ideal learning and the actual conditions in the field. Analytical skill does not form organically if students are never positioned as active subjects who process information. The dominance of the lecture method causes students' thinking processes to stagnate at the memorization level. The Qadha and Qadar material specifically has a high level of abstraction, because students are required not merely to understand definitions, but also to be able to distinguish mubram destiny (absolute decree) from mu'allaq destiny (decree related to human effort), as well as to avoid understanding that leads to a fatalistic attitude.

This is in line with Piaget's (1952) explanation that ninth-grade students are at the formal operational stage, a phase in which they are cognitively already capable of abstract and logical thinking. However, this potential will not develop if the learning environment does not provide appropriate stimulation (Riyadi & Supriatna, 2025). Within the constructivist framework, knowledge is not received passively but is constructed through active experience. Learning that relies solely on memorization actually stunts students' formal operational potential. Vygotsky's (1978) concept of the Zone of Proximal Development (ZPD) also states that students at this stage actually have developmental potential far higher than their actual ability, but need structured scaffolding to reach it. The absence of this scaffolding is the root of the low analytical skill.

Bahdar (2024) adds that an understanding of Qadha and Qadar that is not guided analytically has the potential to give rise to a mistaken fatalistic attitude. Therefore, the use of structured learning media is not only a pedagogical

need, but also a moral and religious responsibility in shaping students' correct understanding of the concept of destiny in Islam. The findings of this Define stage are also in line with Arwira and Tambunan (2025), who identified that the teacher-centered approach systematically limits room for exploration and hinders the development of analytical skill.

B. Design Stage

Based on the results of the needs analysis, the Design stage was carried out by designing the LKPD product using the Canva application. The design process began with the creation of a storyboard that outlined the layout, structure, learning objectives, and media content. The LKPD product was designed to consist of content components and supporting components. The content component contains two learning activities structured based on the six syntax stages of the Discovery Learning model, namely: (1) Stimulation, (2) Problem Statement, (3) Data Collection, (4) Data Processing, (5) Verification, and (6) Generalization. All activities were aligned with the Merdeka Curriculum Learning Outcomes (CP) for the ninth-grade Aqidah Akhlak subject on the Qadha and Qadar material.

The supporting components of the LKPD include a cover, preface, table of contents, learning outcomes and objectives, instructions for use, Discovery Learning syntax, concept map, theoretical basis, and author's biography. All components were designed to support contextual learning that trains the ability to distinguish concepts, analyze religious evidence, and connect faith values with students' real-life attitudes.

Activity 1 focuses on conceptual understanding (definitions, the difference between qadha and qadar, textual religious evidence, contextualization) with a stimulus in the form of a learning video accessible via QR Code along with contextual discourse, while Activity 2 is directed at the analysis of values and behavior (the wisdom of faith, patience, effort, and reliance on Allah). All material was aligned with the Merdeka Curriculum Learning Outcomes.

The design of these two hierarchical activities is not merely a technical choice, but reflects careful pedagogical consideration. Activity 1 builds the foundation of conceptual understanding that is a prerequisite before students enter Activity 2, which requires higher-level analytical thinking. The integration of the QR Code provides a multi-platform dimension, meaning that learning is not limited to printed text, but also accommodates visual-audio modalities appropriate to the characteristics of digital-generation students. The selection of religious evidence from QS Al-Qamar (49), QS Al-Hadid (22), and Hadith Narrated by Muslim No. 2653 in Activity 1, as well as QS Ar-Ra'd (11) and Hadith Narrated by Muslim No. 8 in Activity 2, ensures that all analytical activities are grounded in authentic religious sources recognized as a basis of Islamic law.

This design concretely operationalizes Bruner's (1961) discovery learning theory. Bruner asserts that students learn most effectively when they themselves discover and construct meaning, rather than merely receiving ready-made information. By positioning the six Discovery Learning syntax stages as a road map for scientific thinking, this LKPD positions students as active actors who move from curiosity (stimulation) toward the independent construction of knowledge (generalization).

In addition, the gradual arrangement of learning activities from Activity 1 to Activity 2 reflects the application of Vygotsky's (1978) concept of scaffolding, namely the provision of learning support adjusted to students' developmental level. This framework is gradually reduced as students' ability and independence increase, so that they are not immediately confronted with complex analytical demands without adequate cognitive readiness. The visual appearance created through Canva is also not merely decorative. Bruner (1961) affirms that intrinsic motivation is a prerequisite for the discovery process to take place authentically, and an attractive and contextual appearance serves as the initial stimulus that arouses this motivation.

C. Develop Stage

In the Develop stage, the product designed in the Design stage was realized into an LKPD prototype and then went through three main processes: expert validation, product revision, and trials with students to measure practicality and effectiveness.

Validity of the Discovery Learning-Based LKPD

The designed product was validated by two validators, namely a media expert and a material expert. Validation aimed to evaluate the feasibility of the product from technical, content, and pedagogical aspects before it was tested with students. The results of the product validation are presented in Table 4.

Assessment Aspect	Percentage	Category
Media Expert Validation	100%	Very Valid
Material Expert Validation	96.25%	Very Valid
Average Percentage	98.13%	Very Valid

Table 4 Results of Media and Material Expert Validation

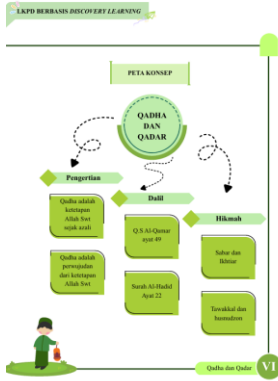
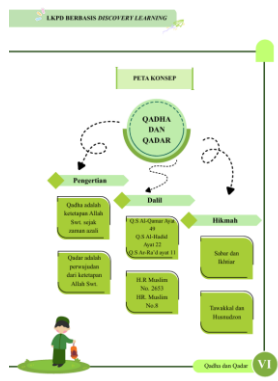
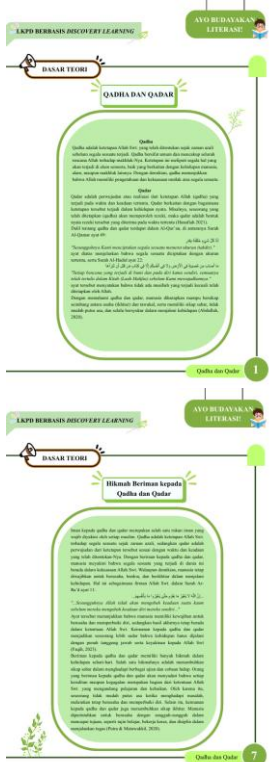
Based on the validation results, the media expert gave a validation percentage of 100% (very valid), covering all 30 criteria items relating to LKPD size, cover design, and content design. The material expert gave a validation percentage of 96.25% (very valid) with a total score of 77 out of a maximum score of 80, where several items in the material accuracy aspect received a score of 3 (valid) and became material for revision. The average validation percentage from the two validators reached 98.13%, in the very valid category.

The 98.13% validity achievement shows that the product not only meets the minimum feasibility requirements, but is at a level approaching perfection. The perfect score (100%) from the media expert indicates that all visual-technical aspects from layout, consistency of Islamic-themed colors, contextual illustrations, intuitive Discovery Learning syntax icons, to QR Code integration were fulfilled without any weaknesses noted. Meanwhile, the 96.25% score from the material expert, with a small margin from a perfect score, reflects that the presented Qadha and Qadar content is theologically accurate and pedagogically relevant, with a small room for improvement in the aspect of definitional accuracy that was promptly followed up.

The media validator gave no revision notes on the developed product, while the material validator provided several critiques and suggestions for improvement, all of which have been implemented in the product revision. The revision results based on the material validator's suggestions can be seen in Table 5.

Table 5. Revision Notes from the Material Validator
Add hadith evidence to the concept map section
Expand the theoretical basis section to 2 pages
Add Qur'anic verse and hadith evidence to the theoretical basis section
Add sources/references to the bibliography section

Based on the notes from the material expert validator, several revisions were made to the product. All input has been implemented in the product improvements. A comparison of the LKPD before and after revision can be seen in Table 6.

Improvement	Before	After
Add religious evidence to the concept map section		
Expand the theoretical basis section to 2 pages and add further Qur'anic verse and hadith evidence		

		LKPD BERBASIS DISCOVERY LEARNING AVO REBAYAKAN LITURASI DAFTAR TEORI Hikmah Beriman kepada Allah dan Rasul Salah satu tujuan dari pendidikan adalah untuk membentuk sikap dan perilaku yang baik pada diri siswa sesuai dengan konsep yang terkandung dalam ajaran Islam. Salah satu konsep yang penting dalam ajaran Islam adalah konsep iman. Iman adalah keyakinan yang mendalam terhadap Allah, hari akhir, kitab, dan rasul. Iman adalah fondasi utama bagi kehidupan seorang muslim. Tanpa iman, kehidupan manusia akan kehilangan arah dan tujuan. Oleh karena itu, penting bagi siswa untuk memahami dan mengamalkan konsep iman dalam kehidupan sehari-hari. Salah satu aspek dari iman adalah keyakinan terhadap Allah. Allah adalah Tuhan yang Maha Esa, Pencipta alam semesta, dan Tuhan yang Maha Menakutkan. Keyakinan terhadap Allah adalah dasar dari semua tindakan manusia. Dengan beriman kepada Allah, manusia akan merasa takut dan canggung terhadap Allah, sehingga akan berusaha untuk berbuat baik dan menghindari perbuatan buruk. Keyakinan terhadap Allah juga akan memberikan kekuatan dan keberanian kepada manusia untuk menghadapi segala tantangan dan kesulitan dalam kehidupan. Selain keyakinan terhadap Allah, iman juga mencakup keyakinan terhadap hari akhir. Keyakinan terhadap hari akhir adalah keyakinan bahwa setelah kematian, manusia akan dihadapkan kepada Allah untuk diadili. Keyakinan terhadap hari akhir akan memberikan motivasi kepada manusia untuk berbuat baik dan menghindari perbuatan buruk, karena mereka akan sadar bahwa semua perbuatan mereka akan tercatat oleh Allah dan akan memberikan konsekuensi di hari akhir. Keyakinan terhadap Allah dan hari akhir adalah dua aspek yang saling melengkapi dalam iman. Tanpa keyakinan terhadap Allah, keyakinan terhadap hari akhir akan kehilangan makna. Tanpa keyakinan terhadap hari akhir, keyakinan terhadap Allah akan kehilangan kekuatan. Oleh karena itu, penting bagi siswa untuk memahami kedua aspek ini secara menyeluruh dan mengamalkannya dalam kehidupan sehari-hari. Salah satu cara untuk memperkuat keyakinan terhadap Allah dan hari akhir adalah dengan mempelajari ajaran Islam secara mendalam. Ajaran Islam memberikan panduan yang jelas tentang apa yang harus dilakukan oleh seorang muslim untuk mencapai kebahagiaan di dunia dan di akhirat. Dengan mempelajari ajaran Islam, siswa akan semakin yakin akan kebenaran ajaran Allah dan akan berusaha untuk mengamalkannya dalam kehidupan sehari-hari. Salah satu aspek lain dari iman adalah keyakinan terhadap rasul. Keyakinan terhadap rasul adalah keyakinan bahwa Allah telah mengutus para rasul untuk menyampaikan pesan-pesan-Nya kepada manusia. Keyakinan terhadap rasul akan memberikan motivasi kepada manusia untuk mengikuti ajaran rasul dan berusaha untuk menjadi orang yang baik. Keyakinan terhadap rasul juga akan memberikan kekuatan dan keberanian kepada manusia untuk menghadapi segala tantangan dan kesulitan dalam kehidupan. Keyakinan terhadap Allah, hari akhir, dan rasul adalah tiga aspek yang saling melengkapi dalam iman. Tanpa keyakinan terhadap salah satu aspek ini, iman akan kehilangan makna dan kekuatan. Oleh karena itu, penting bagi siswa untuk memahami ketiga aspek ini secara menyeluruh dan mengamalkannya dalam kehidupan sehari-hari.
	LKPD BERBASIS DISCOVERY LEARNING DAFTAR PUSTAKA Abdullah, M. (2020). Implementasi model pembelajaran berbasis Al-Qur'an dan Al-Qur'an dalam pembelajaran matematika. <i>Jurnal Pendidikan Agama Islam</i>, 18(1). Faqih Muhammad, F. (2021). Refleksi guru dan siswa Al-Qur'an: Menerapkan konsep keagamaan dalam kehidupan sehari-hari. <i>Jurnal Studi Agama dan Masyarakat</i>, 10(1). Hasanah, (2021). Konsep guru dan siswa dalam era digital. <i>Jurnal Pendidikan Islam</i>, 10(1). Khan, I. N. A., & Mawaddah, M. A. (2020). Qura' dan qura' sebagai sumber belajar. <i>Jurnal Pendidikan Agama Islam</i>, 18(1).	LKPD BERBASIS DISCOVERY LEARNING DAFTAR PUSTAKA Abdullah, M. (2020). Implementasi model pembelajaran berbasis Al-Qur'an dan Al-Qur'an dalam pembelajaran matematika. <i>Jurnal Pendidikan Agama Islam</i>, 18(1). Abdullah, F., Nurrobbil, R. A., & Kurni, P. A. (2021). Qura' dan qura' sebagai sumber belajar. <i>Jurnal Pendidikan Agama Islam</i>, 19(1). Al-Farisi, I. Q. (2020). Qura' dan qura' sebagai sumber belajar. <i>Jurnal Pendidikan Agama Islam</i>, 18(1). Faqih Muhammad, F. (2021). Refleksi guru dan siswa Al-Qur'an: Menerapkan konsep keagamaan dalam kehidupan sehari-hari. <i>Jurnal Studi Agama dan Masyarakat</i>, 10(1). Firdaus, (2021). Konsep guru dan siswa dalam era digital. <i>Jurnal Pendidikan Islam</i>, 10(1). Khan, I. N. A., & Mawaddah, M. A. (2020). Qura' dan qura' sebagai sumber belajar. <i>Jurnal Pendidikan Agama Islam</i>, 18(1). Pratiwi, N. A., & Mawaddah, M. A. (2020). Qura' dan qura' sebagai sumber belajar. <i>Jurnal Pendidikan Agama Islam</i>, 18(1).

The high validity of this product is a logical consequence of a development process that refers to the three main requirements for compiling LKPD proposed by Prastowo (2011), namely the didactic, construction, and technical requirements. The didactic requirement is realized through learning activities oriented toward concept discovery and student activeness, the construction requirement is reflected in the use of language appropriate to the cognitive developmental stage of ninth-grade students, and the technical requirement is realized through the readability, layout, and visual appeal of the LKPD.

The high validity of the material also shows that the qadha and qadar content in the LKPD has been systematically designed to develop the three analytical sub-skills that are the focus of the research. These three sub-skills include differentiating, namely the ability to distinguish the concepts of qadha and qadar as well as mubram and mu'allaq destiny; organizing, namely the ability to construct the relationship between destiny, effort, reliance on Allah, and patience within a coherent framework of understanding; and attributing, namely the ability to connect the wisdom of believing in qadha and qadar with concrete behavior based on relevant religious evidence. These three aspects are in line with the classification of analytical skill put forward by Anderson and Krathwohl (2001).

Meanwhile, the very high validity achievement in the visual aspect reinforces Bruner's (1961) view that intrinsic motivation is one of the important prerequisites for the discovery process to take place optimally. In this context, an LKPD appearance that is attractive, communicative, and appropriate to students' characteristics serves as a stimulus that can increase their interest and involvement in the learning process. This finding is in line with the research of Fitria et al. (2024), which reported that Discovery Learning-based LKPD in the Biology subject obtained a very feasible category with a validity percentage of 95%. This similarity of results shows that the principles of developing Discovery Learning-based LKPD have cross-disciplinary relevance and can be effectively applied not only in science subjects, but also in the field of Islamic Religious Education.

Practicality of the Discovery Learning-Based LKPD

After being revised according to the validators' suggestions and declared valid, the LKPD was then tested on a limited basis with 30 ninth-grade students. Practicality was measured through response questionnaires given to the Aqidah Akhlak teacher and all students. The results of the practicality data analysis are presented in Table 7.

Respondent	Percentage	Category
Aqidah Akhlak Teacher	95%	Very Practical
Students (n=30)	98.13%	Very Practical
Average Percentage	96.57%	Very Practical

Table 7. Results of Teacher and Student Responses to the LKPD

Based on the results of the Aqidah Akhlak teacher's response, the Discovery Learning-based LKPD on the Qadha and Qadar material showed a very high level of practicality, with a percentage of 95%. Meanwhile, the results of the students' responses also showed that the Discovery Learning-based LKPD was in the very practical category, with an average percentage of 98.13%. Indicators that received a full score (100%) from students included the attractiveness of the appearance, text readability, ease of language, enthusiasm for learning, ease of use, and the usefulness of the LKPD in adding knowledge. This indicates that the Discovery Learning-based LKPD is very practical and feasible to use in the Aqidah Akhlak learning process, particularly for the Qadha and Qadar material.

The average practicality score of 96.57% indicates that the LKPD is not only theoretically feasible, but can truly be operationalized easily in a real learning context. The fact that the indicators of appearance attractiveness, readability, ease of language, and ease of use all achieved a perfect score (100%) from students shows that there were no technical or linguistic obstacles disrupting the learning process. The teacher specifically stated that the LKPD helped present the Qadha and Qadar material in a more structured and contextual way compared to the previously used conventional Arabic-language LKS, which carries an important meaning. There was a shift from media that burdened students' cognition (due to language barriers) toward media that freed up cognitive capacity to be fully focused on analytical activities.

This high practicality score can be understood through three mutually reinforcing factors. First, the Islamic visual design with intuitive Discovery Learning syntax icons meant students did not need a long adaptation time, so

their cognitive capacity could be fully directed toward the substance of the learning activity. Second, communicative language appropriate to the ninth-grade cognitive developmental level concretely realized Vygotsky's (1978) scaffolding as structured support that gradually guides students without replacing their thinking process. Third, the contextualization of the Qadha and Qadar material through real-life examples made students feel the personal relevance of the material, which drove increased learning motivation throughout the learning process.

The teacher gave feedback that the Discovery Learning-based LKPD helped present the Qadha and Qadar material in a more structured and contextual way compared to the conventional Arabic-language LKS previously used. This is in line with the research of Nurjihan and Bunawan (2025), which showed that LKPD can facilitate the learning process more effectively. Teachers can deliver material more systematically, while students can understand concepts better and more easily. This result is also reinforced by Risamasu and Pieter (2024), who state that a practical LKPD has been proven to improve mastery of the material and students' analytical skill, which implicatively strengthens the position of this Discovery Learning-based LKPD as a learning tool that can be adopted by Aqidah Akhlak teachers at MTs without requiring special technical training.

Effectiveness of the Discovery Learning-Based LKPD

The effectiveness of the LKPD was measured using N-Gain analysis (Hake, 1998) based on a comparison of pretest and posttest scores from 30 ninth-grade students, using a one-group pre-test post-test design. The pretest was administered before learning using the LKPD, and the posttest was administered after all learning activities using the LKPD were completed. The overall N-Gain analysis results can be seen in Table 8.

Average Pretest	Average Posttest	N- Gain Score (%)	Classification	Criteria
48.33	86.17	73%	High	Effective

Table 8. Results of the Assessment of Students' Analytical Skill

The analysis results show that the students' average pre-test score was 48.33, while the average post-test score increased to 86.17, with an increase difference of 37.84 points. The N-Gain percentage obtained was 73%, which falls into the high classification with the effective criterion. The distribution of N-Gain results per student shows that out of 30 students, 28 (93.33%) obtained a high N-Gain classification with the effective criterion, while 2 (6.67%) obtained a moderate N-Gain classification with the fairly effective criterion, and no student obtained a low N-Gain classification. Although the majority achievement is very satisfactory, the presence of a small group in the 'moderate' classification indicates that there is still some variation in the reception of the learning model.

More deeply, this distribution result indicates that the 2 students (6.67%) in the 'Moderate' classification were most likely triggered by differences in very low prior knowledge or an unreadiness of learning style for the independent discovery model. To address this small group, teachers are advised not to rely solely on the LKPD independently, but to provide interventions in the form of individual guidance (remedial teaching) or the addition of more intensive scaffolding in accordance with the concept of the Zone of Proximal Development. This approach is important so that the cognitive obstacles in this group can be overcome so that they are able to reach an analytical level equivalent to their peers.

The average pre-test score of 48.33 shows that students' analytical skill before the intervention was low and is in line with the findings of the Define stage, which showed that previous learning had not optimally trained thinking skill at the analysis level (C4). After using the LKPD, the average post-test score increased to 86.17, indicating a significant improvement in analytical skill. The effectiveness of the product is further strengthened by the N-Gain score of 73%, which falls into the high category. These results also show a consistent improvement in nearly all students, with 93.33% of students successfully reaching the high category, and none remaining in the low category. The two students (6.67%) who obtained a moderate N-Gain were likely caused by lower prior ability or a learning

style less suited to the independent discovery approach, so that the Discovery Learning-based learning process had not been fully optimal for both of them.

This significant improvement can be understood in depth through two complementary theoretical lenses. From Bruner's (1961) perspective, self-discovered knowledge will be more durable, meaningful, and easily transferred. As students actively moved through the six syntax stages of the LKPD — starting from observing the video stimulus (stimulation), formulating questions (problem statement), collecting evidence from Qur'anic verses and hadith (data collection), processing and classifying information (data processing), proving the initial hypothesis (verification), to drawing conclusions (generalization) — they were not merely doing exercises, but were also engaged in a meaningful process of knowledge construction through independent concept discovery.

Specifically, the data processing and verification stages became the most critical phases in shaping analytical skill, because it is at this phase that three sub-skills are trained simultaneously: differentiating (distinguishing the concepts of qadha and qadar, as well as mubram and mu'allaq destiny), organizing (arranging the relationship between destiny, effort, reliance on Allah, and patience within a coherent framework), and attributing (connecting the wisdom of faith in Qadha and Qadar with concrete behavioral values based on Qur'anic and hadith evidence). These three sub-skills are the operational dimensions of analytical skill (C4) as formulated by Anderson and Krathwohl (2001).

From Vygotsky's (1978) perspective, the 37.84-point score jump is real evidence that structured scaffolding in every LKPD syntax stage succeeded in bringing students beyond the limits of their actual ability, reaching a higher developmental potential exactly as predicted by the ZPD concept. This is reinforced by Damayanti (2022), who affirms that HOTS-oriented learning through Discovery Learning is able to gradually and systematically build higher-order thinking skill. Compared to previous research, the 73% N-Gain in this research exceeds the achievement of Arwira and Tambunan (2025), who reported an N-Gain of 72.26% in the development of a Discovery Learning-based e-LKPD for hormone material in Biology. Although the numerical difference is small, this difference has significant contextual meaning. Hormone material is concrete and can be operationalized through empirical observation, whereas the Qadha and Qadar material is abstract, normative, and theological in nature, and is inherently more challenging to operationalize into measurable discovery activities. The fact that this LKPD produced equivalent, even slightly higher, effectiveness proves that Discovery Learning syntax not only works optimally on science material, but can be effectively adapted to abstract religious material, provided that material contextualization, stimulus selection, and activity structuring are carried out carefully and based on theory.

Disseminate Stage

The LKPD product, which has been declared valid (98.13%), practical (96.57%), and effective (N-Gain 73%), was distributed on a limited basis to the Aqidah Akhlak teacher at MTs As-Shofa as a learning tool that can be used on an ongoing basis. The product was also documented in the form of a research report as a reference for future researchers. Dissemination to other madrasahs outside MTs As-Shofa has not yet been carried out due to time constraints and the scope of the research.

The limited scope of dissemination is a common condition in undergraduate-level development research. However, the distribution of the product to the Aqidah Akhlak teacher has real and direct practical value. The teacher obtained an innovative learning tool that can be used directly in the classroom without requiring special infrastructure. This means that the impact of the research does not stop at the academic level, but reaches actual learning practice.

The implementation of the Disseminate stage, although limited, was still carried out as an integral part of the 4D model procedure required by Thiagarajan et al. (1974), thereby maintaining the integrity of the research procedure. Beyond being merely a procedural formality, this stage carries an affective-religious dimension that is a distinctive feature of research in the PAI field. Students not only gained a cognitive improvement, but through the process of actively analyzing the evidence on Qadha and Qadar, they were also guided to build a more proportional understanding of faith: avoiding a fatalistic tendency, and being encouraged to integrate the values of patience, effort, and reliance on Allah into real life (Damanik et al., 2025).

This affective-religious dimension is not found in research on Discovery Learning-based LKPD in the science domain, and constitutes a distinct added value of the developed product. For future research, as implied by Nurjihan

and Bunawan (2025), this Discovery Learning-based LKPD, which has been proven valid, practical, and effective, has the potential to become a teaching material development model that can be replicated for other PAI material at the madrasah tsanawiyah level, with wider and more systematic dissemination.

CONCLUSION

The Discovery Learning-based LKPD was developed through the 4D model. At the Define stage, it was found that Aqidah Akhlak learning at MTs As-Shofa is still dominated by the lecture method and conventional LKS that do not yet support analytical skill. The Design stage produced an LKPD design containing two learning activities structured based on the six syntax stages of Discovery Learning (stimulation, problem statement, data collection, data processing, verification, generalization), aligned with the Merdeka Curriculum. The Develop stage realized the design into a validated and revised prototype. The Disseminate stage was carried out on a limited basis to the Aqidah Akhlak teacher at MTs As-Shofa.

The LKPD was declared very valid with an average validation percentage of 98.13% (media expert: 100%, material expert: 96.25%). The LKPD was also very practical with an average response of 96.57% (teacher: 95%, students: 98.13%), indicating no technical or linguistic obstacles in its implementation in the classroom. The LKPD was proven effective in improving students' analytical skill, as shown by an N-Gain score of 73% (high category). The students' average score increased significantly from 48.33 (pretest) to 86.17 (posttest), and 93.33% of students achieved the high N-Gain classification. This improvement covered three analytical sub-skills, namely differentiating, organizing, and attributing.

Based on the results of this research, several suggestions are proposed for further development. Given that the disseminate stage in this research was still carried out on a limited basis at MTs As-Shofa, future researchers are advised to conduct trials on a wider population scale involving several madrasahs to examine the generalization of the product's effectiveness. In addition, this Discovery Learning-based LKPD development model is expected to be replicable for other Aqidah Akhlak material or other Islamic Religious Education material that requires analytical skill, so that the transformation of learning from teacher-centered to student-centered can be fully realized at the Madrasah Tsanawiyah level.

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