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DEVELOPMENT OF EXPERIENTIAL LEARNING-BASED TOOLS TO ENHANCE STUDENTS' CREATIVE THINKING IN QUADRILATERALS AND TRIANGLES

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ABSTRACT The limited availability of supplementary mathematics learning resources aligned with the 2013 Curriculum motivated this study. The objective was to develop learning tools—comprising a syllabus, lesson plans, and student worksheets—on the topics of quadrilaterals and triangles for seventh-grade SMP/MTs students, using an experiential learning approach to enhance their creative thinking abilities. This research employed the 4D development model, consisting of the define, design, develop, and disseminate phases. Data were collected through questionnaires, observations, and interviews. The research instruments included validation sheets and practicality questionnaires. Expert validation indicated high levels of validity, with average scores of 3.56 for the syllabus, 3.70 for the lesson plans, and 3.67 for the student worksheets. Student worksheets were also found to be highly practical, as reflected in student response scores of 3.48 in large group trials and 3.51 in small group trials. These findings confirm that the developed mathematics learning tools are both valid and practical for use by seventh-grade students in SMP/MTs.

Keywords: experiential learning, creative thinking skills, student worksheets, learning tools development, geometry learning

ABSTRAK Keterbatasan ketersediaan sumber belajar matematika pendukung yang sesuai dengan Kurikulum 2013 menjadi latar belakang penelitian ini. Penelitian ini bertujuan untuk mengembangkan perangkat pembelajaran yang terdiri atas silabus, RPP, dan lembar kerja peserta didik (LKPD) pada materi segiempat dan segitiga untuk siswa kelas VII SMP/MTs, dengan pendekatan experiential learning guna meningkatkan kemampuan berpikir kreatif matematis siswa. Penelitian ini menggunakan model pengembangan 4D yang mencakup tahap define, design, develop, dan disseminate. Pengumpulan data dilakukan melalui angket, observasi, dan wawancara. Instrumen penelitian meliputi lembar validasi dan angket kepraktisan. Hasil validasi oleh ahli menunjukkan tingkat validitas yang tinggi, dengan skor rata-rata sebesar 3,56 untuk silabus, 3,70 untuk RPP, dan 3,67 untuk student worksheets. Student worksheets juga dinyatakan sangat praktis, dengan nilai rata-rata angket respon siswa sebesar 3,48 pada uji coba kelompok besar dan 3,51 pada uji coba kelompok kecil. Temuan ini menunjukkan bahwa perangkat pembelajaran matematika yang dikembangkan telah memenuhi kriteria valid dan praktis untuk digunakan oleh siswa kelas VII SMP/MTs.

Kata-kata kunci: experiential learning, kemampuan berpikir kreatif, lembar kerja peserta didik, pengembangan perangkat pembelajaran, pembelajaran geometri

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INTRODUCTION

Mathematics has played a significant role in the advancement of human culture and technology. It is one of the core disciplines taught at the elementary, secondary, and tertiary levels. Through structured patterns of mathematical thinking at school, students are equipped to face the challenges of a changing world. School mathematics aims to develop students' abilities in computation, measurement, deduction, and the application of mathematical formulas needed in daily life, particularly through resources on measurement, geometry, algebra, and trigonometry (Rahmah, 2013).

According to Hidayat and Sariningsih (2017), the objectives of mathematics learning are: (1) to train students' understanding through reasoning and drawing conclusions; (2) to develop students' creativity; (3) to improve students' problem-solving skills; and (4) to foster communication abilities for expressing ideas and conveying information. Furthermore, the attachment to Permendikbud No. 58 of 2014 on the 2013 Curriculum for SMP/MTs emphasizes creativity as a key characteristic of mathematics education. These objectives suggest that students should acquire mathematical competencies, particularly in creativity, reasoning, communication, and problem-solving, all of which are essential for real-life applications. Therefore, creative thinking is a critical skill that needs to be developed.

Creative thinking is closely related to creativity and is seen as an approach to addressing problems by considering multiple perspectives and being open to various, including unconventional, ideas (Meika & Sujana, 2017). According to Andiyana (2018), students with creative thinking skills can explore mathematical problems from different angles using non-routine strategies. Rahmazatullaili (2017) also suggest that creative thinking is one of the mathematical skills that can be cultivated through learning, as students need flexible thinking to solve problems. Thus, developing students' mathematical creativity is essential.

However, empirical evidence indicates that students' creative thinking abilities in mathematics remain underdeveloped. This is supported by results from the Trends in International Mathematics and Science Study (TIMSS), which was conducted with Indonesian students in 1999, 2003, 2007, 2011, and 2015. The studies show that only 2% of Indonesian students could answer high and advanced category questions, which are aligned with creative thinking skills (Hasanah & Haerudin, 2021). Faelosofi (2017) adds that students' creative thinking tends to be low because creativity is not emphasized in mathematics learning. An interview with a mathematics teacher at Babussalam Junior High School revealed that students typically solve problems based on textbook procedures or teacher examples, with no variation in answers, and are limited to routine problems. The teacher noted the absence of learning tools designed to foster students' original thinking. This highlights the need to better support students' mathematical creativity.

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One effective approach to enhancing students' creative mathematical thinking is rethinking the learning model used. Improving the model and the way content is presented can improve students' creativity (Noviyana, 2017). Developing learning resources requires innovation, and creating such resources has been shown to foster original thinking (Syahrir, 2019). Notably, research by Ruswanda, Rinaldi, Andriani, and Nabilla (2020) found that experiential learning enhances students' creative mathematical thinking. Desviani (2017) also states that students who actively participate in experiential learning gain more than just conceptual knowledge. According to Septianita, Suanto, and Heleni (2019), experiential learning emphasizes the importance of direct student experience. It involves four learning stages: Concrete Experience, Reflective Observation, Abstract Conceptualization, and Active Experimentation. Yet, interviews with teachers at Babussalam Pekanbaru Junior High School showed that no available mathematics teaching materials integrate the experiential learning model.

Geometry plays a foundational role in supporting students' mastery of algebra, number sense, arithmetic, and other advanced mathematics concepts (Novita, Prahmana, Fajri, & Putra, 2018). Hence, geometry—specifically the topics of quadrilaterals and triangles—is essential in mathematics learning. Amelia, Chotimah, and Putri (2021) found that students struggle with quadrilaterals and triangles due to difficulties in connecting internal and external mathematical concepts and applying algorithms. Data from the 2018/2019 national exam (UN) on the Puspendik Kemdikbud website shows low student performance on these topics. In Riau Province, only 26.18% of 15,716 students answered questions on quadrilaterals and triangles correctly; in Pekanbaru, the figure was 29.26% out of 4,853 students; and at Babussalam Pekanbaru Junior High School, only 19.15% of 94 students answered correctly. Clearly, fewer than half of the students demonstrated proficiency in this material.

Several prior studies have developed experiential learning-based materials for topics such as cubes and cuboids (Sari, 2019), prisms and pyramids (Septianita, Susanto, & Heleni, 2019), and improving communication skills (Sapta, 2017). However, none have specifically focused on developing learning tools for quadrilaterals and triangles using experiential learning to promote students' mathematical creativity. Therefore, this study focuses on developing lesson plans, student worksheets, and a syllabus based on experiential learning for teaching quadrilaterals and triangles to seventh-grade SMP/MTs students, aiming to enhance their creative mathematical thinking skills.

METHODS

This research is a type of development research (research and development) aimed at producing mathematics learning tools—including a syllabus, lesson plans (RPP), and student worksheets—based on the experiential learning model for Grade VII

topics on quadrilaterals and triangles. These learning tools are developed and evaluated for their validity and practicality.

The development process follows the 4D model, consisting of four main stages: define, design, develop, and disseminate. In the define stage, learning needs are identified through goal formulation, analysis of creative thinking indicators, learner characteristics, starting and ending competencies, and content analysis. The design stage involves drafting the learning tools, selecting appropriate formats, and outlining the initial designs. During the develop stage, the products are validated by two experienced lecturers and a mathematics teacher. If necessary, revisions are made based on expert feedback before conducting small group and large group trials to assess practicality. The disseminate stage includes the packaging and distribution of the finalized tools.

The research subjects consisted of six students in the small group trial and 25 Grade VII students from Babussalam Junior High School in the large group trial. Data collection techniques included validation sheets and student response questionnaires, both employing closed-ended and open-ended formats. Closed-ended questions used a 4-point Likert scale: 1 = very inappropriate, 2 = inappropriate, 3 = appropriate, and 4 = very appropriate. Student response questionnaires followed the same 4-point scale: 1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree.

Data analysis was conducted to determine both validity and practicality. The average validation score for each component was calculated using the formula adapted from Mu'tashimah, Putri, & Ramury (2020). A learning tool is considered valid if it obtains a minimum score of 2.50. The same threshold applies to practicality, based on analysis of student responses using a formula adapted from Sudijono (2011). Criteria for validity and practicality follow standard categories, with tools rated as "valid" or "very valid" and "practical" or "very practical" if their average scores fall within the respective intervals.

FINDING AND DISCUSSION

Define Stage

In the defining stage, five processes were undertaken: defining learning goals, analyzing learner characteristics, analyzing materials, conducting end-start analysis, and investigating the relationship between markers of creative thinking capacity. The initial end-start analysis aimed to identify early challenges in the development of educational technology. Based on data from the Trends in International Mathematics and Science Study (TIMSS) conducted in Indonesia in 1999, 2003, 2007, 2011, and 2015, students' creative thinking abilities remained relatively low.

The review of teaching resources revealed a misalignment between the materials utilized by teachers and the 2013 Curriculum. Learning resources were predominantly employed to fulfill administrative requirements rather than to

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support the development of mathematical competencies in accordance with curricular standards. Additionally, there was a noticeable lack of initiatives to develop mathematics learning materials that adhered to the 2013 Curriculum.

The syllabus issued by the Ministry of Education and Culture was found to be overly simplistic, failing to accommodate the diverse needs of students in the classroom. Lesson plans also did not fully comply with Permendikbud Number 22 of 2016, particularly lacking detailed descriptions of learning resources, including concepts, facts, principles, and processes. Although the Discovery Learning approach was frequently adopted, lesson plans were found to lack strategies aimed at cultivating students' creative thinking abilities.

Furthermore, the evaluation instruments for assessing knowledge and skills were incomplete, as they did not provide answer keys, scoring rubrics, or clearly defined indicators. Scheduling constraints also hampered the effective integration of planned learning activities into the student worksheets (LKPD), resulting in designs that were less engaging and failed to demonstrate the intended stages of the applied learning models. These findings serve as the basis for the design of learning tools that are aligned with the 2013 Curriculum and are based on the Experiential Learning model to enhance creative thinking skills in seventh-grade mathematics students.

An analysis of student characteristics indicated that seventh-grade students are typically between 13 and 14 years old, with varying levels of prior knowledge (low, medium, and high). Observations and interviews revealed that many students at Babussalam Junior High School experienced difficulties in mastering mathematical concepts. The implementation of Experiential Learning is deemed appropriate for students within this age range. According to Piaget (as cited in Adnan, Suanto, & Zuhri, 2019), students at this stage reach the formal operational phase, although cognitive development does not occur uniformly across all individuals. Some students continue to struggle with abstract thinking despite the use of concrete examples. Experiential Learning aligns with the 2013 Curriculum requirements, as emphasized by Desviani (2017), by directly involving students in the learning process and encouraging active participation.

At the material analysis stage, the relevant Basic Competencies (Kompetensi Dasar) identified were: (1) 3.11, connecting the formulas for the area and perimeter of various types of triangles and quadrilaterals (square, rectangle, rhombus, parallelogram, trapezoid, and kite); and (2) 4.11, solving contextual problems related to the area and perimeter of these figures. The scope of study covered the perimeter and area of squares and rectangles (allocated 2 hours), parallelograms and trapezoids (3 hours), rhombuses and kites (3 hours), and triangles (2 hours). Learning activities were designed to integrate the scientific method with hands-on learning experiences. Assessment of students' mastery of basic knowledge and skills was conducted through written problem-solving tests. Indicators of competency

achievement were formulated based on the requirements of the designated basic competencies.

At the stage of specifying learning objectives, learning goals were formulated based on the material analysis stage. Subsequently, indicators of creative thinking skills were developed corresponding to these learning objectives.

Design Stage

At the design stage, the main tasks were the selection of formats and the development of preliminary designs. During the format selection phase, the formats of the learning tools, the student response questionnaire, and the validation sheets were determined. In selecting the format of the learning tools, elements included in the lesson plans, student worksheets, and syllabus were identified. Meanwhile, the characteristics to be assessed—comprising several indicators and evaluation items—were specified for the validation sheet and the student response questionnaire.

Referring to Permendikbud No. 22 of 2016, the components of the syllabus consist of: (1) school identity; (2) subject identity; (3) formulation of core competencies; (4) formulation of basic competencies; (5) learning materials; (6) learning activities; (7) assessment; (8) time allocation; and (9) learning resources. Similarly, the components of the lesson plan were arranged based on the same regulation and include: school identity, subject identity, class or semester, subject matter, time allocation, learning objectives, basic competencies and indicators of competency achievement, learning materials, learning methods, learning media, learning steps, learning resources, and assessment of learning outcomes.

The header of the student worksheet contains the title, subject, semester, student/group name, learning objectives, and instructions for completing the worksheet. The content of the student worksheet was designed based on the experiential learning model and aligned with the scientific approach to facilitate students' mathematical creative thinking skills.

In designing the validation sheet for the syllabus, several aspects were considered: (1) completeness of identity and syllabus components; (2) alignment of basic competencies with core competencies and learning materials; (3) appropriateness of learning steps with the experiential learning model and the scientific approach; (4) assessment of learning outcomes; (5) time allocation; (6) learning resources; and (7) language use. The lesson plan validation sheet addressed aspects such as: (1) completeness of identity and lesson plan components; (2) clarity of formulated indicators of competency achievement; (3) formulation of learning objectives; (4) formulation of learning materials; (5) suitability of learning tools, media, and resources; (6) coherence of learning activities; (7) alignment of learning activities with the scientific approach; (8) alignment of learning activities with the stages of the experiential learning model; and (9) support for indicators of mathematical creative thinking skills.

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For the student worksheet validation sheet, the aspects evaluated included: (1) the cover design; (2) the content; (3) alignment with the experiential learning model; (4) suitability of activities with measures of mathematical creative thinking ability; (5) feasibility based on didactic requirements; (6) feasibility based on construction requirements; and (7) feasibility based on technical requirements. The design of the student response questionnaire considered the following: (1) the appearance of the student worksheet; (2) the content and material presented; and (3) the usefulness of the worksheet.

During the preliminary design phase, the syllabus, lesson plans, and student worksheets were developed. The syllabus was prepared first, followed by the lesson plans. The learning activities described in the lesson plans and syllabus were adjusted to align with the scientific approach and the experiential learning model. Subsequently, student worksheets were developed for seventh-grade junior high school students (SMP/MTs) focusing on quadrilaterals and triangles, integrating stages of the experiential learning model and the scientific method. Through these worksheets, students are encouraged to solve problems and discover mathematical formulas directly through hands-on experiences.

Finally, validation sheets for the learning tools and the student response questionnaire were constructed based on the format specifications established in the earlier phase.

Develop Stage

At this stage, two primary activities were carried out: development testing and expert validation. Three validators, comprising two experienced lecturers and one mathematics teacher, validated the developed syllabus, lesson plans, and student worksheets.

The syllabus validation yielded an average score of 3.56, categorized as very valid. All assessed aspects, including the completeness of identity and syllabus components, the alignment of basic competencies with core competencies and learning materials, the appropriateness of learning steps with the experiential learning model and scientific approach, the assessment of learning outcomes, time allocation, learning resources, and language use, were rated as very valid. However, a revision was suggested regarding the adjustment of total time allocation to better match the number of learning hours formulated in each meeting.

Table 3. Syllabus Validation Results

Aspects Assessed	Validator 1	Validator 2	Validator 3	Average Score	Validation Criteria
Completeness of Identity and Syllabus Components	4.00	4.00	4.00	4.00	Very Valid

Aspects Assessed	Validator 1	Validator 2	Validator 3	Average Score	Validation Criteria
Conformity of Basic Competencies with Core Competencies and Learning Materials	4.00	4.00	4.00	4.00	Very Valid
Appropriateness of Learning Steps with Experiential Learning Model and Scientific Approach	4.00	3.33	3.67	3.67	Very Valid
Assessment of Learning Outcomes	4.00	3.00	3.00	3.33	Very Valid
Time Allocation	3.00	3.00	3.00	3.00	Valid
Learning Resources	4.00	3.00	4.00	3.67	Very Valid
Language	3.00	3.00	3.75	3.25	Very Valid
Total Average	**3.71**	**3.33**	**3.63**	**3.56**	**Very Valid**

Regarding the lesson plan validation, the average score across four lesson plans was 3.70, categorized as very valid. Validators provided suggestions such as revising the first lesson plan related to the concept of perimeter to seek additional references and to explain the calculation procedures for perimeter and area more clearly. For the third lesson plan, validators recommended adding an introductory activity that explains the scenario students would experience and allocating time divisions according to class periods.

Table 4. Lesson Plan Validation Results

Aspects Assessed	Validator				Average Score	Validation Criteria
	1	2	3	4		
Completeness of Identity and Lesson Plan Components	4.00	4.00	4.00	4.00	4.00	Very Valid
Clarity of Formulation of Competency Achievement Indicators	3.89	3.89	3.89	3.89	3.89	Very Valid
Clarity of Learning Objectives	3.75	3.75	3.75	3.75	3.75	Very Valid
Formulation of Learning Materials	3.60	3.60	3.60	3.60	3.60	Very Valid
Appropriateness of Tools, Media, and Learning Resources	3.67	3.67	3.67	3.67	3.67	Very Valid
Learning Activities	3.70	3.62	3.62	3.62	3.64	Very Valid

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Aspects Assessed	Validator				Average Score	Validation Criteria
	1	2	3	4		
Suitability of Learning Activities with the Scientific Approach	3.67	3.67	3.67	3.67	3.67	Very Valid
Suitability of Learning Activities with Experiential Learning Model Steps	3.67	3.67	3.67	3.67	3.67	Very Valid
Suitability of Lesson Plans with Indicators of Mathematical Creative Thinking Ability	3.67	3.67	3.67	3.67	3.67	Very Valid
Total Average	**3.73**	**3.69**	**3.69**	**3.69**	**3.70**	**Very Valid**

For the validation of student worksheets, the average validation score was 3.67, categorized as very valid. Suggestions for improvement included adding information regarding the estimated time needed to complete the worksheets and incorporating images into certain practice questions.

Table 5. Student Worksheet Validation Results

Aspects Assessed	Validator				Average Score	Validation Criteria
	1	2	3	4		
Student Worksheet Cover	4.00	4.00	4.00	4.00	4.00	Very Valid
Content of Student Worksheet	3.67	3.67	3.67	3.67	3.67	Very Valid
Suitability with Experiential Learning Model	3.67	3.67	3.67	3.67	3.67	Very Valid
Suitability of Activities with Mathematical Creative Thinking Indicators	3.67	3.67	3.67	3.67	3.67	Very Valid
Compliance with Didactical Requirements	3.67	3.67	3.67	3.67	3.67	Very Valid
Compliance with Construction Requirements	3.39	3.39	3.39	3.39	3.39	Very Valid
Compliance with Technical Requirements	3.10	3.06	3.10	3.06	3.35	Very Valid
Total Average	**3.59**	**3.59**	**3.59**	**3.89**	**3.67**	**Very Valid**

Following these validations and the implementation of suggested revisions, a product trial was conducted over a 14-day period. The small group trial was conducted from May 1–4, 2024, involving six seventh-grade students from Class VII-4 at SMP Babussalam Pekanbaru, using a student response questionnaire. The large

group trial took place from May 6–15, 2024, involving 25 seventh-grade students from Class VII-3.

In the small group trial, the student response questionnaire results, as shown in Table 6, indicated an average score of 3.51, categorized as very practical. The lowest average score of 3.46 was found in Worksheet 3, while the highest score of 3.62 was found in Worksheet 2.

Table 6. Student Response Questionnaire Results – Small Group Trial

Aspects Assessed	Student Worksheet				Average Score	Validation Criteria
	1	2	3	4		
Student Worksheet Display	3.48	3.52	3.45	3.48	3.48	Very Practical
Content/Material of Student Worksheet	3.50	3.67	3.44	3.53	3.53	Very Practical
Ease of Use of Student Worksheet	3.44	3.67	3.50	3.50	3.53	Very Practical
Total Average	**3.48**	**3.62**	**3.46**	**3.50**	**3.51**	**Very Practical**

In the large group trial, the average student response score was 3.48, categorized as very practical. The lowest average score (3.43) was observed in Worksheet 1, while the highest (3.51) was observed in Worksheet 2.

Table 7. Student Response Questionnaire Results – Large Group Trial

Aspects Assessed	Student Worksheet				Average Score	Validation Criteria
	1	2	3	4		
Student Worksheet Display	3.54	3.49	3.50	3.49	3.50	Very Practical
Content/Material of Student Worksheet	3.36	3.51	3.46	3.45	3.44	Very Practical
Ease of Use of Student Worksheet	3.47	3.52	3.51	3.55	3.51	Very Practical
Total Average	**3.43**	**3.51**	**3.49**	**3.49**	**3.48**	**Very Practical**

Disseminate Stage

After the developed learning tools were declared valid and practical, the next stage was dissemination. This stage involved two main activities: packaging and diffusion and adoption. At the packaging phase, the syllabus, lesson plans, and student worksheets were compiled into a book format. Subsequently, during the diffusion and adoption phase, the product was disseminated by delivering the learning tools in book form to Babussalam Pekanbaru Junior High School and conducting online publications.

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Figure 1. Cover of the Learning Product

The research findings, which have been structured according to the stages of Thiagarajan's 4D model, are then discussed comprehensively. In the define stage, curriculum analysis, learner characteristics investigation, content examination, articulation of learning goals, and analysis of the relationship between markers of creative thinking capacity were conducted. It was found that the 2013 Curriculum is implemented in classroom instruction; however, students require learning resources that better support the development of creative thinking skills. This conclusion was drawn based on observations, interviews with teachers and students, and the review of teaching materials used in schools. In line with Noviyana (2017), it is suggested that student creativity can be improved through innovative application of learning models and creative presentation of learning materials.

In the design stage, the formats for the syllabus, lesson plans, and student worksheets were selected, alongside the formats for the validation sheet and the student response questionnaire. The elements contained within each document were carefully determined, ensuring that all aspects necessary for validation and assessment were included. Initial designs of the syllabus, lesson plans, and student worksheets were developed, along with the preparation of validation sheets for expert review and student response questionnaires. Learning tools were designed based on the Experiential Learning model, targeting Basic Competencies 3.11 and 4.11 on quadrilaterals and triangles, with the aim of enhancing students' creative thinking abilities. This approach aligns with the findings of Ruswanda, Rinaldi, Andriani, and Nabilla (2020), who emphasized that students' creative thinking skills are strengthened through the experiential learning approach.

During the develop stage, three validators—two experienced lecturers and one mathematics teacher—assessed Prototype I, which consisted of the initial draft of the learning tools. Based on their feedback, revisions were made, resulting in Prototype II. Subsequently, field trials were conducted using Prototype II. The trials included both small and large group testing, utilizing a student response questionnaire to evaluate the practicality of the student worksheets. The small group trial, conducted with six seventh-grade students from Class VII-4 of SMP Babussalam Pekanbaru, was followed by a large group trial involving 25 students from Class VII-3 of the same school. Upon meeting the criteria for practicality, the developed learning tools were designated as Prototype III.

Following further validation and practical evaluation, Prototype III was finalized into Prototype IV. At the disseminate stage, Prototype IV was packaged into book form and distributed to the research school site. Dissemination activities consisted of two phases: first, the packaging of educational resources into books, and second, the distribution of these resources to Babussalam Junior High School and their publication online.

Overall, it was found that the use of an Experiential Learning model benefits students with varying levels of cognitive abilities, from low to high, in enhancing their creative thinking capacity. These findings are consistent with prior studies demonstrating the effectiveness of the experiential learning model in fostering student creativity (Kurniawati, Kadir, & Octafiani, 2019; Sari, Wahyuni, & Prihatiningtyas, 2022; Ruswanda, Rinaldi, Andriani, & Nabilla, 2020; Syaepudin, 2016; Desviani, 2017). Thus, the results of this study provide additional empirical evidence supporting the assertion that Experiential Learning-based instruction, supported by appropriate learning resources such as lesson plans, syllabuses, and student worksheets, can significantly enhance students' capacity for creative thought.

CONCLUSIONS AND RECOMMENDATIONS

This development research employed the Experiential Learning model to enhance the creative thinking skills of seventh-grade students in SMP/MTs. The resulting products included a set of mathematical learning tools comprising a syllabus, lesson plans, and student worksheets aligned with the 2013 Curriculum. Following the validation process by three expert validators, the developed learning tools fulfilled the criteria for validity and practicality. The small group trial, involving six seventh-grade students from SMP Babussalam Pekanbaru, and the large group trial, involving 25 students from the same school, further demonstrated the practicality of the tools. Therefore, the developed learning tools have the potential to effectively support the enhancement of students' creative thinking abilities.

Based on these findings, it is recommended that educators begin to implement learning experiences that actively engage students in constructing their own knowledge through direct experience, thereby fostering the emergence of creative

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ideas aligned with creative thinking indicators. Educators are also encouraged to familiarize students with solving non-routine problems to further develop their creative thinking skills. Furthermore, for future researchers interested in developing learning tools based on the Experiential Learning model, it is suggested to design engaging and meaningful experimental activities to optimize the development of students' creative thinking throughout the learning process.

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