

TRAINING ON DEVELOPING INTERACTIVE STUDENT WORKSHEETS USING *LIVEWORKSHEETS* APPLICATION TO ENHANCE CREATIVE THINKING SKILLS

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Abstrak: Pemanfaatan teknologi dalam pendidikan sangat penting untuk meningkatkan efektivitas pembelajaran. Namun, guru-guru di SDN 50 Kota Bengkulu masih belum optimal dalam memanfaatkan teknologi untuk penyusunan LKPD interaktif. Hal ini menjadi mendesak karena keterbatasan keterampilan guru dalam menggunakan aplikasi berbasis teknologi. Tujuan dari pengabdian ini adalah untuk melatih guru-guru di SDN 50 Kota Bengkulu dalam menyusun LKPD interaktif dengan menggunakan aplikasi *Liveworksheets* untuk meningkatkan kemampuan berpikir kreatif. Metode yang diterapkan dalam kegiatan ini adalah pelatihan dengan model Identifikasi Kebutuhan, Perencanaan, Pelaksanaan, dan Evaluasi (IPPE). Kegiatan pengabdian masyarakat ini dilakukan di SDN 50 Kota Bengkulu yang berlokasi di Jl. Meranti No.4, Sawah Lebar Baru, Kec. Ratu Agung, Kota Bengkulu. Para guru yang menjadi sasaran program ini adalah seluruh staf pengajar di SDN 50 Kota Bengkulu. Instrumen evaluasi yang digunakan adalah lembar penilaian produk LKPD sebelum dan sesudah kegiatan. Pelatihan pengembangan LKPD interaktif menggunakan aplikasi *Liveworksheets* untuk guru SDN 50 Kota Bengkulu menunjukkan hasil yang signifikan. Setelah mengikuti pelatihan, guru-guru dapat menyusun LKPD interaktif secara mandiri dengan lebih baik. Penilaian melalui lembar tes menunjukkan bahwa kemampuan guru dalam menyusun LKPD meningkat secara substansial. Guru mampu menerapkan aplikasi *Liveworksheets* secara efektif dalam pengembangan LKPD interaktif yang sesuai dengan kebutuhan siswa. Pelatihan ini berhasil meningkatkan keterampilan guru sekolah dasar dalam menyusun LKPD berbantuan aplikasi *Liveworksheets* dengan keunggulan utama pada peningkatan kreativitas dan relevansi LKPD sesuai perkembangan teknologi pembelajaran terkini.

Kata Kunci: lembar kerja peserta didik, interaktif, aplikasi *Liveworksheets*

Abstract: The utilisation of technology in education is essential to enhance the effectiveness of learning. However, the Elementary School 50 Kota Bengkulu teachers have not yet optimised technology for developing interactive student worksheets (LKPD). This need has become urgent due to the teachers' limited skills in using technology-based applications. This community service program aims to train Elementary School 50 Kota Bengkulu teachers to create interactive student worksheets using the *Liveworksheets* application to foster creative thinking skills. The method applied in this program follows the Needs Identification, Planning, Implementation, and Evaluation training model. This community service activity was conducted at elementary school 50 Kota Bengkulu, located at Jl. Meranti No.4, Sawah Lebar Baru, Ratu Agung District, Kota Bengkulu. The target participants for this program were all teaching staff at Elementary School 50 Kota Bengkulu. The evaluation instrument was a product assessment sheet for student worksheets applied before and after the training. The training on interactive student worksheets development using the *Liveworksheets* application for teachers at Elementary School shows significant results. After completing the training, teachers were able to independently create interactive student worksheets more effectively. Evaluation through assessment sheets indicated a substantial improvement in teachers' ability to design student worksheets. Teachers effectively implemented the *Liveworksheets* application in developing interactive student worksheets tailored to student needs. This training successfully enhanced the skills of teachers in designing student worksheets with the *Liveworksheets* application, with notable advantages in increasing creativity and relevance in student worksheets aligned with the latest developments in educational technology.

Keywords: student worksheets, interactive features, *Liveworksheets* application

Introduction

Students' creative thinking abilities are the main focus of the learning process. Creative thinking is a key skill for students to solve problems innovatively, think outside the box, and generate new ideas. To achieve this goal, teachers must prepare Student Worksheets (LKPD) as effective teaching materials to stimulate student creativity. Creative thinking includes solving problems, producing answers, understanding concepts, and conveying ideas. Therefore, this skill is an important aspect of the Independent Curriculum because it influences student learning outcomes and understanding. According to Utami et al. (2020) and Zubaidah et al. (2017), creative thinking is a life skill that needs to be developed. Treffinger et al. (2002) identified the criteria for creative thinking as including: (1) idea creation, (2) idea exploration, (3) courage to explore, and (4) self-understanding.

Creative thinking is a thinking process that is capable of producing a variety of diverse solutions. This process is evident in innovation activities, requiring open-mindedness and supported by a diversity of ideas so that creative thinking is similar to problem-solving in achieving original and innovative results. The ability to think creatively has a positive effect on students' problem-solving abilities (Khoiri, W., Rochmad & Cahyono, 2013). Improving creative thinking skills is one of the keys to educational success (Alrubaie & Daniel, 2014). Thus, empowering creative thinking skills has real benefits for increasing student's understanding of the concepts and contributing to affective, cognitive and psychomotor learning outcomes. However, there are still several obstacles to learning these creative thinking skills.

The low level of students' creative thinking abilities has begun to occur (Fatur Rahman & Afriansyah, 2020). This level is caused by learning methods that still seem monotonous and prioritise the teacher's mindset (Afriansyah, 2014). As a result of this learning, students are passive, only imitating the teacher's actions without understanding their true meaning. Widiastuti & Indriana (2019) stated that students' low creative thinking abilities are caused by a learning process that is still not optimal. In addition, many teachers do not utilise context from the real world, even though this context can help improve students' knowledge and skills through direct experience. (Afriansyah, 2014). Therefore, it is important to implement new learning strategies to improve understanding of concepts, create a fun learning environment, and develop students' creativity in finding the right concepts. One tool teachers can develop to improve students' creative thinking abilities is Student Worksheets (LKPD).

LKPD is a learning tool that consists of a series of questions and important information arranged in a certain way to help students develop creative ideas and complete assignments regularly (Aditama et al., 2019). Arief (2015) stated that LKPD is a learning medium teachers can use as a tool in the learning process. LKPD facilitates interaction between teachers and students, allowing for better communication. LKPD is available in print and electronic format (e-LKPD). LKPD in paper form is considered less effective and practical for 21st-century learning, so there is a need for renewal or innovation, such as technology-based LKPD (Nurbayani et al., 2021). In the current digital era, LKPD is available in conventional and

electronic formats (Susilawati, Asyiah & Iskandar, 2022). However, there are still several problems in schools related to the development of LKPD by teachers. E-LKPD is a digital learning tool that provides exercises that can be accessed easily via PC/laptop or smartphone. Data in E-LKPD can include images, videos and verbal questions that can be answered directly (Zahroh & Yuliani., 2021).

Information and Communication Technology (ICT) offers great educational opportunities, including using digital applications that support interactive learning. However, although digital applications have enormous potential, many teachers still do not fully utilise this technology in classroom learning. Teachers often face challenges in designing practical and interactive LKPD due to limited knowledge and skills in using digital applications.

Observations at SDN 50 Bengkulu City revealed several problems. First, students show difficulty in reaching the level of creative thinking, which can be seen from the students' work results, which are less than optimal in terms of uniqueness and innovation. Students' work generally does not reflect maximum creativity, such as the ability to produce new ideas or alternative solutions to a problem. Second, teachers' knowledge and skills in compiling Student Worksheets (LKPD) that support creative thinking are still lacking. Teachers often rely on LKPD from government-assisted books or national publishers without adapting them to students' needs. The LKPD used often only focuses on closed questions or with single answers, thereby not allowing students to explore creative thinking. This condition prevents students from getting used to thinking "outside the box" and trying various problem-solving approaches. It is evident from interviews with teachers who consider preparing interactive LKPD difficult, time-consuming, and unfamiliar with technology that can help. To overcome this problem, the team of teachers decided to improve their skills through training.

One solution to this problem is changing the worksheet from a manual to an online format. Interactive applications such as Liveworksheets, accessed for free through Google, can help teachers compile LKPD. Liveworksheets allow teachers to convert printed worksheets into interactive online exercises and automatically correct student work. Students can work on and submit their worksheets online. According to Wulandari et al. (2023), this application motivates students with interesting features, while Liveworksheets saves time and paper usage for teachers.

The web application "Liveworksheet.com" allows the transformation of printed worksheets in .doc, .pdf, or .jpg format into interactive worksheets with an automatic correction system. This application supports creating various questions, such as multiple choice, short answer, true-false, and matching. It also provides opportunities for students to learn independently (Zulaiha, 2018). Susilawati et al. (2022) stated that students feel happier and more active when studying independently using the Liveworksheets application because the learning experience is similar to playing educational games on a cellphone. This interactive learning media effectively maximizes learning (Suarsana et al., 2021). The Liveworksheets application is not widely used, so it is interesting to explore it further and use it as a training medium in preparing LKPD (Novikova, 2020). Therefore, teachers must be more creative in designing learning by compiling LKPD following the independent curriculum. This program

aims to improve students' creative thinking abilities through training in preparing interactive LKPD using the liveworksheets application.

Method

This community service activity was carried out at SDN 50 Bengkulu City. The location of this service is Jalan Meranti No.4, Sawah Lebar Baru, Kec. Ratu Agung, Bengkulu City. This location was chosen strategically because it is the main target of this training program. By choosing SDN 50 as the implementation location, it is hoped that this program can have a direct and positive impact on the teachers at the school. This training program involved 22 teachers at SDN 50 Bengkulu City. The main aim of the training is to improve the teacher's ability to prepare interactive Student Worksheets (LKPD). Interactive LKPD is designed to create more engaging and effective learning material for students. This training was carried out for two days, 9-10 August 2024, as seen in Table 1. During this period, various training and evaluation activities were carried out to achieve the program objectives.

Table 1. Schedule of Service Implementation Activities

Time Schedule	The description of the service program
First day (August 9, 2024)	<div>1. Introductory Session: Introducing the concept of interactive LKPD and its benefits in the teaching and learning process.</div> <div>2. Liveworksheets Application Training: Provide training on using the Liveworksheets application to create interactive LKPD.</div> <div>3. Direct Practice: Teachers can practice creating interactive LKPD using this application directly.</div>
The second day (10 August 2024)	<div>1. Material Deepening Session: Learn more about techniques and strategies for preparing effective interactive LKPD.</div> <div>2. Evaluation and Question and Answer: Evaluate the LKPD prepared by the teacher. Q&A session to answer participants' questions and overcome the issues.</div> <div>3. Closing: Summarising the training results and providing feedback regarding achievements and next steps.</div>

According to Rukin (2021), qualitative research is a type of research that is descriptive and uses more analysis with an inductive approach. This service method employed a qualitative descriptive approach, namely describing training activities using the IPPE (Needs Identification, Planning, Implementation and Evaluation) model. Training activities carried out by the service team provide opportunities for teachers to understand the preparation of interactive LKPD using the Liveworksheets application to improve students' creative thinking abilities. The flow of the design model for implementing interactive LKPD preparation training using the Liveworksheets application can be seen in Figure 1.

Needs Identification activities are carried out by collecting information about current conditions, challenges, and existing needs. It can be done through surveys, interviews, observations, or analysis of organizations, operations, and individuals. Planning activities are carried out by making a detailed plan, which includes activities, required resources, schedule, and budget. The plan also includes designing training modules, determining the material to be taught, and determining the technology used and evaluation tools. Implementation is carried

out by carrying out training. It involves teaching the material, implementing interactive activities, and delivering it to participants. Evaluation activities are carried out by measuring the final results of the program, such as increasing participants' skills or knowledge. This activity is carried out using evaluation instruments such as posttests.

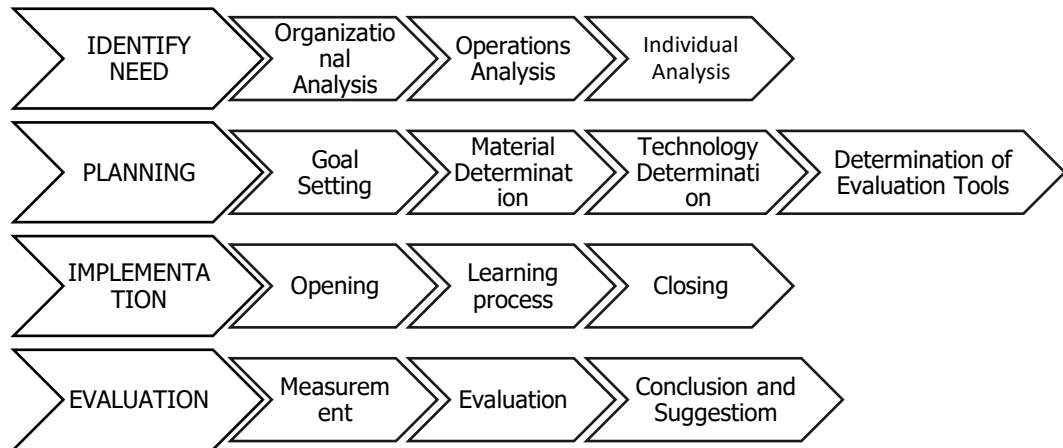


Figure 1. Training Model Flow

The data analysis was conducted using descriptive and qualitative methods to evaluate the development of teachers' creative thinking skills in designing interactive student worksheets (LKPD). Data were collected through observations of teacher activities and an analysis of LKPD products created before and after the training. This approach enabled the researcher to understand the differences in teachers' skills in designing creative LKPD, as measured by various indicators.

The instruments employed for data collection included a pretest and a posttest. The pretest was conducted before the training to assess teachers' creative thinking skills by asking them to prepare LKPD based on existing material. The resulting LKPD products are then evaluated to identify the extent to which teachers have implemented creativity in the design of their learning materials. After the training, a posttest was carried out to assess the increase in teachers' creative thinking abilities, which was also evaluated based on the LKPD products prepared after the training to measure the changes that occurred after receiving the training.

The evaluation referred to several indicators, such as the ability to create new ideas, openness to exploring ideas, diversity of solutions provided, suitability of LKPD to student needs, and ability to use technology. These indicators help measure teacher development in terms of creativity and application of technology, especially the Liveworksheets application, in compiling more interactive and interesting LKPD. Teachers' creative thinking abilities can be comprehensively assessed using pretests and posttests, comparing the results before and after training.

Results and Discussion

Community service activities at SDN 50 Bengkulu City were carried out from 9 to 10 August 2024 through four stages called the IPPE model (Identification of Needs, Planning,

Implementation, and Evaluation). The following provides a step-by-step explanation of the IPPE model implemented in this program.

Needs Assessment

The first step in this activity is to identify the needs of teachers at SDN 50 Bengkulu City regarding their ability to prepare interactive LKPD. Observations and interviews with teachers found that most teachers still have difficulty using technology to prepare effective and engaging LKPD. Limited knowledge about technology-based learning applications is one of the main problems teachers face. Based on the results of this identification, a training plan is prepared that suits these needs.

Planning

After identifying the needs, the planning stage commences with developing training materials to enhance teachers' skills in designing interactive LKPD. The training material focuses on using the Liveworksheets application to create more interesting and creative LKPD. In this planning, the training format, implementation time, and instruments used to measure the success of the training are also determined, such as pretest and posttest, which will assess the increase in teachers' creative thinking abilities.

Implementation

The 9-10 August 2024 training involved SDN 50 Bengkulu City teachers. They participated in training on using the Liveworksheets application to create interactive LKPD. The lecturers introduced the concept of interactive LKPD, explained using the Liveworksheets application, and discussed developing creative thinking skills. After the material is presented, training participants enter the direct practice phase. At this stage, teachers are provided with the opportunity to develop interactive LKPD using the Liveworksheets application. During the practical process, participants receive assistance from lecturers and students. The service team acts as a technical assistant, helping participants overcome technical problems and providing practical guidance on using the features in Liveworksheets.

Community service activities in the form of training in preparing LKPD using the Liveworksheets application are an initiative of lecturers to support teachers in utilising digital learning software for skills and abilities. With the development of educational technology, teachers need to adopt digital tools that can improve the teaching and learning process. The relevant media in developing this LKPD is the Liveworksheets application. The presentation of service material regarding interactive LKPD can be seen in Figure 2.

At the start of the training, participants are asked to take a pretest to assess their initial knowledge. After the pretest, the service team continued with a material presentation. [Figure 2](#) shows one of the moments when the service team delivered material about developing LKPD, which aims to create interactive LKPD. Based on research conducted by Farman et al. (2021), Liveworksheet-based interactive LKPD development received valuable criteria, and student practice results received a practical category. It can be concluded that this Liveworksheet-based interactive LKPD has proven to be valid and practical. Another research

conducted by Widiyanti (2021) found that interactive LKPD teaching materials using Liveworksheets are very valid and practical.



Figure 2. Delivery of Interactive LKPD Preparation Material



Figure 3. Delivery of Material Using the Liveworksheet Application

Based on Figure 3, the service team provides material presentations about using the Liveworksheets application. In this session, service team members explained the application features and how to use them to create interactive LKPD. This presentation aims to introduce the Liveworksheets application to participants and show how this application can increase the effectiveness of learning through digital media. Liveworksheets-based interactive LKPD can offer variety in learning so students do not get bored. (Fauzi et al., 2021). Andriyani et al. (2020) stated that LKPD using Liveworksheets was feasible and could improve learning outcomes.

Based on Figure 4 dan Figure 5, the next activity in the training is an explanation of creative thinking skills. At this stage, training focuses on developing creative thinking skills, which are important for designing effective interactive LKPD. The lecturer team aims to develop the creative thinking skills of the training participants (teachers). Thus, they can design informative LKPD to stimulate student creativity.

Creative thinking is included in high-level competencies (High-order competencies) and can be seen as a continuation of basic competencies (Mursidik et al., 2015). According to Faturohman and Afriansyah (2020), creative thinking skills are categorised as high-order

thinking skills or High-Order Thinking Skills (HOTS). HOTS is one of the targets of the independent curriculum that students must achieve. (Fadliyah et al., 2023).



Figure 4. Delivery of Creative Thinking Skills Material



Figure 5. The practice of compiling interactive LKPD using the Liveworksheet application

Community service activities at SDN 50 Bengkulu City prioritize systematic and interactive knowledge transfer so teachers can effectively understand and implement interactive LKPD creation. The following is a step-by-step explanation of how knowledge is transferred to training participants:

Providing an Initial Explanation and Introduction to Liveworksheets

In the first stage, the service team explained the steps needed to create an interactive LKPD using the Liveworksheets application. This explanation is delivered directly and through material that can be accessed via a link so that participants can learn and access further information if necessary. The service team explained the various features in Liveworksheets, including how to create and edit LKPD interactively and the benefits gained in improving student learning quality. This explanation provides an overview and basic understanding of how this application can be used in an educational context. During the explanation session by

the lecturer, it appeared that the trainee teachers showed high interest in developing LKPD using Liveworksheets and its benefits. The participants' high interest was reflected in their enthusiasm for following each material from the lecturer. After an explanation session on how to use Liveworksheets, the training participants began trying to compose their own LKPD with the platform. During practical activities, participants actively explored and used Liveworksheets and often asked about things they did not understand.

Practice Session and Making LKPD

After the theoretical material was presented, the activity continued with a practical session where teachers were allowed to create interactive LKPD directly. In this stage, they work with materials provided by the service team, including sample questions and LKPD formats. Teachers are given time to try out the various taught features and create LKPD that suits their teaching material. It allows teachers to understand the technical steps in making LKPD, from arranging interactive elements to preparing interesting questions in line with learning objectives.

Direct Mentoring and Guidance

During practical sessions, teachers work independently and receive direct assistance from the service team. This assistance is essential so teachers can overcome technical difficulties while making LKPD. One of the key steps in mentoring is helping teachers register or create an account on Liveworksheets. The service team ensures that every teacher can access the platform and compile LKPD smoothly. In addition, the team also guides the integration of interactive questions with relevant learning material so that students can use the resulting LKPD to answer questions and carry out enjoyable learning activities. Participants' results from using the Liveworksheet can be seen in [Figure 6](#).

Figure 6 shows the results of the training participants' work compiling interactive LKPD using the Liveworksheets application. This activity aims to prepare interactive learning LKPD at the elementary school level. Participant's work can be accessed via the following link: <https://www.liveworksheets.com/c?a=s&t=oxKPXvjHt8&sr=n&l=nm&i=sozzdsz&r=8v&f=dzdczozn&ms=uz&cd=pjm---yq-z6llvpjggnpg6yngnkgjglxg&mw=hs>.

The training participants seemed enthusiastic and focused when using Liveworksheets to prepare interactive LKPD. This application allows teachers to create more interesting and interactive learning materials, increasing student engagement in the learning process. With Liveworksheets, training participants can prepare learning materials other than printed LKPD. This interactive medium allows students to actively participate, interact with the material, and test their understanding through interactive questions and assignments. According to Susanti et al. (2023), teachers can attract students' attention by using an application to develop LKPD.

LEMBAR KERJA PESERTA DIDIK

PENDIDIKAN PANCASILA

Fase A

"Selamat datang di lembar kerja hari ini! Pada kegiatan ini, Kamu akan mengeksplorasi materi **Aku Patuh Aturan** dengan berbagai tugas yang dirancang untuk membantu Kamu memahami materi pelajaran. Bacalah instruksi dengan teliti dan selesaikan setiap bagian dengan cermat."

Tujuan Pembelajaran

Setelah mempelajari materi ini, peserta didik diharapkan dapat:

- menunjukkan perilaku mematuhi aturan di lingkungan keluarga;
- mengidentifikasi berbagai aturan di lingkungan keluarga.

Petunjuk Pengerjaan

Ada berbagai jenis kegiatan yang dapat Kamu lakukan pada Lembar Kerja Peserta Didik (LKPD) ini. Kamu dapat menyelesaikannya dengan teman-teman satu kelompok.

Waktu Pengerjaan

20 menit

AKTIVITAS 2

Pilihlah aturan yang sesuai!

ATURAN DI KELUARGA	
Aturan Kebersihan	Aturan Makan
<input type="text"/>	<input type="text"/>
Aturan Bersikap kepada Orang Tua	Aturan Bermain
<input type="text"/>	<input type="text"/>
Aturan Bersikap pada Kakak atau Adik	Aturan Belajar
<input type="text"/>	<input type="text"/>

AKTIVITAS 3

Klik pada huruf a, b, atau c yang sesuai!

- Aturan dibuat agar hidup menjadi...

a. Berantakan
b. Terbatas
c. Teratur
- Putri bangun pagi tepat waktu. Putri anak yang...

a. Tertib
b. Malas
c. kotor

AKTIVITAS 4

Perhatikan gambar berikut! Lalu susunlah kata-kata menjadi kalimat yang benar



Togar

lantai

rumah

menyapu

AKTIVITAS 5

Pasangkan sikap pada gambar dengan manfaat yang tepat!

Hubungkan dengan menarik garis!



Menjaga Kesehatan



Bersyukur pada Tuhan



Menjaga Kebersihan



Orang tua tenang dan tidak khawatir

Figure 6. Results of Participants' Interactive LKPD Work

Evaluation

After the training, an evaluation is conducted to assess whether the objectives were achieved. The pretest and posttest evaluations were conducted to measure teachers' creative thinking abilities in designing LKPD before and after the training. The evaluation results show a significant increase in teacher creativity in creating new ideas and utilizing technology to design LKPD that is more interactive and relevant to students' needs.

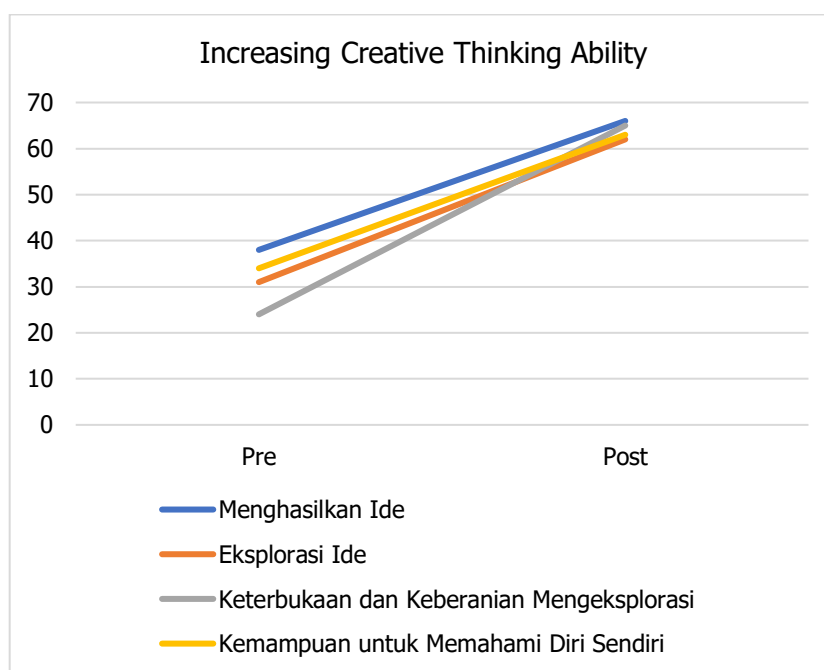
Evaluation of the effectiveness of service activities was measured by teachers' creative thinking abilities based on the LKPD products produced by teachers before and after the training. The assessment results can be seen in [Table 2](#).

Table 2. Teachers' Creative Thinking Ability

Creative Thingking Skills	Pre	Post	Gain Score	Criteria
Generating Ideas	38	66	0.45	moderate
Exploration of Ideas	31	62	0.45	moderate
Openness and Courage to Explore Ideas	24	65	0.54	moderate
Self-understanding ability	34	63	0.44	moderate

(Treffinger et al., 2002)

Table 2 shows that teachers have experienced an increase in the four criteria for creative thinking abilities. The Gain Score results obtained by the teacher are in the moderate category. These results indicate a relatively high positive increase after implementing the training activities. The increase in loyalty criteria can be seen in [Graph 1](#).

**Graph 1.** Increase in Teachers' Creative Thinking Abilities

Based on [Graph 1](#), the highest increase in creative thinking abilities is in the criteria of openness and courage to explore ideas. It aligns with the teacher's enthusiasm and courage in practising and compiling LKPD according to the teacher's needs. Teachers are brave and confident in choosing the type of LKPD needed and dare to be different so that the resulting product has its strength. It is in line with the findings of Samrin et al. (2024), who also noted an increase in teachers' knowledge and creativity in utilising application-based educational technology after attending training.

With this training, it is hoped that participants can increase their skills and confidence in utilising Liveworksheets to create creative, interesting and effective learning experiences. It is hoped that the results of this training can improve the quality of learning in schools and positively impact the teaching and learning process.

Conclusion

Training on preparing interactive LKPD using the Liveworksheets application for teachers at SDN 50 Bengkulu City showed significant results. After attending the training, teachers can better compose interactive LKPD independently. Assessment via test sheets shows that the teacher's ability to compose interactive LKPD has increased substantially. Teachers are able to apply the Liveworksheets application effectively to develop interactive LKPD that suit students' needs. This training succeeded in improving the skills of SDN 50 Bengkulu City teachers in compiling LKPD with the help of the Liveworksheets application. By increasing teachers' ability to compile interactive LKPD, it is hoped that they will be able to create material that suits the needs of students in class.

Acknowledgement

We thank the Bengkulu University FKIP for funding this community service science and technology scheme so it can be implemented well. We also thank the principal, teachers and staff of SDN 50 Kota Bengkulu for participating in this activity.

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