Strengthening teacher competence through joyful learning and innovative learning media training

Ghozali Rusyid Affandi[1], Fika Megawati[2], Nurfi Laili[1], Cholichul Hadi[3], Nur Aini Fardana Nawangsari[3], Noer Maunatur Rohmah[1]

[1]Department of Psychology, Faculty of Psychology and Education, [2]Department of English Language Education, Faculty of Psychology and Education, Universitas Muhammadiyah Sidoarjo
Jl. Raya Lebo No. 4, Sidoarjo, East Java, 61261, Indonesia
[3]Department of Psychology, Faculty of Psychology, Universitas Airlangga
Jl. Airlangga No. 4-6, Surabaya, East Java, 60286, Indonesia

ABSTRACT

A needs assessment at Muhammadiyah Middle School 9 Tanggulangin revealed that teachers struggle with creating interactive learning environments and developing innovative teaching materials. To address these challenges, a training program was conducted to enhance teachers' pedagogical skills, creativity, and motivation. The program consisted of two key activities: joyful learning training and training in the development of creative and innovative learning media. The process included several stages: preparation (needs assessment, program design, material development, and pre-test), implementation (intensive training on joyful learning and innovative media development), and evaluation. The training involved 12 teachers (4 men and 8 women). The results showed significant improvements in teachers' understanding of joyful learning concepts and their ability to create creative and innovative learning materials. This program highlights the importance of adopting innovative and enjoyable teaching strategies to enhance teacher competence and improve student learning experiences. The initiative demonstrated that targeted training could effectively address the challenges teachers face, leading to better educational outcomes.

1.   INTRODUCTION

Education is one of the main pillars in a country's development because it plays a role in producing an educated and broad-minded young generation. Not only that, education is also expected to create a generation that has positive character and adheres to *akhlakul kharimah*. As part of supporting educational development, Community Service activities need to be carried out in schools that need them. Therefore, Muhamadiyah University of Sidoarjo was moved to contribute to implementing educational development programs through community service at partner schools. The partner that is the target of mentoring is one of the schools that integrates the 2013 curriculum with the Islamic boarding school curriculum, namely Muhammadiyah Middle School 9 Tanggulangin (An-Nur Muhammadiyah Boarding School-PPN MBS) located in Penatarsewu Village, Tanggulangin District, Sidoarjo Regency. The boarding

✉ Corresponding Author:**Fika Megawati**: Tel. +62 31 8962733 │ E-mail: fikamegawati@umsida.ac.id

school has the slogan of a Superior Islamic Boarding School, with Islamic Character and Progress. This Islamic boarding school-based junior high school was founded in 2018 and based on BAN-S M accreditation in 2019, and the school received grade B accreditation status with a score of 84. As a boarding school-based educational institution, Muhammadiyah Middle School 9 Tanggulangin not only teaches religious aspects, but also tries to provide holistic education to form quality people. Therefore, all students are required to live in Islamic boarding schools and the learning model integrates religious knowledge with general knowledge at the junior high school level. Students come from various social and educational backgrounds, coming with varying levels of religious knowledge and academic abilities.

As an initial step in the community service activities, the team has carried out initial observations about general problems of partner schools. The observation results show that the learning process experienced several obstacles which resulted in the achievement of the expected learning objectives not being optimal. As a follow-up to activities, to deepen partner problems in student learning, a needs assessment was carried out to find out the specific problems faced in class on 10-12 October 2023. Results need assessment shows that there are obstacles that require improvement as listed in Figure 1.
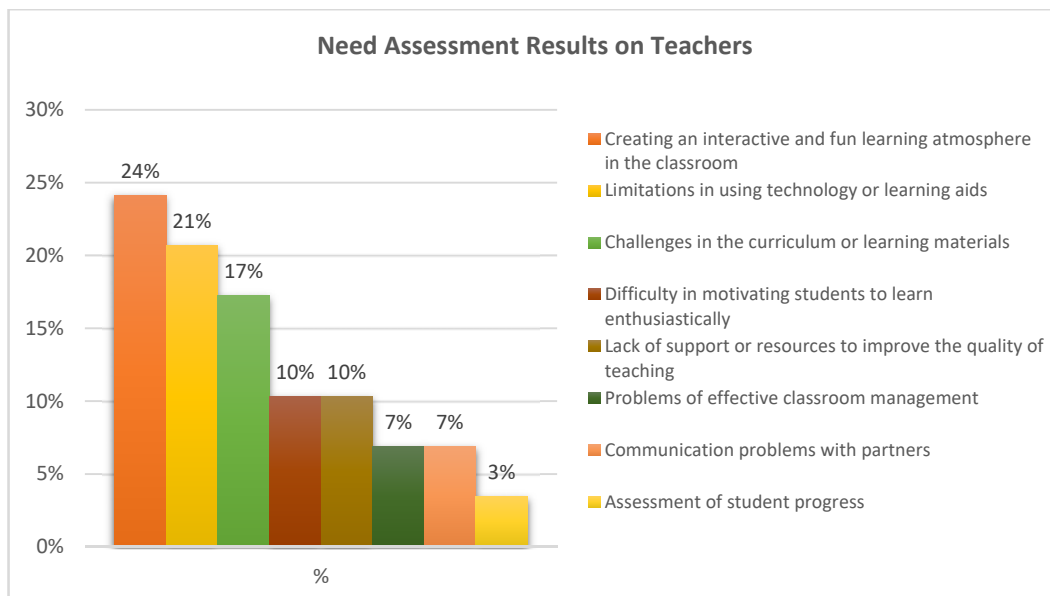
Figure 1. Need assessment results

As shown in Figure 1, there are eight types of obstacles in learning faced by teachers, including: (1) Problems regarding creating an interactive and enjoyable learning atmosphere; (2) Limitations in the use of learning technology; (3) Challenges of curriculum changes; (4) Problems in providing motivation to students; (5) Lack of resource support to improve teaching quality; (6) Problems in classroom management; (7) Communication problems with colleagues and students; (8) Problems in assessing student progress. However, of the eight problems faced by teachers, there are 2 problems that have the highest percentage felt by teachers, namely the problem of creating an interactive and fun learning atmosphere; and Limitations in the use of technology or learning aids. These two problems are the main focus for finding immediate solutions through this community service activity.

Lack of an interactive and enjoyable learning atmosphere can have a negative impact on cognitive skills, academic achievement, emotional and social success, and student performance. A supportive and

pleasant classroom climate has a positive relationship with student motivation and will increase student involvement in learning and improve their academic achievement. Some have difficulty digesting the lesson material, not to mention that students also have to take part in Islamic boarding school activities after returning from school in the afternoon and continue studying at night. The density and demands of learning activities in schools can result in negative impacts for students such as: fatigue, academic stress and academic boredom if they are not managed well by teachers during learning at school and in dormitories. If the academic stress felt by students is not resolved, it will have a negative impact on students' motivation and academic achievement. Stress that continually occurs and is not immediately resolved will reduce students' psychological well-being. So, it does not rule out the need for innovation and learning management that ensures students remain highly motivated in learning. Based on the background mentioned, mentoring activities for school teachers is important to provide insight into how to create a conducive learning environment that encourages effective teaching and learning processes, encourages student involvement, and provides facilities that can be accessed and utilized by students at Muhammadiyah Middle School 9 Tanggulangin so that the goal of establishing Islamic boarding school-based schools can be achieved. The Joyful Learning learning model and assistance in creating learning media is an approach that can be used as an alternative solution for teachers. Therefore, Joyful Learning and Interactive Learning Media training is an activity that is a solution to problems in partner schools.

Several community services that carry a theme joyful learning has been implemented in several elementary schools. Desstya et al. (2019) get positive results for the participants: (1) Teachers are starting to learn about simple science experiments; (2) Teachers are able to carry out simple science experiments and apply them in learning (Desstya et al., 2019). Furthermore, good contributions to students were experienced when Caesarani et al. (2022) do training Joyful Learning where the results show an increase in student interest in learning, student knowledge and learning motivation (Caesarani et al., 2022). Nurhajati et al. (2024) also found the same thing from their civil servants. As an outcome of the activity, the measurement results show an increase in teaching skills among educators, an increase in students' enthusiasm for learning, and a deeper understanding of Islamic principles (Nurhajati et al., 2024). Regarding learning media, Nurdewanto et al. (2018) agree that media creation training is very useful for increasing teacher competence in making learning materials more interactive. The benefits of media training are also shown in the results of community service by Qurohman et al. (2018) which shows an increase in students' and teachers' insight, skills and motivation in applying computers, especially in mathematics subjects. Next, Community Service which utilizes visual media was carried out by Rochaendi et al. (2022) which results in increased insight and skills of school principals through online mode. Overall, all previous findings showed a positive impact from training joyful learning. However, the overall focus is on primary school teachers. This is an opportunity for the team to investigate contributions joyful learning at the junior high school level that implements the Islamic boarding school system. This is important to study, apart from being based on the results of the needs analysis, it is also based on the need to look at the implementation process joyful learning for teachers at the secondary school level who have students with different characters from elementary school students.

This community service program aims to improve the skills of teachers in junior high schools Muhammadiyah 9 Boarding School Tanggulangin in creating a fun and interactive learning atmosphere, with the hope that it will produce a positive impact on students' learning motivation and academic achievement which will support the achievement of SDG's quality education (SDG's No. 4). It is hoped that this community service activity can provide benefits to overcome concrete problems faced by the school, namely creating a pleasant learning atmosphere. By improving teacher skills, it is hoped that this effort will make a positive contribution to the development of education in Islamic boarding schools, Islamic boarding schools, and education in Indonesia.

2.   METHODS

Activity Design

This community service activity was carried out at Muhammadiyah 9 Middle School Tanggulangin, East Java. The number of subjects consisted of 12 teachers with 4 male teachers and 8 female teachers. The equipment and facilities used in this community service consist of: Activity modules joyful learning in digital book form which can be accessed at https://tinyurl.com/4z9kh2wx equipment for learning media, classroom, and office stationery. The method applied consists of two main activities, namely: joyful learning intensive training and training in developing creative and innovative learning media.

Method Implementation

Joyful Learning Intensive Training is training on engaging, empowering, and fun learning methods about meaningful content in a safe and supportive community (Wicaksono, 2020). According to Anggoro et al., (2022) Joyful learning is a learning method in the form of direct activities or experiences, where students feel comfortable and generate curiosity. This activity aims to provide teachers with understanding and skills in creating a learning atmosphere that is more interesting, dynamic and focuses on student participation. On Joyful Learning Intensive Training There are 2 material emphases, namely the first material "Learning Atmosphere" and continued with the second session material "Application Joyful Learning". As for the aspects that will be given to joyful learning intensive training These include: (1) Using a game-based learning approach; (2) Attractive teaching strategies; (3) Using collaborative principles; (4) Use of learning media; (5) Use a practical and demonstration approach. There is an increase in teachers' understanding and skills in creating an interactive and fun learning atmosphere through joyful learning, it will have an impact on increasing students' interest in learning, increasing students' curiosity, making learning meaningful for students and will improve the quality of education in Islamic boarding schools.

This training in developing innovative and creative learning media aims to improve teachers' skills in utilizing the surrounding environment as a learning medium. Participants are given how to make creative and innovative learning media which refers to the innovative and creative learning media module containing procedures for selecting and making interesting and appropriate learning media which will become a reference and best practice for teachers in creating learning media that can be accessed anywhere and can be developed accordingly each teacher's subject. Through innovative and creative learning media, it will increase student involvement in learning, encourage students' critical thinking skills and support students' diverse learning styles so that teaching and learning activities at are not monotonous and boring.

Program Implementation Stages

This community service activity refers to three stages in its implementation, including: (1) Preparation stage; (2) Implementation stage; (3) Evaluation stage.

Preparation

The level of preparation consists of need assessment. Activity need assessment given to Muhammadiyah 9 Middle School teachers Tanggulangin which is also the subject of community service activities need assessment use to identify teachers' problems and needs in the teaching and learning

process in the classroom. This activity takes the form of an initial survey using open and closed methods to explore the main problems faced by teachers. The next activity is planning this program by identifying the objectives of the activity, target audience, time required and identifying the resources needed for community service activities.

Implementation

This implementation stage starts from material development activities. This activity aims to prepare training material that includes concepts and strategies to increase teachers' understanding and skills in creating an interactive and enjoyable learning atmosphere for students. Selection of methods and approaches. Determining the methods and approaches that will be given refers to the problems and conditions of the teachers who will be participants. The approach chosen is in the form of intensive training so that teacher understanding and skills increase. The next stage is implementation Joyful Learning Intensive Training and continued with training to develop innovative and creative learning media. More details are explained in Table 1.

Evaluation

The third stage is training evaluation and follow-up plans. In this third stage, training participants are given an evaluation in the form of a questionnaire regarding knowledge and attitudes regarding implementation joyful learning and the use of innovative and creative learning media. The indicators used in the evaluation questionnaire include: (1) Knowledge about joyful learning; (2) Implementation readiness joyful learning; (3) Understanding the creation of innovative and creative learning media; (4) Implementation of learning media.

3.   RESULTS AND DISCUSSION

Results

This community service activity begins with doing need assessment to teachers and management at Muhammadiyah Middle School Tanggulangin in the form of a survey to find the main problems that need to be found for solutions. Analysis results from need assessment. There are two main problems among several problems faced by teachers: (1) Lack of ability to create an interactive and enjoyable learning atmosphere in the classroom; (2) Limitations in using learning tools or media. Therefore, there needs to be a solution to resolve the two problems above in the form of Joyful Learning Intensive Training and training in the development of creative and innovative learning media. This activity consists of several stages of activities carried out in 2 days of material development, 1 week of project and evaluation of project results at the end of the week.

Learning Contract Stage

At the initial stage of implementation, participants are given an explanation of the process that will be followed during the training activities as well as information about how the training process will take place and what is expected from participants in the form of a learning contract. After being given a study contract, then participants were given a pre-test regarding the learning atmosphere and application joyful learning in schools as well as the use of learning media in the teaching and learning process in schools. The aim of this learning contract activity is so that all training participants understand correctly the training activity process and are ready to take part in the next activity.

Table 1. Stages of joyful learning community service activities

Stage 1. Preparation

Activity	:	Need assessment
		Program planning
Objective	:	Identifying teachers' problems and needs in the teaching and learning process in the classroom
Time	:	1 month before the main activity
Equipment	:	Tools for *need assessment* (pre-test), meeting room, computer, stationery, presentation materials

Stage 2.1. Implementation of Joyful Learning Training

Activity	:	- Learning contract - Psychoeducation regarding learning atmosphere - Reflections on the learning atmosphere in schools - Providing joyful learning materials - Case study on joyful learning implementation
Objective	:	- Make a mutual agreement and commitment between the facilitator and participants - Provide an understanding of the importance of a positive learning atmosphere - Evaluate the conditions of the learning atmosphere at school. - Practice joyful learning concepts and practices - Analyzing the application of joyful learning through case studies
Time	:	First day morning-afternoon
Equipment	:	Classroom, whiteboard, study contract, stationery, projector, presentation materials, case study materials.

Stage 2.2. Implementation of Creating Innovative and Creative Learning Media

Activity	:	- Providing materials for making learning media by utilizing surrounding learning resources - Practice of making learning media and demonstration of how to use learning media - Project for creating learning models based on joyful learning and creating learning media
Objective	:	- Provide information and examples of making learning media from local sources - Practicing creating learning media and demonstrating its use. - Developing a learning model based on joyful learning and creating related learning media
Time	:	Second day morning-afternoon and 1 week (specially for making learning media)
Equipment	:	Classroom, projector, presentation materials, examples of learning media, materials for making media, stationery, examples of RPS

Stage 3. Evaluation

Activity	:	- Evaluation process - Follow up activities
Objective	:	- Provide information about the success and effectiveness of activity. - Get the feedback from the participants for the reflection - Make planning for post-community service activity
Time	:	One week after Project completion
Equipment	:	Questionnaire distribution and Post-Test

Psychoeducation Stage Regarding Learning Atmosphere

This activity begins by dividing participants into groups and showing a video about an interactive and fun learning atmosphere (Figure 2). The aim is to introduce the concept of a learning atmosphere that can increase students' positive emotions and strengthen learning achievements. Participants were asked to write down the emotions that emerged from the video based on the achieved emotions on the sticky note. Tools and materials used include a laptop or projector for video playback, sticky notes, and markers to write down participants' emotions. The material presented is an introduction to an interactive and fun learning atmosphere and its impact on students' emotional achievements. The result is that participants have a better understanding of the importance of creating a positive and interactive learning environment.

Reflection Stage on the Learning Atmosphere in Schools

At this stage, participants are divided into discussion groups to reflect on teachers' experiences in the current learning atmosphere and find solutions to the challenges faced (Figure 3). The aim is to build a deeper understanding of the learning conditions in each environment and find improvement strategies that can be implemented. The tools and materials used include manila paper, markers, and pre-tests to support group discussions. The material presented is a reflection on current learning conditions and identification of challenges faced by participants. The result is that participants have a clearer idea of the problems that need to be addressed in learning.

Figure 2. Process of psychoeducation stage
Figure 3. Reflection process

Stage of Joyful Learning Training

Participants are given material about the concept joyful learning in this point. Participants are also given the task of compiling a lesson plan/teaching module based on the concept of joyful learning (Figure 5.). The aim is to introduce learning concepts that excite and motivate students and give participants the opportunity to apply them in lesson planning. As for aspects joyful learning implemented in the form of: (1) Using a game-based learning approach; (2) Attractive teaching strategies; (3) Using collaborative principles; (4) Use of learning media; (5) Use a practical and demonstration approach. The tools and materials used include manila paper, markers, folded paper, and sticky notes to support learning planning activities. The material presented includes an explanation of the concept Joyful Learning and steps to apply it in learning planning. The result is that participants have a better understanding of how to create interesting and meaningful learning for students.

Figure 4. The process of providing material regarding joyful learning
and designing learning designs based on the concept of joyful learning

Case Study of Joyful Learning

Participants are divided into groups to design learning methods based on the concept of joyful learning for subjects that are considered difficult or boring. The aim is to encourage participants to apply the concepts they have learned in real contexts and create interesting and effective learning strategies. Each group was asked to arrange stages of joyful learning activities and demonstrate them. The material presented is a step-by-step guide in designing and implementing joyful learning-based learning. The tools and materials used include manila paper, markers and materials for demonstrating learning activities. The result was that each group succeeded in designing creative and fun learning strategies in accordance with the concept of joyful learning (Figure 5).
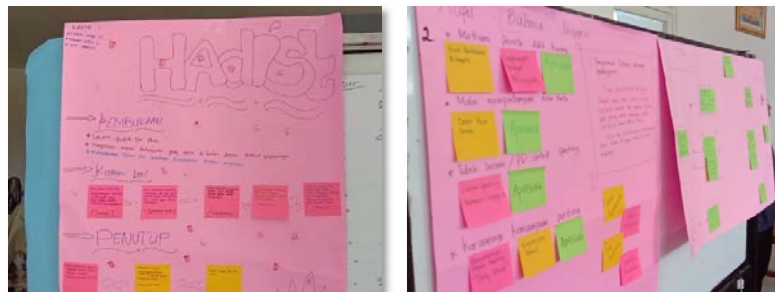
Figure 5. The results of preparing learning activities based on the concept of joyful learning

### The Stage of Providing Material for Creating Learning Media from Surrounding Learning Resources

Participants are divided into groups to create learning media by utilizing surrounding learning resources. Material presented regarding effective and creative learning media. The facilitator provides an introduction to the aims and benefits of creating learning media by utilizing surrounding learning resources. Apart from that, material is provided regarding the basic concepts of learning media, the types of learning media that can be used, as well as the principles that must be considered in creating effective learning media (Figure 6). This material aims to provide a theoretical basis to participants before starting to create learning media. The facilitator carries out demonstrations or provides concrete examples of the use of surrounding learning resources in creating learning media. This can be an example of using

objects around the learning environment to create interesting and relevant learning material. This demonstration aims to provide participants with a practical overview of how local learning resources can be utilized effectively.
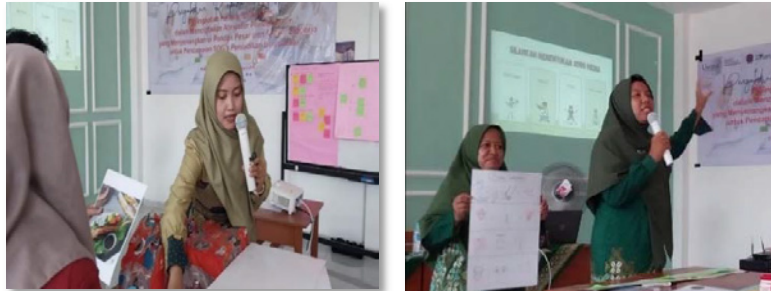
Figure 6. Process of making innovative and creative learning media

Practice Making Learning Media and Demonstrating How to Use Learning Media

Participants continued the activity by creating learning media based on previously planned ideas. Each group works actively to produce learning media that is appropriate to the concepts they have learned. During this process, participants are allowed to collaborate, implement creative ideas, and design interesting and effective learning media. After completion, each group presented how to use the learning media that had been created to all participants. This activity aims to provide practical experience in creating and using effective learning media. The result was that each group succeeded in creating learning media that was interesting and relevant to the learning material and could present it well to other participants (Figure 7).
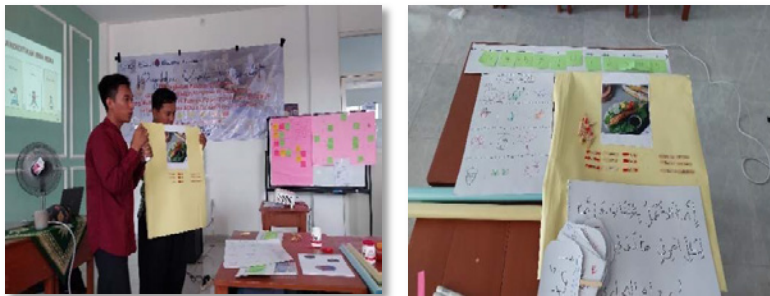
Figure 7. The results of creating innovative and creative learning media as well as explaining the procedures for using learning media by training participants

Evaluation Stage

This evaluation stage is carried out at the end of the training activity session. At this final stage, participants are asked to fill out a training evaluation sheet or post test to provide feedback on the overall training experience they participated in. A reflection discussion session was also held, where participants shared experiences, new knowledge gained, and ideas for applying the concepts they had learned in their respective work environments. The aim is to evaluate the effectiveness of the training and gain deeper insight into the benefits and challenges faced by participants in applying the material

they have learned. Participants are also asked to plan further actions that will be taken as concrete steps in implementing the learning from this training.

Analysis Result of Pre-Test and Post-Test

After being given training about joyful learning and making learning media, it was found that the pre-test and post-test data were normally distributed with scores w = 0.925 and p = 0.334 > 0.05 (Table 2). So that data analysis in this research can be continued using parametric statistics. The dataset can be accessed at the following link: https://tinyurl.com/27s9fr4n.

Table 2. Normality test (Shapiro-Wilk) data pre-test dan post-test

Measure 1		Measure 2	W	p
Pre-test	-	Post-Test	0.925	0.334

Descriptively, data from pre-test and post-test results obtained can be seen in Table 3. Based on this table, it shows that the minimum score on the pre-test is 23,000 and the post-test is 29,000. Meanwhile, the maximum score on the pre-test was 35,000 and the post-test was 40,000, with an empirical mean (average) score on the pre-test of 28.583 and post-test of 34.167. The standard deviation for the pre-test was 3.288 and the post-test was 4.589. Comparison of averages between pre-test and post-test shows that there is an increase in teachers' understanding in improving a pleasant learning atmosphere and understanding of learning media from before the training was given to after it was given (Figure 8).

Table 3. Descriptive statistic

	Pre-Test	Post-Test
Median	28.5	33.5
Mean	28.583	34.167
Std. Deviation	3.288	4.589
Minimum	23	29
Maximum	35	40
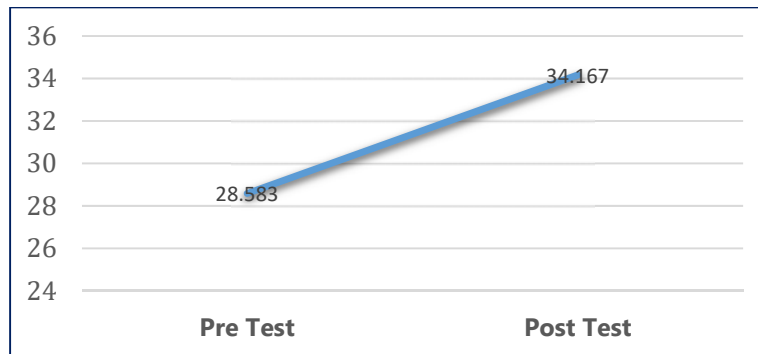
Figure 8. Graph of increase in mean score from pre-test to post-test

In Table 4, descriptive analysis shows that the average before being given training (pre-test) was 28.583 and after being given training the average knowledge about joyful learning and learning media

was 34.167. This indicates an increase in knowledge about joyful learning and learning media after being given training with a mean difference of 5.583 (Mean Difference).

Table 4. Results of different test analysis using paired samples t-test

Measure 1		Measure 2	t	df	p	Mean Difference	SE Difference	Cohen's d
Pre-Test	-	Post-Test	-5.606	11	< .001	-5.583	0.996	-1.618

Table 4 shows that the results of the paired sample t-test produced a t-score = 5.606 and p<0.001, this explains that the hypothesis which shows that there is a significant difference between the pre-test and post-test has been proven significantly. Where the negative value on the t-score proves that there is an increase from the pre-test score to the post-test score. Apart from that, the Cohen's d value of -1.618 shows the influence of the training that has been given on understanding joyful learning and creating creative and innovative learning media.

Discussion

In practice, Joyful Learning uses a fun learning approach through games, quizzes, and other physical activities. Through joyful earning training, teachers can use various learning resources to make lesson material more interesting and use play approaches outside the classroom which will be implemented better. Teaching methods of joyful learning also provide opportunities for teachers to utilize technology and the surrounding environment to present interesting lesson material. Teachers will carry out practices that help strengthen the skills and expertise needed to understand learning material. This is by the results of previous research, where the results were obtained from the activities carried out after attending training, there was an increase in teacher competency (Nurhajati et al., 2024). Teachers become more capable of developing materials and choosing learning activities that have been structured simply. Apart from that, teachers are also able to practice it in the classroom.

Previous research consistently highlights the importance of creating a learning environment pleasant for students, especially in the secondary school environment. Singh (2014) emphasizes the need for an appropriate learning environment and an appropriate learning sequence, while Waterworth (2020) underscores the role of positive emotions and democratic classrooms in enhancing learning. Bhakti et al. (2019) further explores the concept of happiness learning which focuses on students' needs and enjoyment in the learning process (Bhakti et al., 2019). Conklin (2014) adds to this by advocating the inclusion of games, imagination, and creativity in teaching practice. These studies collectively underscore the need for a holistic approach to creating enjoyable learning experiences in secondary schools, encompassing the physical and emotional environment, student-centered learning, and the incorporation of play and creativity.

Strategy joyful learning is learning ideas and strategies that combine meaningful, contextual, constructive learning, active learning, and the psychology of student development. Therefore, the conceptual emphasis is very relevant to the moral and psychological development of students in accordance with student's talents and interests with various discussion topics that are currently developing at school and in society. Students can learn from their environment, both physical and social (contextual learning). The use of contextual materials in enjoyable learning is a key aspect of arts-integrated education, as it encourages creativity, critical thinking, and conceptual understanding (Thote & Kumar Sen, 2019). This is further supported by the idea that joy in learning is related to children's understanding

and involvement in the learning process, and teachers play an important role as facilitators (Cronqvist, 2021). The importance of contextualized media for learning is also highlighted, as it can enhance the learning experience by providing relevant and interesting material (De Jong et al., 2008).

In accordance with the physiological and psychological development characteristics of adolescents, students also feel like and are happy because they are starting from something they already have. This produces a sense of self-confidence, which leads to feelings of being appreciated and recognized, which can be enjoyable. On the other hand, this reality will encourage students to participate actively in the learning process because the learning environment or academic environment is in accordance with what is desired. This is in line with the expert concept that active and fun learning will be most effective if learning is meaningful, socially interactive, repetitive, and guided by intentional instruction (Nesbitt et al., 2023). However, creating a fun active learning environment can be a challenge, as it requires a change in teaching paradigm and the use of engaging strategies (Patil & Dharwadkar, 2020). To increase enjoyment in the classroom, it is important to create a positive and democratic learning environment (Waterworth, 2020). This can be achieved by implementing best practices to encourage student engagement and foster a productive classroom climate (Frank, 2020).

Community service activities at Muhammadiyah Middle School 9 Tanggulangin apparently show a positive impact on the learning process. The teachers felt the benefits of the activities Joyful Learning Intensive Training and training to develop innovative and creative learning media. This is shown by changes in the results pre test the post test which experienced an increase as well as an understanding of the compilation of RPS based on the concept of joyful learning and learning media products prepared by teachers during the training process.

4.   CONCLUSION AND RECOMMENDATIONS

This community service activity aims to improve teachers' abilities to create an interactive and enjoyable learning atmosphere and to develop innovative learning media. The results of the activity showed a significant increase in teachers' understanding of Joyful Learning and the use of interactive learning media. The level of implementation success can be seen from the comparison between the pre-test and post-test results which shows an increase in the average score of 5,583, which shows the effectiveness of the training that has been carried out. Implementation of Joyful Learning succeeded in creating a more positive learning atmosphere, and the use of learning media developed by teachers also succeeded in fostering better creativity and innovation.

Community service program through activities Joyful Learning Intensive Training and training to develop innovative and creative learning media for teachers at Muhammadiyah Middle School 9 Tanggulangin has been implemented well, however, there are several limitations such as: 1) Limited resources such as time, energy and budget can be an obstacle in carrying out comprehensive training and deep. 2) Not all teachers can participate actively in training due to limited time or required technical skills. Therefore, the suggestions given to partners and servants include: 1) Providing adequate resources, where the servants then ensure the availability of sufficient resources in the form of budget, personnel, or learning equipment, so that training can run smoothly and sustainable. 2) Increasing teacher participation and involvement. Service providers and partners need to consider strategies to increase teacher participation and involvement in training, such as providing incentives or additional technical support, or mentoring assistance. 3) Development of collaborative networks. This is intended to encourage the formation of collaborative networks between teachers and schools to share experiences and best practices in implementing joyful learning and the development of innovative learning media. This can be done through discussion forums, workshops, or other collaborative activities. By taking

these steps, it is hoped that community service programs can be more effective in improving teachers' skills and understanding in creating a pleasant learning climate and developing creative and innovative learning media.

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