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Improving the Effectiveness of Training for the Creation of Simple and Effective Corn Fertilizer Tools Through the Use of Innovative Video Tutorials

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ABSTRACT

In Desa Puteng, an agricultural village within Bengkayang Regency, corn cultivation plays a significant role in the local economy. However, farmers in this community often encounter challenges in effectively fertilizing their corn crops, resulting in diminished productivity. To address this issue, an innovative approach to enhance training for the creation of simple and effective corn fertilizer tools was introduced through the use of video tutorials, which helped overcome language barriers, and offered visual, step-by-step guidance. This approach is aimed at improving the effectiveness of training and ensuring that farmers can easily access knowledge and skills, thereby increasing their agricultural productivity. Moreover, it also has the potential to disseminate agricultural information and technology to remote farming communities, contributing to the overall agricultural development in the region. This project was initiated by Institut Shanti Bhuana, with the primary goal of empowering the local corn farming community through effective training in corn fertilizer tool construction using innovative video tutorials. The objectives were to enhance farmers' understanding on efficient corn fertilization, teach them simple yet effective tool-making techniques, and overcome language barriers. Through the implementation of this project, Institut Shanti Bhuana aspires to create a positive impact on farmers' lives and elevate the overall welfare of rural communities.

Keywords: *Interactive training, Corn fertilization tools, Innovative video Tutorials*

1. INTRODUCTION

Desa Puteng, located in the Teriak District of Bengkayang Regency, is a rural area where the majority of its population relies on agriculture, particularly in corn cultivation.**(Handoyo & Santosa, 2024)** Corn is a staple crop and serves as the backbone of the local economy in Desa Puteng. However, farmers in this village often face challenges in ineffective corn fertilization, resulting in suboptimal agricultural productivity. In an effort to enhance the effectiveness of training in creating simple and effective corn fertilizer tools in Desa Puteng, an innovative solution is needed to assist farmers in understanding the techniques and usage of corn fertilization tools more effectively.**(Kesuburan, 2021)** One potential approach to

achieve this goal is through the use of innovative video tutorials. The utilization of video tutorials is a proactive step that can provide significant benefits to the community in Desa Puteng. In the limited geographic and infrastructural conditions of rural areas, video tutorials can be accessed flexibly by farmers.**(Khairunnisa et al., 2021)**By watching video tutorials, farmers can visually learn the step-by-step process of creating simple and effective corn fertilization tools. They can also observe best practices and proper techniques through visual representations in the videos. Furthermore, video tutorials have the advantage of overcoming language and communication barriers. In some cases, there are difficulties in understanding instructions delivered orally or in writing due to dialectal differences or low literacy levels in certain regions. With the presence of video tutorials, farmers in Desa Puteng can visually follow each step of creating corn fertilization tools without language or communication obstacles.**(Anwas, 2015)** This innovative approach is expected to enhance the effectiveness of training in creating simple and effective corn fertilization tools in Desa Puteng.
With easier access through video tutorials, farmers can acquire the knowledge and skills necessary to improve their agricultural productivity.**(Nurany et al., 2023)** Additionally, video tutorials have the potential to expand the dissemination of agricultural information and technology to other farming communities in remote areas, thereby contributing to overall agricultural development in Bengkayang Regency.**(Rangkuti et al., 2021)** In this context, the dedication to the community in Desa Puteng through the improvement of training effectiveness in creating simple and effective corn fertilization tools using innovative video tutorials is a suitable step to positively impact the lives of farmers and enhance the well-being of the rural community.

1.2. Partner Problems

The problems faced by our partners are as follows:

a. Lack of knowledge and skills in creating simple and effective corn fertilization tools, which hinders the productivity and quality of corn farming.
b. Limited access to materials and equipment needed to create simple and effective corn fertilization tools, especially in hard-to-reach areas.
c. Limited availability of learning resources, such as books or formal training, that can help improve knowledge and skills in creating simple and effective corn fertilization tools.
d. Lack of attention and support from the government or relevant institutions in the development of simple and effective corn fertilization tools, making it difficult for the community to access information and necessary materials.

1.3. Intention and Objectives

The intention of Institut Shanti Bhuana, represented by several lecturers from the Information Technology program, an educational and research institution with an initiative to advance the agricultural sector in Indonesia, is deeply concerned about the challenges faced by farmers in Desa Puteng, Teriak District, Bengkayang Regency regarding ineffective corn fertilization.**(Rizza et al., 2020)** In order to assist the community and improve the well-being of local farmers, Institut Shanti Bhuana feels the need to engage in community service by developing a training program for creating simple and effective corn fertilization tools.**(Fadwiwati & Tahir, 2013)** In this effort, Institut Shanti Bhuana aims to introduce an innovative method, namely the use of video tutorials, to enhance the effectiveness of the training and ensure that the knowledge and skills taught can be easily accessed by farmers.**(Rangkuti et al., 2021)**

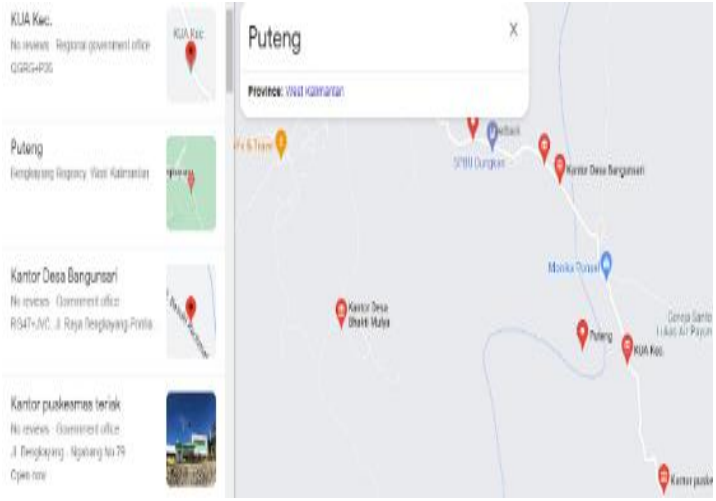
The objectives are as follows:

a. Enhance farmers' understanding of the importance of effective corn fertilization and its impact on agricultural productivity in Desa Puteng.
b. Teach farmers the techniques and steps for creating simple and effective corn fertilization tools through interactive and easily understandable training methods.
c. Reduce communication and language barriers in delivering instructions by utilizing video tutorials, allowing farmers to comprehend and follow each step clearly.
d. Encourage the adoption of best practices in corn fertilization through visual representations in video tutorials, enabling farmers to observe and practice proper techniques.
e. Improve accessibility and dissemination of agricultural information and technology in Desa Puteng and other remote farming communities in Bengkayang Regency.
f. Foster active participation of farmers in the training program, empowering them to develop the skills and knowledge necessary to enhance their own productivity and well-being.
g. Develop networks and collaborations among Institut Shanti Bhuana, farmers, and local government to strengthen agricultural development efforts in Desa Puteng.

Through the implementation of community service focused on enhancing the effectiveness of training in creating simple and effective corn fertilization tools using innovative video tutorials, the Institut Shanti Bhuana Community Service Team hopes to provide tangible benefits to farmers in Desa Puteng. It is expected that through this program, farmers can acquire the knowledge and skills needed to improve their agricultural productivity, as well as promote sustainable agricultural development and the well-being of the rural community in the area.**(Nurany et al., 2023)**

1.4. Location of Partners

The location of our partners is in Desa Puteng, Teriak District, Bengkayang Regency, 79214.



Source: google maps, 2023.

Figure 1. Location of the implementing partner.

2. THE METHOD USED

2.1. The methods employed are as follows

This community engagement method uses community-based participatory theory.**(Prasta, 202**1) Which is used to explain how the community participates in improving the effectiveness of Simple and Effective Corn Fertilizer Tool Making Training through Innovative Video Tutorials. This approach is highly relevant for evaluating and enhancing the effectiveness of this training. Several activities are carried out in this community engagement, including:

a. Identification of Stakeholders

In this stage, the engagement team will coordinate with the government and corn farmers in Puteng Village, conduct program socialization, and prepare equipment and materials. The initial coordination and socialization activities aim to ensure the implementation plan of the engagement as shown in figure 2.

Figure 2. Implementation Coordination of Community Service

b. Participant Engagement

The engagement team seeks direct input from corn farmers in Puteng Village regarding the training activities that will be carried out.

c. Problem and Challenge Identification

In this stage, the engagement team identifies the issues faced by corn farmers in Puteng Village.

d. Co-design of Training

The engagement team offers solutions to the issues faced by corn farmers, where the team conducts training and practical demonstrations based on previously prepared video tutorials.

e. Training Implementation

During the training, the engagement team plays the video tutorial, after which corn farmers are invited to practice how to make corn fertilizer tools based on the tutorial and are guided by the engagement team. A joint evaluation is conducted to determine whether the tools are suitable for use.

f. Data Collection

The engagement

team collects data from the beginning and after the training carried out with corn farmers in Puteng Village. Data collection techniques include direct interviews to obtain input from corn farmers regarding their challenges and the use of documentation such as photos and videos during this engagement.

g. Joint Analysis

After conducting the training, the engagement team, along with the training participants, discusses the results, including any changes that have occurred and whether the video tutorial has been helpful in improving the training's effectiveness.

h. Joint Action

Based on the analysis results, the engagement team, together with the training participants, identifies follow-up steps that need to be taken regarding the implementation of the video tutorial, which is the end product of the corn fertilizer tool. This is to ensure that the training participants become more skilled in its production and that it serves its purpose.

i. Periodic Evaluation

During the one-month period after the training, the engagement team holds meetings with the training participants to monitor the progress and effectiveness of using the corn fertilizer tool.

j. Reporting of Results

From the results of this engagement, the engagement team reports to the relevant institution's Community Service Program Implementation Unit in the form of result documents and presentations, as well as a final accountability report to the institution. For the general report, it includes Intellectual Property Rights (IPR) for the video tutorial and submission to a nationally accredited community engagement journal.

2.2.Implementation Stage

The form of the program to be carried out by the community service team is providing assistance to the farming community through methods such as screening video tutorial lectures, conducting training and mentoring sessions, and utilizing simulators.**(Ali & Naim, 2022)**The stages are as follows:

a. Initial Training:
   - Conducting an initial survey to identify the participants' needs and knowledge level.
   - Holding meetings with participants to explain the objectives and benefits of the training.
   - Introducing the concept and importance of creating simple and effective corn fertilization tools.
   - Providing basic knowledge on the techniques and materials required.

b. Video Tutorial Development:
   - Involving a team of experts to develop high-quality video tutorials on creating simple corn fertilization tools.
   - Ensuring that the video tutorials are presented in a clear, structured, and easily understandable manner for the participants.
   - Applying an engaging visual approach, demonstrating the steps in detail.
   - Including explanations of the theory and advantages of the created simple corn fertilization tools.

c. Intensive Training:
   - Conducting intensive training sessions using the developed video tutorials.
   - Ensuring that participants understand each step in creating simple corn fertilization tools.
   - Providing opportunities for participants to practice directly and ask questions.
   - Paying attention to the individual needs and abilities of participants in understanding the material.

d. Post-Training Support:
   - Providing support and guidance to participants after the training is completed.
   - Encouraging participants to implement the creation of simple corn fertilization tools in the field.

- Conducting field visits to monitor and provide feedback to participants.
- Holding evaluation meetings to assess the effectiveness of the training and determine the participants' achievements.

2.3. Supporting tool

Supporting tools of this community service are shown in table 2.

Table 2. supporting facilities and infrastructure

No	Item Name/Equipment	Quantity	Unit
1.	Laptop	1	Unit
2.	Internet	5	MB
3.	Android Phone	1	Unit
4.	Printer	1	Unit
5.	Power Outlet	1	Unit
6.	Pen	1	Piece
7.	A4 Paper	1	Ream
8.	Raw materials for corn fertilizer	6	Sets
9.	Training Building	1	Building
10	Motorcycle	1	Unit
11	LCD	1	Unit
12	Sound System	1	Unit
13	1m x 3m Banner	1	Sheet

3. DISCUSSION

3.1. Initial Activities

Activity schedule of this community service is shown in table 3.

Table 3. activity schedule

No	Date	Agenda
1	March 06, 2023	Handling recommendation from PPM destination
2	March 08, 2023	Managing partnership letter
3	March 20, 2023	Uploading proposal submission
4	March 30, 2023	Creating a contract with PRPM
5	April 01-07, 2023	Creating tutorial videos
6	April 20, 2023	Coordination with the Puteng village government
7	May 08, 2023	Conducting training for the community

The activities conducted in this phase are as follows:

a. On March 06, 2023, the team visited the Puteng Village government office with the aim of establishing relations and requesting recommendations as a partnership center for the community service program, which will include training on the creation of simple corn fertilizer tools using innovative video tutorials.

b. On March 08, 2023, the team proceeded to handle the partnership letter with Puteng Village. c. On March 30, 2023, the team created a contract with PRPM ISB.

d. From April 01-07, 2023, the team created video tutorials.

e. The community service team coordinated with the Puteng Village government again to determine the schedule and technical details of the training.

f. The training activity took place on May 08, 2023, at the multipurpose building in Puteng Village.

3.2. Core Activities

Conducting Training on the Creation of Simple and Effective Corn Fertilizer Tools through the Use of Innovative Video Tutorials. The training activities are as follows:

a. Opening
1) Opening speech by the Head of Puteng Village.
2) Introduction of the training team and participants.
3) Explanation of the objectives and benefits by the community service team.

b. Video Tutorial Screening
1) Participants are given access to watch the video tutorials.
2) The community service team monitors participants and provides explanations if any participants encounter difficulties in understanding the tutorial videos.

c. Material Discussion
1) The community service team leads a discussion on the materials covered in the video tutorials.
2) Participants are given the opportunity to ask questions and clarify any unclear points.

d. Practical Demonstration of Corn Fertilizer Tool Creation
1) The community service team demonstrates the practical creation of simple and effective corn fertilizer tools.
2) Participants are asked to follow and directly practice the tool creation.

e. Independent Practice
1) Participants are given the opportunity to independently practice creating the simple and effective corn fertilizer tools.
2) The community service team is ready to assist participants who encounter difficulties or need guidance.

f. Evaluation

The fundamental reasons for the evaluation are as follows:

1) Training Objectives: The training was well-targeted and achieved its main goal, with the participants being corn farmers who faced the challenge of limited knowledge in creating efficient corn fertilizer tools. Through this training, participants felt assisted and became proficient in independently creating efficient corn fertilizer tools. Monitoring was conducted for a month after the training.

2) Participant Satisfaction: Participants felt assisted and satisfied after completing the training. This is evident from their practical results, where participants can independently create efficient corn fertilizer tools.
3) Understanding and Retention of Material: Based on the shared practical results, participants are skilled in creating corn fertilizer tools independently, as well as understanding their usage.
4) Changes in Behavior or Performance: Through post-training monitoring, participants felt assisted by the corn fertilizer tools they created themselves, as they are more efficient and save time, effort, and materials in the corn farming process.
5) Pre-Post Evaluation: Following the training on creating corn fertilizer tools using video tutorials, participants have a broader and more open understanding, recognizing that human resources are essential and a primary asset in corn farming. Before the training, participants thought that farming required only hard work.
6) Ongoing Monitoring and Feedback: The engagement team and participants collaborate continuously after the training, with the engagement team monitoring, providing motivation, knowledge, and solutions if participants encounter any issues.
7) Cost-Benefit Evaluation: Considering the enthusiasm of the participants and the benefits they gained, this training is cost-effective for the expenses incurred.

g. Closing
1) Expression of gratitude from the Head of Puteng Village.
2) Award presentation for participants who successfully completed the training and were able to create the simple and effective corn fertilizer tools.
3) Closing remarks from the trainer and the Head of Puteng Village.

Figure 3. Training Activities, and Evaluation

3.3. Successes and Failures

Following success and failures of this community service:

a. Successes

1) Increased Farmer Awareness: There has been an increase in awareness among farmers in Puteng Village about the importance of effective corn fertilization. They acknowledge that the use of effective corn fertilizer tools can improve crop yields and corn plant quality.
2) Adoption of Innovative Methods: The use of video tutorials as an innovative learning method has successfully provided a clearer and more detailed understanding of the creation of simple and effective corn fertilizer tools. This addresses communication and comprehension challenges often encountered in conventional training.
3) Enhanced Skills: Training participants have successfully improved their skills in creating simple and effective corn fertilizer tools. They can apply the knowledge acquired through video tutorials effectively and produce efficient fertilizer tools.
4) Increased Harvest Yields: The use of effective corn fertilizer tools has had a positive impact on corn harvest yields. Corn plants grow stronger and result in better harvest quality, benefiting the local economy and community well-being.
5) Knowledge Dissemination: The community in Puteng Village is capable of sharing their knowledge and experiences in creating effective corn fertilizer tools with other farming communities, especially in remote areas. This contributes to overall agricultural development in Bengkayang Regency.

b. Failures

1) Limited Access to Resources: Some farmers in remote areas may still face difficulties in accessing the necessary resources for creating simple corn fertilizer tools. While they understand the concept, resource limitations may hinder implementation.
2) Government Hurdles: Failures on the part of the government or related institutions to provide adequate support for the development of simple and effective corn fertilizer tools can also be a hindrance to the community. This makes it difficult for the people in Puteng Village to access the required information and materials.
3) Limited Participation: Despite efforts to encourage active participation by corn farmers in the training program, some farmers may still be reluctant or have limitations in participating in the program. This can be a barrier to the dissemination of knowledge and the use of corn fertilizer tools

4. CONCLUSIONS

In conclusion, this community engagement project aimed to enhance the effectiveness of training in crafting a simple and efficient corn fertilizer tool by utilizing innovative video tutorials. Located in the rural region of Desa Puteng, Teriak District, Bengkayang Regency, the majority of its population relies on agriculture, particularly corn cultivation. Corn is a staple crop and the economic backbone of the community.The project successfully achieved its objectives and brought about significant positive outcomes. Firstly, there was an increase in awareness among the local farmers about the importance of effective corn fertilization. They acknowledged that the use of efficient corn fertilizer tools can enhance crop yields and quality. Secondly, the innovative video tutorial method provided a clearer and more detailed understanding of crafting simple and effective corn fertilizer tools. It addressed communication and comprehension issues often faced in conventional training. hirdly, participating farmers improved their skills in crafting these tools. They could effectively apply the knowledge gained from the video tutorials to produce efficient corn fertilizer tools. Moreover, the use of these efficient tools resulted in better corn yields, benefiting the local economy and the well-being of the community. Additionally, the local community was capable of sharing their knowledge

and experiences regarding the crafting of efficient corn fertilizer tools with fellow farmers, especially in remote areas. This contribution has had a positive impact on overall agricultural development in Bengkayang Regency. Despite the project's success, there were certain challenges. Some farmers in remote areas faced difficulties accessing the required materials for crafting the tools due to limited resources. Government or related institutions' limited support hindered community access to necessary information and resources. Moreover, despite efforts to encourage active participation, some corn farmers may still be hesitant or face limitations in joining the program, which can obstruct the dissemination of knowledge and the use of corn fertilizer tools. In conclusion, this initiative significantly improved corn farming in Desa Puteng, contributing to the economic development of the region. The use of innovative video tutorials effectively educated farmers on crafting simple and efficient corn fertilizer tools, which enhanced their crop production and facilitated the sharing of knowledge and experiences within the community.

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