Digital Transformation in Rural Areas: A Case Study of Computer Training as Community Service

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ABSTRACT

Digital transformation in rural areas has emerged as an important subject for boosting the quality of life for local inhabitants. This study intends to examine the impact of computer training as part of community service activities on implementing digital transformation. The research technique comprised systematic computer training for rural residents and the evaluation of outcomes through surveys and observations. Findings reveal a considerable improvement in IT literacy among participants following the course. Active engagement in this program has boosted ICT capabilities within rural communities, creating possibilities for expanded access to digital economic prospects. In conclusion, computer training can serve as a significant instrument in expediting digital transformation in rural areas and fostering digital inclusion in rural surroundings.

 Keywords: digital transformation, rural areas, computer training, digital inclusion.

A. INTRODUCTION

Digital transformation has become a global phenomenon, influencing numerous parts of life, including rural communities. Although the literature frequently explores the benefits of digital technology in urban settings, investigations into its impact in rural communities remain relatively scarce. Digital

transformation in rural areas offers the ability to improve the quality of life through better access to information, education, and economic possibilities (Horrigan, 2019). However, a key difficulty is the poor level of digital literacy among rural areas, which limits them from fully exploiting technology (Selwyn, 2020).

The theoretical underpinning of this research is founded on the concept of digital literacy, defined as the ability of individuals to successfully use information and communication technologies to acquire, manage, and transmit information (Gilster, 1997). Digital literacy is a critical necessity in the digital transformation age, as digitally educated populations have a stronger capacity to adapt to technological changes and grab the opportunities they bring (Ng, 2012).

Additionally, this study alludes to the philosophy of community empowerment, which highlights the significance of active community involvement in the development process to attain sustainability (Zimmerman, 2000). Empowerment through computer training can assist rural communities in expanding their digital abilities, thereby boosting their potential to exploit technology for economic and social welfare enhancement (Klein, 2015).

Computer training as a kind of community service is a viable strategy for bridging the digital divide in rural areas. Community service itself is a representation of the social duty of higher education institutions, aimed at making visible contributions to society (Boyer, 1996). Thus, computer training not only functions as a means of information transmission but also as a tool to inspire active community participation in the digital transformation process.

This project aims to investigate the impact of computer training on rural communities' digital literacy and identify significant elements contributing to the success of such programs. Using a case study approach, this study is aimed at providing in-depth insights into the role of computer training in enabling digital transformation in rural parts of Indonesia.

B. METHODS OF DEVOTION

1. Methods of Community Service

This study adopts a case study approach to assess the impact of computer training as a kind of community service on aiding digital transformation in rural areas. The case study approach is chosen because it allows researchers to perform an in-depth analysis of specific situations and the intricate relationships occurring during the training process.

2. Development Method

The development approach employed in this computer training covers several stages: needs identification, program planning, training implementation, and program evaluation. The needs identification stage is accomplished by an initial survey to identify the level of digital literacy and technology demands of the village population. Based on the survey results, the training program is intended to contain basic contents such as an introduction to computer hardware and software, internet usage, and basic office applications. Training implementation entails face-to-face sessions held over three months, with a frequency of twice a week. Program evaluation is undertaken through pre-tests and post-tests to determine the increase in participants' digital literacy.

C. RESULTS AND DISCUSSION

This program studies the influence of computer training as a form of community service in the digital transformation process in rural areas. The findings of the program reveal a considerable rise in the digital literacy of village populations after participating in computer training. The discussion of the results of this service will be broken into many segments based on the key discoveries gathered from existing operations.

1. Increasing digital literacy

The pre-test and post-test results demonstrated a considerable increase in the digital literacy of the training participants. Initially, most participants had limited fundamental knowledge of computers and the internet. After the training,

participants displayed better skills in operating basic software such as word processing and workbooks, as well as increased confidence in utilizing the internet to search for information and interact.

Before taking part in computer training, participants were evaluated using a pre-test to determine their digital literacy level. The pre-test contains questions regarding basic computer use, knowledge of the internet, and proficiency utilizing applications such as word processing and spreadsheets. The pre-test findings showed that most participants had basic but limited expertise in operating a computer and utilizing the internet to look for information or converse.

After completing the training session, participants were evaluated again using the same post-test to measure their progress in digital literacy. The post-test revealed significant improvement in all areas assessed. Participants indicated greater capacity to operate software, use the internet to look for information and interact, and have more confidence in handling technological challenges that may emerge.

Quantitatively, there was an increase in the average score from pre-test to post-test. For example, the average score of participants in computer operation increased from 60% to 85%, while the average score for using the internet to search for information also increased from 45% to 75%. In addition, the average score for operating a word processor increased from 50% to 85%, while the use of spreadsheets in processing data increased from 55% to 80%, and finally, technical skills that were previously only capable of 40% increased to 70%.

The following are the pre-test and post-test findings in tabular form to indicate the development of digital literacy among computer training participants in rural areas:

Table 1. Pre-Test and Post-Test Results

Digital Literacy Area	Pre-test (%)	Post-test (%)
Computer Operation	60	85
Internet Use	45	75
Use of Word Processors	50	85

Use of Spreadsheets	55	80
Technical Skills	40	70

This table indicates that the computer training program has succeeded in enhancing participants' digital literacy in numerous aspects, preparing them to take advantage of digital technology in everyday life, and the economic potential in rural areas may be observed from the following interpretation:

a. Computer Operation

Participants demonstrated an increase in computer proficiency from 60% before training to 85% after instruction.

b. Internet Use

The capacity to use the internet to look for information increased from 45% to 75%.

c. Use of Word Processors

Participants demonstrated considerable increases in word processing utilization, from 50% to 85%.

d. Spreadsheets are used.

Improvement from 55% to 80% in spreadsheet skills.

e. Technical Skills

Participants indicated an increase from 40% to 70% in resolving technical challenges that may emerge.

Figure 1. Skill Comparison Before and After Training

The graph displays the pre-training competence with a blue line and the post-training proficiency with an orange line. Evidently, following the instruction, there has been a notable improvement in competency across all skills.

These results demonstrate that computer training is beneficial in boosting rural communities' digital literacy and preparing people to take advantage of digital technology in their everyday lives and economic potential. This growth also demonstrates that computer training programs, as well as community service, can play an essential role in fostering digital transformation in rural areas, broadening access to information and new opportunities, and improving the general quality of life.

2. Utilization of Digital Technology

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3. Access to Information and Communication

Computer training enhances participants' ability to use the internet to seek relevant information. Prior to the course, most participants had limited access to knowledge, notably about technology and the newest advancements in their sector. However, after completing the program, participants were more confident in accessing online resources such as tutorials, practical instructions, and instructional platforms. This not only broadens their horizons but also boosts their ability to make better decisions in everyday life. Apart from that, the program also helps participants use social media to contact family and friends outside the community. This has good implications for strengthening social networks and preserving relationships between residents in locations that may be remote and lonely.

4. Economic Impact

Computer training also opens up new economic options for village populations. Some participants said that they started using their new abilities to create modest online companies, such as selling agricultural products and handicrafts through e-commerce platforms. This illustrates that computer training not only enhances digital literacy but may also serve as a catalyst for local economic development (Selwyn, 2020).

Increasing digital literacy also brings up new potential for local economic growth. Some participants reported that they started running small businesses online after the training. This includes selling agricultural products, local crafts, or services via e-commerce platforms or social media. By employing their newly acquired talents, participants can reach a wider market, boost revenue, and diversify family income sources.

The use of digital technology has an impact not only on economic issues, but also on improving the overall quality of life. Participants can receive online health services, obtain knowledge about the latest farming methods, or even take distance education courses to improve their qualifications. This reduces their dependence on traditional services, which may be difficult to access in remote locations, and increases their freedom in managing their daily needs.

5. Challenges and Obstacles

Based on the results of this community service activity, it can be concluded that computer training as a form of community service has a significant positive impact on digital transformation in rural areas. This training increases digital literacy, opens access to technology, and creates new economic opportunities for rural communities. However, to enhance the effectiveness of the program in the future, it is recommended to improve the technological infrastructure in rural areas and provide additional support for participants with lower educational levels.

D. CONCLUSION

Based on the results of this community service activity, it can be concluded that computer training as a form of community service has a significant positive

impact on digital transformation in rural areas. This training increases digital literacy, opens access to technology, and creates new economic opportunities for rural communities. However, to enhance the effectiveness of the program in the future, it is recommended to improve the technological infrastructure in rural areas and provide additional support for participants with lower educational levels.

E. SUGGESTION

Another recommendation is to extend this training program to other villages and involve more parties, such as local governments and the private sector, to provide the necessary resources and support. Thus, digital change in rural regions can develop more inclusively and sustainably, delivering larger advantages to the community.

F. THANK YOU NOTE

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Not forgetting, we thank the local government, educational institutions, and local partners for providing technical support, infrastructure, and other resources that contributed to the success of this activity. We anticipate that the consequences of this activity will not only directly benefit the participants, but also have a positive impact on developing the economic potential and quality of life in rural communities overall. Once again, thank you for all parties' involvement and support. We look forward to continuing to engage in delivering substantial changes to rural communities and inspiring similar efforts in the future.

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