

Agriculturally based Equivalent Education: Insights on Nonformal Education Human Resources and Program Quality

Safuri Musa ^{1*}, Yusuf Muhyiddin ¹, Sri Nurhayati ²

¹ Department of Community Education, Faculty of Education, Universitas Singaperbangsa Karawang, Sukamakmur, Indonesia.

² Community Education Program, Faculty of Education, Institut Keguruan dan Ilmu Pendidikan Siliwangi, Cimahi, Indonesia.

Received 05 September 2022; Revised 15 November 2022; Accepted 22 November 2022; Published 01 December 2022

Abstract

This study provides an overview of the role of nonformal education human resources in supporting the quality and delivery of agriculturally based equivalent education programs aimed at enhancing adult learner competences in modernized agriculture in Karawang City. The objectives of the study were to assess the condition of the program's implementation, analyze the quality of human resources, identify gaps and challenges, and propose improvements. The study employed a quantitative research approach, utilizing descriptive analysis and documentation strategies. A descriptive statistical analysis was conducted to comprehensively examine the collected data. The findings reveal several important insights. Firstly, educators involved in the program possess the necessary experience and skills, indicating their competence in guiding participants. Secondly, learner participation in equivalent education seminars contributes to the improvement of subject-specific competencies, suggesting the effectiveness of hands-on learning approaches. However, there is a shortage of teaching staff in some institutions, which hampers performance and service quality. Lastly, there is a significant gap between student participation and achievement targets, emphasizing the need for increased support and resources to bridge this disparity. The novelty of this study lies in its focus on nonformal education human resources and their impact on the quality and effectiveness of agriculturally based equivalent education programs. The findings highlight the importance of skilled educators, the value of equivalent education seminars, and the need for adequate staffing and support to enhance student achievement. The study contributes to the existing literature by providing insights and recommendations to improve the implementation and outcomes of agriculturally-based equivalent education programs, particularly in Indonesia.

Keywords: Agriculture; Service Learning; Service Learning in Agriculture; Nonformal Education; Human Resources; Equivalent Education; Adult Learners; Agricultural-Based Program.

1. Introduction

The concept and role of non-formal adult education today have undergone a fundamental change [1], not only as an educational service carried out outside the school system, as stated by Coombs et al. [2], but also as an educational service that liberates learners [3] by helping them to fulfill their learning needs in accordance with their life demands depending on the prevailing situation, both as individuals, members of society, and citizens at the national level and also as global citizens. According to Rogers (2014) [4], non-formal education is an educational service that is very flexible both in terms of curriculum, learning methods, time, learning involvement, and assessment of learning progress. Non-formal

* Corresponding author: safuri@unsika.ac.id

 <http://dx.doi.org/10.28991/HEF-2022-03-04-04>

➤ This is an open access article under the CC-BY license (<https://creativecommons.org/licenses/by/4.0/>).

© Authors retain all copyrights.

education in a broader perspective involves regular and directed communication designed in such a way that a person or group of people is able to obtain knowledge, training, and advice according to their age and needs [5].

The purpose of non-formal education in Indonesia, according to Sudjana (2000) [6] is for knowledge enhancement, improvement of individual attitudes, abilities, and leads to value addition, hence enabling a person or group to engage efficiently and effectively in all life tasks. Quality and improved service delivery are two concepts that are mostly used concurrently. They are based on the belief that every nation has the opportunity to compete positively and has the responsibility to find solutions to every problem faced from a holistic angle, whether related to the economy, social, culture, or other aspects of life. This is the work of competent human resources. Nonformal-adult education aims to empower the country's human resources. In Indonesia, several educational services have been carried out to improve the quality of the people's living standard through educational services outside the school system. Educational activities have always been conducted intentionally, regularly, and within a certain period of time in a planned and measurable manner with the aim of stimulating human potential.

This makes agriculturally based Equivalent Education in Indonesia an important subsector in continuous human resources development for the agriculture field. Because equivalent education programs are conducted at a broader spectrum through Out-of-School life skills activities. Indonesia's education concept is supported by the constitution and Policy Law No. 20 of 2003 concerning the National Education System, which is specifically described in Article 26 paragraph (3). It has been explained that equality education is a non-formal education program that provides general education equivalents where Primary School (SD) is equivalent to Madrasah Ibtidaiyah (MI), named Package A; Junior High School (SMP) is equivalent to Madrasah Tsanawiyah (MT), named Package B; and then Senior High School (SMA) is equivalent to Madrasah Aliyah (MA), which is named Package C. Package C, the equivalence of senior high school, is intended for students who come from disadvantaged communities and have higher chances of dropping out of school. Since students enrolled at this level are considered to be of productive age, the education given at this level aims to improve students' practical knowledge and life skills. This education level also has programs that cater to community members who may have dropped out of school earlier but now need an education that could be essential to improving their living standards and help them further understand science and technology concepts.

The authors analyzed the agriculturally based equivalent education program due to the assumption that the most valuable capital and wealth of every human activity are human resources [7]. Human beings, as the most important component in all activities, are thoroughly examined in relation to the vital role they play [8] in agriculturally based learning activities. In other words, human resources have always been the subject and object of development because they are the first and most important aspect of any development process [9]. The efficient implementation of non-formal education activities and programs cannot run without the support of quality human resources [10], as educators and facilitators in the learning activities.

1.1. The basis for Agriculturally based Equivalent Education: Indonesia's Perspective

According to the available records, there has been a distinct directorate in operation for several years that has been entrusted with the responsibility of managing the development initiatives pertaining to human resources in nonformal education. It was previously known as the Directorate for the Development of Educators and Education Personnel for Early Childhood, which was later changed to Nonformal and Informal Education under the Directorate General of Education [11]. This directorate was previously under the Directorate General of Quality Improvement of Educators and Education Personnel, and finally the name was changed to the Directorate General of Early Childhood, Nonformal, and Informal Education [12]. The responsibility of this directorate is mainly to formulate, coordinate, and oversee policy implementation as well as facilitate the implementation of technical standards in the fields of formal and nonformal education, education for early childhood, equivalent education and training, and community education [13].

Ensuring the presence of competent human resources to facilitate equal learning opportunities and implementing agriculture-centered equivalent education programs [14] are crucial factors in making nonformal education a comprehensive human development agenda within the national education system. This equivalent education program shares the same objectives as the formal education sector. The educational system in Indonesia aims to produce skilled individuals capable of providing exemplary services to the community, particularly those who are not targeted by formal education [15, 16]. This clearly highlights the purpose of nonformal education, which is to expand the provision of high-quality and suitable services to individuals with limited resources, geographical constraints, and other unknown factors that hinder their educational progress [17]. Consequently, nonformal education must continuously evolve in response to the emerging needs of society resulting from rapid advancements and changes in science, technology, and industrial requirements, as well as shifting cultural dynamics within both physical and virtual communities.

1.2. Quality and Its Relevance in Providing Equivalent Education Services

The quality and relevance of providing equivalent education is still a hot topic of discussion within Indonesia's national education system [18]. This is due to the fact that the current education system does not produce ready-to-use

outputs, so many graduates from the formal education program are not easily absorbed by the world of work because their abilities are still limited [19]. This calls for further training through nonformal education initiatives, which include equivalent education training activities to prepare those who join the field of work with limited education or a different educational background. However, though nonformal equivalent education programs are good for human resources, experience shows that many graduates of nonformal education institutions do not gain the required training in life skills [20], and they at times have limited knowledge and understand less regarding new concepts because of the poor human resources that train them. This signifies the need for quality human resources for better equivalent education programs. With quality planning, the process of establishing the critical quality requirements for an equivalence education program and choosing how to meet established goals can be achieved [21]. The purpose of quality planning is to identify the activities that will be carried out to produce a product or service while remaining focused on the quality anticipated by stakeholders.

Quality planning determines whether a set quality standard can be applied to a program and if it can be implemented appropriately [22]. Quality is reflected in service delivery or the product produced. When the service or product meets or exceeds the needs and expectations of its clients, it is taken as a quality service or product provided by an institution [23]. The purpose of quality planning is to improve work quality, productivity, and efficiency [24]. Quality is a subjective and relative phrase that can be defined in a number of ways, with each definition supported by equally strong arguments [25]. Quality can be defined as the number of product or service attributes that meet the needs of consumers or customers. Quantitative and qualitative quality attributes can be measured. In education, quality is a successful learning process that is fun and provides enjoyment in the form of abilities possessed by students. The reality on the ground obtained through this study shows that the qualifications and abilities of equivalence education tutors in Karawang Regency vary; for instance, there are some non-teaching staff that are involved in teaching various subjects but with limited skills. This has a negative influence on the quality of equivalent education programs. Based on the above background, this study explores the agriculturally-based equivalent education program conducted in Karawang district. Second, it seeks to obtain a description that better explains the availability of human resources for an agriculturally-based equivalent education program. Lastly, the study aims to understand the quality of human resources for an agriculturally based equivalent education program.

By conducting research on the assessment of human resources in nonformal education, which play a vital role in enhancing the service and quality of agricultural-focused educational programs, a description of the quantity and quality of nonformal education's human resources could be a valuable reference for enhancing and expanding the human resources dedicated to equivalent education. Consequently, it is anticipated that enhancing the quality of human resources, particularly in Karawang Regency in Indonesia, could lead to improvement in the sector.

2. Literature Review

To enhance the skills and competencies of educators and education personnel, it is necessary to ensure convenient access and a fair distribution of educational opportunities. The government should examine current data to gather accurate information that can guide the prioritization of efforts to enhance the qualifications and competencies of human resources in the education sector. Relevant studies are presented that address topics such as service delivery, nonformal education, human resources, equivalent education, adult learning, and agriculturally based knowledge enhancement.

2.1. Agriculturally Based Equivalent Education

Based on the existing research on agriculturally based or farm-based education, it has been noted that such learning activities are implemented in numerous countries worldwide due to their significant role in human resource knowledge enhancement [26]. Typically, these agriculturally based education activities are mostly conceptualized and designed as hands-on practical vocational programs [27]. However, while agricultural institutions are the primary source of agriculturally engaged teachers in most countries [26], in Indonesia, particularly in Karawang districts, the majority of teachers involved in agriculturally based education lack agricultural backgrounds, both in practice and theory. Consequently, their understanding of the professional expertise required for engaging in agriculture is limited.

Nevertheless, scholars have consistently emphasized that agriculture is a prevalent practice in developing countries [28]. In Indonesia, agriculture holds a distinctive position among various occupations due to its impact on individual values, particularly affecting farming families [29]. Consequently, a comprehensive analysis of agricultural education becomes highly significant [30], as its influence extends beyond individuals studying agriculture to encompass various segments of society, including children, youth, and adults. Therefore, conducting a thorough examination of nonformal education in agriculture and the role of human resources in facilitating service learning becomes paramount to enhancing overall human quality.

Larson & Duram [30] noted that service education in agriculture plays a crucial role in improving competencies in agriculture as it engages farmers in practical activities and facilitates the acquisition of new experiences. Hands-on learning experiences are particularly effective in enhancing agricultural education within communities, especially

among farming groups. This approach is further strengthened when integrated with the concept of service-learning, which emphasizes addressing real-life challenges and finding solutions [31]. By implementing nonformal education activities that focus on agriculture, encompassing various demographic groups and age ranges, service-learning programs can be tailored to meet the specific skills required within a given timeframe [32].

2.2. Service Learning in Agriculture

Studies have revealed that agriculture is deeply rooted in service learning. Service learning is a social pedagogical approach, which encourages the combination of service and educational activities to enhance human skills, indirectly highlighting the importance of equivalent education programs. While there are various institutions that offer agricultural programs incorporating a service-learning approach, the implementation details are not clearly defined. The uniqueness of service learning lies in its emphasis on the learning experience, which serves as the foundation for active learner participation and serves as a valuable source of knowledge acquisition [27, 33, 34].

Service learning, as a unique approach in community education, effectively integrates both theoretical and practical knowledge related to agriculture-related issues within society [35]. Service learning aligns itself with the existing needs of the community, making it a unique problem-solving method for learning [36]. In the context of agriculturally based equivalent education, service learning holds significant relevance due to its emphasis on community engagement and the integration of theory and practice. By incorporating service learning into equivalent education activities, learners are motivated to actively participate and simultaneously acquire new skills within group settings, facilitating the acquisition of fresh knowledge and paving the way for a promising future [37].

The significance of service learning in agriculture has become increasingly apparent as even schools and colleges specializing in agriculture are calling for changes in teaching and learning approaches [38]. In the context of agriculturally based equivalent education, service learning plays a crucial role by integrating community service with rigorous educational activities. This integration enhances students' critical thinking abilities and problem solving within the community. Service learning aligns well with equivalent education as it promotes hands-on learning and emphasizes direct problem-solving, leading to a deeper understanding of the content and materials presented during the learning process, as noted by Eyler & Giles (1999) [39]. As a result, it leads to a deeper understanding of the content and material presented in any given learning activity, thereby contributing to improved abilities, which lead to better-quality in-service delivery within an equivalent education agriculture-based program. Figure 1 illustrates the service-learning concept.



Figure 1. Illustration of Service-Learning Concept

As depicted in Figure 1, service learning (SL) in an equivalent education program focused on agriculture involves a structured implementation process that includes the following components:

- 1. Preparation:** This phase entails establishing clear expectations, setting goals and objectives to be achieved, determining the schedule and participants involved, and sharing the content and materials to be learned or taught.
- 2. Action:** In this phase, communication takes place regarding the program, its objectives and content, providing training and orientation for participants, discussing protocols for emergency situations, and ensuring accountability through better supervision and monitoring.

Essentially, the process of service learning in an agriculture-based equivalent education program follows a systematic approach, encompassing preparatory stages and an action phase that prioritizes effective communication, participant training, and maintaining accountability through proper supervision and monitoring. There is reflection, which

encourages the exchange of ideas, active engagement, and meaningful discussions. It is during this phase that participants share their individual experiences, which serve as valuable sources of learning within the program.

The final phase is evaluation, which basically involves gathering feedback from learners. In this stage, participants are encouraged to provide their opinions on the agriculture-based equivalent education program, assess whether the program's goals have been achieved, and evaluate the usefulness of the services provided to both the participants and the broader community. Moreover, active participation in the discussion is expected from the participants to identify areas where program improvements may be needed.

3. Research Method

For this study, a quantitative research approach was used, employing analytical descriptive methods and documentation strategies. The descriptive analysis method was employed to provide an initial description of the elements under investigation, followed by evaluation and comparison to draw conclusions. Descriptive methods serve as strategies or techniques used to comprehensively describe a problem, enabling analysis and clarification for accurate conclusions [40]. In this study, documentation analysis was one of the techniques employed to gather data, including perspectives [41], regarding the human resources involved in an agriculturally based equivalent education program. The study took place in Karawang District, which is recognized as a significant rice-growing area in Indonesia [42]. Figure 2 illustrates the location of Karawang District in Indonesia.

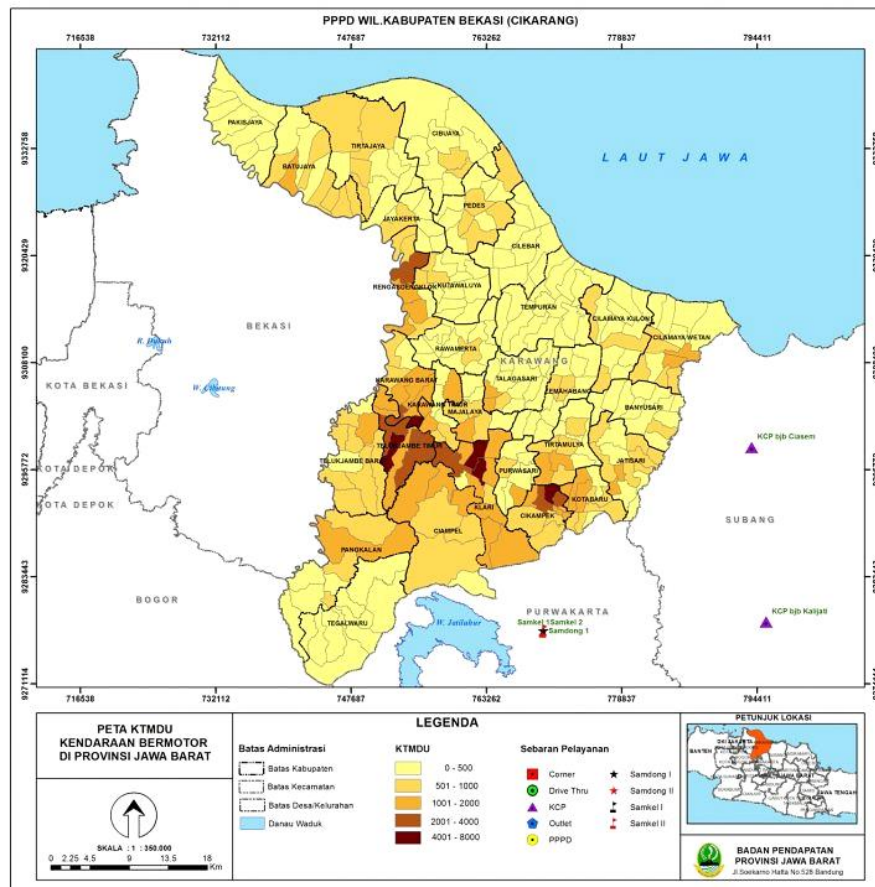


Figure 2. Map Showing the Geographical Boundary of Karawang

Karawang District, situated in the northern part of West Java Province, is geographically positioned between Longitude 107° 02' – 107° 40' East and Latitude 5° 56' – 6° 34' South. It shares territorial boundaries with several other districts within West Java Province, to the north, it is bordered by the Java Sea. In the east, it is adjacent to Subang District, while in the southeast, it shares a border with Purwakarta District. The southern boundary encompasses Bogor City, Bogor District, and Cianjur District. On the western side, Karawang District is bordered by Bekasi City. The district covers a land area of 1,753.27 square kilometers, accounting for approximately 3.73 percent of the total land coverage of West Java Province [42].

Indonesia, being an agricultural country, has specific regions renowned for their farming activities. Karawang, located in the West Java Province, is one such region known for its fertile land and is often considered the food basket of the area. Karawang is prominently recognized as a region where rice cultivation thrives within the province [42, 43].

The focus of this study was on nonformal education human resources who serve as support staff in the agriculture-based equivalent education program. This specifically included tutors/educators, administrators, and learners associated with the program. To collect data, a combination of field observations, structured interviews, documentation studies, and questionnaires were utilized. These data collection tools were of mixed nature, aimed at exploring the quality of services provided by the equivalent education human resources within the agricultural sub-district of Jatisari, located in Karawang District, Indonesia.

3.1. Data Analysis

Descriptive statistical analysis was employed as the chosen method of statistical analysis in this research. The present study adopted a descriptive data analysis approach, which is akin to the typical analysis conducted for a comprehensive, in-depth examination of the data [44]. Consequently, each dataset underwent a thorough examination to ensure its relevance in addressing the research question. In this study, descriptive analysis was utilized as a straightforward method to facilitate a clear understanding of the equivalent education program in Jatisari, Karawang. This was achieved through the presentation of illustrative tables and graphs. The study also conducted a descriptive analysis of the human resources involved in the equivalent education program in Karawang. To calculate the results derived from the data, the researcher applied a percentage formula proposed by Arikunto (2002) [45]. While this study, like any other, aimed to provide a solution to an existing problem, it is important to acknowledge that limitations may arise in terms of explanation, review, and exploration of the findings. With this in mind, the authors focused on addressing any gaps and avoiding potential loopholes in the study.

4. Results and Discussion

This section presents the results of the study based on field discoveries and data analysis. The study focused on analyzing nonformal education human resources and their role in supporting the agricultural-based equivalent education program in the Jatisari sub-district of Karawang District, Indonesia. The findings obtained from the field research were utilized to construct an explanation of the results. These results are presented in table format and provide a brief overview of the analysis conducted on the nonformal education human resources used to enhance the services and quality of agriculture-based equivalent education programs in the Jatisari sub-district of Karawang District, Indonesia.

4.1. The Agricultural-Based Equivalent Education Program in Jatisari Sub-District

The primary focus of this study is to enhance human resource knowledge. However, prior to conducting any examination, the researchers first examined the educational background of the human resources involved in the agriculture-based equivalent education program in Jatisari, Karawang District. Table 1 presents the educational levels of the program's staff members.

Table 1. Educational Background of Human Resources

No. Respondents	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Total
All Respondents Data Summarised	108	81	94	94	92	80	73	
	96%	72%	83%	83%	82%	70%	65%	619
	3.86	2.89	3.36	3.36	3.28	2.86	2.61	

Based on the summarized results presented in Table 1, it is evident that the majority of educators in the agriculturally based equivalent education program have the necessary experience, accounting for approximately 96% of the staff. This indicates that most tutors or educators possess the required skills to effectively guide participants within the program. Furthermore, specific findings indicate that 72% of the respondents have worked for more than five years in various educational institutions, indicating their active teaching experience. This accumulated experience contributes to their competence in both theory and practice, aligning with the principles emphasized by service learning in agriculture, as noted by Henigson (2020) [37].

In terms of subject-specific competencies, the results show that 83% of the educators have the basic competencies required to conduct the program effectively. Additionally, learner participation in seminar activities led to competency improvement, up to 82%. This suggests that equivalent education seminars contribute to enhancing competencies compared to educators who solely rely on formal training programs organized by agricultural education institutions. This could be attributed to the fact that service learning promotes active involvement and practical participation in contrast to the traditional teaching approach that primarily relies on lectures and offers limited learner engagement [27, 33, 34]. Service learning, which encourages hands-on participation, may explain this difference in outcomes compared to traditional lecture-based teaching methods.

Regarding the availability of educators within the agriculture-based equivalent education institutions, the percentage score reached 70%, indicating that some institutions still face a shortage of teaching staff. This inadequacy in staff

numbers leads to decreased performance and service quality in the affected institutions. The study also reveals that the age range of facilitators in these institutions was from 25 to 35 years, making 65% of the teaching staff of the required productive age, which demonstrates their ability to fulfill their professional duties.

4.2. Learning Participants in the Agriculturally Based Equivalent Education Institution

For an educational institution to be considered as such, the presence of students is an essential element, and their quantity holds significance. In the context of the agriculturally based equivalent education program, individuals taking part are referred to as students, but in this study, we will refer to them as learners or participants in the learning process. Table 2 presents the count of participating learners involved in the agriculturally based equivalent education program at the Jatisari agriculture center.

Table 2. Number of Learners Participating in the Agriculturally based Equivalent Education Program at Jatisari

No.	Respondents	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Total
1	WN	2	2	3	3	3	3	2	18
2	EN	3	3	3	3	3	3	3	21
3	AN	2	1	4	2	4	4	3	18
4	AS	2	2	3	4	2	2	2	17
5	WK	3	4	4	4	4	3	2	20
6	DR	3	3	2	2	4	3	2	19
7	AAA	2	2	3	3	2	3	2	17
8	YH	3	2	3	3	3	2	3	19
9	SR	2	2	3	3	3	3	2	18
10	DS	3	3	3	2	3	3	3	20
11	DSS	3	2	2	2	2	2	3	16
12	TF	2	3	3	3	2	2	2	17
13	EM	3	2	3	3	3	2	3	19
14	AY	2	3	4	3	3	3	3	21
15	OS	3	2	3	2	3	2	3	16
16	TS	1	2	3	3	2	2	2	12
17	PY	2	2	3	2	3	2	2	16
18	NAM	2	2	3	2	2	2	2	16
19	ASS	2	2	3	3	2	2	2	16
20	KW	2	2	3	4	3	3	3	20
21	DM	4	2	4	2	4	4	4	24
22	ND	2	2	4	3	2	4	2	16
23	IN	3	2	3	3	3	3	3	20
24	ABK	3	4	3	4	3	3	2	22
25	AS	4	2	4	3	4	3	3	23
26	SU	2	3	3	4	3	2	3	17
27	EN	3	2	4	3	4	4	3	23
28	AMR	3	3	3	4	3	3	3	22
Total		71	66	89	82	82	77	72	523
%		63%	58%	79%	73%	73%	68%	64%	

The information provided in Table 2 demonstrates the current state of students' human resources competencies in relation to their prior experience before joining the program. The data reveals that 63% of the respondents lack experience in managing agriculture. Consequently, their participation in this agricultural education program is necessary to improve their competencies and expand their knowledge in the field of agriculture. However, students face various challenges throughout the learning process. These challenges were identified during the field study, where some respondents reported difficulties in comprehending and learning new concepts, as well as handling special cases or practical projects, resulting in a 58% rate. The present study, supported by existing literature, suggests that employing a group learning approach with the assistance of service-learning can address this issue. Eyler & Giles (1999) [39] argue that adopting innovative learning methods such as service-learning leads to a more profound understanding of the content and materials presented in any learning activity.

Furthermore, 79% of students achieved a certain level of competency or strength in academics through the equivalent education program. This indicates that the program enhances the learners' abilities and enables them to comprehend the presented material, sparking a deeper interest in learning. However, it has been observed that a significant number of learners, accounting for 73%, showed remarkable progress in acquiring the taught skills through conventional academic institutions. This implies that not only the limited number of learners who participated in educational programs outside of formal agricultural education institutions are advancing, but also those from formal institutions have made significant improvements in both theoretical and practical aspects. This suggests that the education system needs to work as a wholistic concept to effectively fill the human resources gap.

However, it was also discovered that the participation rate of students in the program did not align with the set achievement target of a 68% completion rate. This indicates that the current level of student achievement is still significantly lower than the number of graduates produced by established formal educational institutions. Consequently, there is a need for increased support for equivalent education programs to bridge this existing gap. This is particularly crucial for students in the age range of 20 to 30 who are expected to be actively involved in the majority of learning programs, often funded by the government and other community organizations.

5. Conclusion

The utilization of an agriculturally based equivalent education program is suitable for implementation through Community Learning Activity Centers. These centers are community-established institutions that operate on the principle of self-reliance, adhering to the notion of being created, managed, and benefiting the community. The Agricultural-based Equivalent Education program in Jatisari Sub-district has been examined in a study that yielded several significant findings. Firstly, the majority of educators involved in the program possess the necessary experience and skills, accounting for approximately 96% of the staff. This indicates that the educators have accumulated knowledge and competence in both theory and practice, contributing to the quality of the education provided. Secondly, the study revealed that learner participation in equivalent education seminars leads to an improvement in subject-specific competencies. Around 82% of educators experienced competency enhancement through these seminars, highlighting the valuable role they play in enhancing skills and knowledge compared to formal training programs alone. The active involvement and hands-on participation promoted by service learning seem to contribute to better outcomes. Thirdly, a shortage of teaching staff was identified in some agriculture-based equivalent education institutions, which negatively affects performance and service quality. The availability of educators within these institutions was only 70%, indicating a need for additional staff to meet the demand and improve education standards.

Lastly, there is a noticeable gap between student participation and achievement targets. The study found that the current level of student achievement in the program is significantly lower than that of graduates from formal educational institutions. To address this, increased support for equivalent education programs is necessary, particularly for students in the age range of 20 to 30 who are expected to actively participate in learning programs. Bridging this gap requires focused efforts and resources to ensure the success and effectiveness of the agriculturally based equivalent education program in Jatisari Sub-district.

6. Declarations

6.1. Author Contributions

Conceptualization, M.S. and Y.M.; methodology, S.N.; validation, M.S., Y.M., and S.N.; investigation, M.S.; resources, S.N.; writing—original draft preparation, M.S.; writing—review and editing, M.S., Y.M., and S.N.; visualization, S.N.; supervision, Y.M.; project administration, M.S.; funding acquisition, M.S., Y.M., and S.N. All authors have read and agreed to the published version of the manuscript.

6.2. Data Availability Statement

The data presented in this study are available in the article.

6.3. Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

6.4. Institutional Review Board Statement

Not applicable.

6.5. Informed Consent Statement

Not applicable.

6.6. Declaration of Competing Interest

The authors declare that there is no conflict of interests regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely observed by the authors.

7. References

- [1] Askling, B., & Foss-Fridlitzius, R. (2000). Lifelong Learning and Higher Education: The Swedish case. *European Journal of Education*, 35(3), 257–269. doi:10.1111/1467-3435.00025.
- [2] Coombs, P. H., Prosser, R., & Ahmed, M. (1973). *New paths to learning for rural children and youth*. International Council for Educational Development, New York, United States.
- [3] Darder, A. (2015). Chapter Two: Paulo Freire and the Continuing Struggle to Decolonize Education. *Counterpoints*, 500, 39-54. Peter Lang AG, Bern, Switzerland.
- [4] Rogers, A. (2014). *The base of the iceberg: Informal learning and its impact on formal and non-formal learning*. Verlag Barbara Budrich, Kornwestheim, Germany. doi:10.3224/84740632.
- [5] World Health Organization. (2010). *Community-based rehabilitation: CBR guidelines*. World Health Organization (WHO), Geneva, Switzerland.
- [6] Sudjana, D. (2000). *Learning Strategies in Out-of-School Education*. Nusantara Press, Bandung, Indonesia.
- [7] Porreca, Z. (2020). Environmental sustainability and human capital development. *Consilience*, (22), 48-57.
- [8] Baudron, F., Schultner, J., Duriaux, J. Y., Gergel, S. E., & Sunderland, T. (2019). Agriculturally productive yet biodiverse: human benefits and conservation values along a forest-agriculture gradient in Southern Ethiopia. *Landscape ecology*, 34, 341-356. doi:10.1080/03067319.2022.2064750.
- [9] Duff, C. (2010). Towards a developmental ethology: Exploring deleuze's contribution to the study of health and human development. *Health*, 14(6), 619–634. doi:10.1177/1363459309360793.
- [10] Wallenborn, M. (2010). Vocational Education and training and human capital development: current practice and future options. *European Journal of Education*, 45(2), 181–198. doi:10.1111/j.1465-3435.2010.01424.x.
- [11] Government Regulation of the Republic of Indonesia. (2005). *Regulation of the Government of the Republic of Indonesia, Concerning National Education Standards*. Departemen Pendidikan Nasional, Jakarta, Indonesia.
- [12] Ministry of Education, Culture, Research, and Technology (1991). *Government Regulation No. 73, Concerning the Purpose of Out-of-School Education*. Departemen Pendidikan Nasional, Jakarta, Indonesia. (In Indonesian).
- [13] Sudjana, D. (1993). *Participatory Learning Methods and Techniques in Out-of-School Education*. Nusantara Press, Bandung, Indonesia. (In Indonesian).
- [14] Shriar, A. J. (2007). In search of sustainable land use and food security in the Arid Hillside regions of Central America: Putting the horse before the cart. *Human Ecology*, 35(3), 275–287. doi:10.1007/s10745-006-9088-z.
- [15] Rivera, W. M., & Pickens, M. W. (1999). China's Agricultural Education System: The Need for Greater Linkages to Research, Extension and Farmers. *American Journal of Chinese Studies*, 6(2), 185–222.
- [16] Klerkx, L. (2020). Advisory services and transformation, plurality and disruption of agriculture and food systems: towards a new research agenda for agricultural education and extension studies. *The Journal of Agricultural Education and Extension*, 26(2), 131-140. doi:10.1080/1389224X.2020.1738046.
- [17] Sudjana, D. (2006). *Education Program Evaluation (For Non-Formal Education and Human Resource Development)*. Falah Production, Bandung, Indonesia. (In Indonesian).
- [18] IE&CAL. (2022). *Education System in Indonesia: The National Education System*. Indonesian Education and Culture Attaché in London (IE&CAL), The Education and Culture Attaché, Embassy of the Republic Indonesian in London, London, United Kingdom. Available online: <https://atdikbudlondon.wordpress.com/general/education-in-indonesia-and-uk/education-system-in-indonesia/> (accessed on April 2022).
- [19] Karim, S. A. (2021). Mapping the Problems of Indonesia's Education System: Lessons Learned from Finland. *Tell: Teaching of English Language and Literature Journal*, 9(2), 86. doi:10.30651/tell.v9i2.9368.
- [20] Sang, A. K., Muthaa, G. M., & Mbugua, Z. K. (2012). Challenges Facing Technical Training in Kenya. *Creative Education*, 03(01), 109–113. doi:10.4236/ce.2012.31018.
- [21] Arco-Tirado, J. L., Fernández-Martín, F. D., & Fernández-Balboa, J. M. (2011). The impact of a peer-tutoring program on quality standards in higher education. *Higher Education*, 62(6), 773–788. doi:10.1007/s10734-011-9419-x.

- [22] El-Bealy, M. O. (2014). Macro segregation Quality Criteria and Mechanical Soft Reduction for Central Quality Problems in Continuous Casting of Steel. *Materials Sciences and Applications*, 05(10), 724–744. doi:10.4236/msa.2014.510074.
- [23] Golder, P. N., Mitra, D., & Moorman, C. (2012). What is quality? An integrative framework of processes and states. *Journal of Marketing*, 76(4), 1–23. doi:10.1509/jm.09.0416.
- [24] Mukherjee, A., Nath, P., & Pal, M. (2003). Resource, service quality and performance triad: A framework for measuring efficiency of banking services. *Journal of the Operational Research Society*, 54(7), 723–735. doi:10.1057/palgrave.jors.2601573.
- [25] Hill, H. C., Blunk, M. L., Charalambous, C. Y., Lewis, J. M., Phelps, G. C., Sleep, L., & Ball, D. L. (2008). Mathematical Knowledge for Teaching and the Mathematical Quality of Instruction: An Exploratory Study. *Cognition and Instruction*, 26(4), 430–511. doi:10.1080/07370000802177235.
- [26] Connors, J. J. (2022). Comparing Agricultural Education Programs Around the World. Preparing Agriculture and Agriscience Educators for the Classroom. IGI Global, Pennsylvania, United States. doi:10.4018/978-1-6684-3420-8.ch017.
- [27] O’Neil, C., & Lima, M. (2003). Service learning in agricultural instruction: A guide for implementing real-world, hand-on, and community based teaching and learning. *NACTA Journal*, 47(2), 36–41.
- [28] Otsuka, K., Nakano, Y., & Takahashi, K. (2016). Contract farming in developed and developing countries. *Annual Review of Resource Economics*, 8(1), 353–376. doi:10.1146/annurev-resource-100815-095459.
- [29] Martin, W. H. (1947). Chapter V: Agricultural Education. *Review of Educational Research*, 17(3), 240–250. doi:10.3102/00346543017003240.
- [30] Larson, K. L., & Duram, L. A. (2000). Information dissemination in alternative agriculture research: An analysis of researchers in the north central region. *American Journal of Alternative Agriculture*, 15(4), 171–180. doi:10.1017/s0889189300008742.
- [31] Poudel, D. D., Vincent, L. M., Anzalone, C., Huner, J., Wollard, D., Clement, T., DeRamus, A., & Blakewood, G. (2005). Hands-On Activities and Challenge Tests in Agricultural and Environmental Education. *Journal of Environmental Education*, 36(4), 10–22. doi:10.3200/JOEE.36.4.10-22.
- [32] Mitrofanenko, T., Varga, A., & Zawiejska, J. (2020). Toward Stronger Integration of Education for Sustainable Development into the Carpathian Convention Activities: Reflection on the Process and Outlook. *Mountain Research and Development*, 40(4), A1–A14. doi:10.1659/MRD-JOURNAL-D-20-00025.1.
- [33] Roberts, R., & Edwards, M. C. (2015). Service-Learning's Ongoing Journey as a Method of Instruction: Implications for School-Based Agricultural Education. *Journal of Agricultural Education*, 56(2), 217-233. doi:10.5032/jae.2015.02217.
- [34] Roberts, R., & Edwards, M. C. (2015). Service-Learning's Ongoing Journey as a Method of Instruction: Implications for School-Based Agricultural Education. *Journal of Agricultural Education*, 56(2), 217-233. doi:10.5032/jae.2015.02217.
- [35] Steiner, S., Warkentin, B., & Smith, M. (2011). Community forums: A unique approach to community service-learning. *Canadian Journal of Education*, 34(1), 282–307.
- [36] Brower, H. H. (2011). Sustainable development through service learning: A pedagogical framework and case example in a third world context. *Academy of Management Learning and Education*, 10(1), 58–76. doi:10.5465/AMLE.2011.59513273.
- [37] Henigson, H. (2020). Community Engagement in UN Peacekeeping Operations: A People-Centered Approach to Protecting Civilians. International Peace Institute, New York, United States.
- [38] Estep, C. M., & Roberts, T. G. (2011). A Model for Transforming the Undergraduate Learning Experience in Colleges of Agriculture. *NACTA Journal*, 55(3), 28–33.
- [39] Eyler, J., & Giles Jr, D. E. (1999). Where's the Learning in Service-Learning? *The Journal of Higher Education*, 72(2), 256. doi:10.2307/2649327.
- [40] Zhen, H., Qiao, Y., Zhao, H., Ju, X., Zanolli, R., Waqas, M. A., ... & Knudsen, M. T. (2022). Developing a conceptual model to quantify eco-compensation based on environmental and economic cost-benefit analysis for promoting the ecologically intensified agriculture. *Ecosystem Services*, 56, 101442. doi:10.1016/j.ecoser.2022.101442.
- [41] Torchenaud, M. (2017). Documentation Analysis. In *Cost-Benefit Analysis: Improving Girl's Retention in School: Haiti Priorise*, 6–11. Copenhagen Consensus Center, Copenhagen, Denmark.
- [42] Amran, G. B., & Rachman, Y. B. (2020). Information Needs and Seeking Behavior of Rice Farmers: A Case Study at Cengkong Village, Karawang Regency, West Java Province, Indonesia. *Library Philosophy and Practice*, University of Nebraska-Lincoln, Lincoln, United States.
- [43] Inagurasi, L. H. (2014). The Karawang Dutch Indies Waterworks in the Agriculture Context (Dutch East Indies Period Waterworks in the Karawang Region: In the Context of Rice Agriculture. *Naditira Widya*, 8(1), 9–18. doi:10.24832/nw.v8i1.255.

- [44] Kumar, S. V., Peters-Lidard, C. D., Arsenault, K. R., Getirana, A., Mocko, D., & Liu, Y. (2015). Quantifying the added value of snow cover area observations in passive microwave snow depth data assimilation. *Journal of Hydrometeorology*, 16(4), 1736–1741. doi:10.1175/JHM-D-15-0021.1.
- [45] Arikunto, S. (2002). *Research Methodology A Proposal Approach*. PT. Rineka Cipta, Jakarta, Indonesia. (In Indonesian).