



ANALYSIS OF LEARNING PREFERENCES AND STYLES OF STUDENTS IN AGRIBUSINESS PLANT EDUCATION

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ARTICLE INFO		ABSTRACT
Article history		<i>Agribusiness vocational education has a strategic role in preparing skilled workers who can compete in the world of work. This study aims to analyze students' preferences and learning styles in the Food Crops and Horticulture Agribusiness program at SMK Negeri 1 Bawen. The research method is quantitative and descriptive, with data collection through questionnaires and interviews. The main focus of this study includes preferences for learning methods, student motivation, and other supporting factors such as access to agricultural land and learning facilities. The results showed that 48.28% of students preferred a combination of theory and practice learning methods because they provided a deeper understanding and were relevant to the needs of the workplace, while 51.72% preferred practice only because this approach is more appropriate to the needs of the workplace. As many as 79.31% of students chose to study in groups because they allowed discussion and collaboration, while 20.69% preferred independent learning to focus on individual understanding.</i>
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INTRODUCTION

Vocational education plays a vital role in preparing a skilled and competent workforce that aligns with the needs of modern industry. It is designed to equip students with practical skills and specialized competencies relevant to their expertise (Febiyanti et al., 2021). Within this context, the agricultural sector contributes significantly to economic development through food production, employment generation, and foreign exchange earnings. Its ability to stimulate industrial demand further underscores its

importance. More importantly, it plays a significant role in enhancing societal welfare (Rodiaminollah & Qomariyah, 2023). Consequently, agricultural vocational education demands that students acquire technical and managerial skills to produce, process effectively, and market agricultural products.

As an agrarian nation, Indonesia requires innovative and professional human resources to support sustainable agricultural advancement. In response to this need, Vocational High Schools (SMK) in the agribusiness sector serve as key institutions in preparing the younger generation to become proficient agricultural practitioners. These schools emphasize mastering core competencies through intensive, hands-on education and training, equipping students with the knowledge, skills, and work ethics to meet labour market and industry demands (Arnita & Fadriati, 2022). However, students enrolled in the Plant Agribusiness program come from diverse backgrounds, particularly in terms of prior experience and access to learning resources such as agricultural land. Despite this diversity, limited research has explored how these variations affect students' learning preferences and styles. This study, therefore, aims to fill this gap by providing a comprehensive analysis of students' learning preferences and styles in the context of crop agribusiness education, which is a novel and important contribution to the field of vocational education.

To design more effective learning experiences, it is important to consider individual differences in learning preferences, such as a tendency towards theoretical versus practical approaches or self-directed versus group-based learning, as well as students' motivation levels. Various factors influence student learning outcomes, including implementing interactive learning media that enhance comprehension and retention. In addition, a supportive learning environment, such as well-equipped classrooms and access to technological devices, combined with a strong interest in learning, can significantly enhance intrinsic motivation and academic achievement (Lubis et al., 2024). With these considerations in mind, this study aims to analyze students' learning preferences and styles in the context of crop agribusiness education. By understanding these factors, educational institutions will be in a better position to develop curricula that are pedagogically effective and relevant to the demands of the evolving labour market and agribusiness sector. This could lead to the implementation of more personalized learning approaches, the integration of new technologies, and the creation of more

engaging learning environments, ultimately enhancing the quality of agricultural vocational education.

MATERIALS AND METHODS

This study, conducted in Garde XI Agribusiness of Food Crops and Horticulture Class A at SMK Negeri 1 Bawen with 29 students, is significant due to the unique agribusiness focus of the school and the specific class. The sampling technique used was purposive sampling, which is the selection of participants based on their willingness to fill out the questionnaire. This method is considered appropriate considering the limited population and the need to involve respondents who show adequate involvement and familiarity with the learning context, thus ensuring the relevance and reliability of the data collected.

The data collection process was comprehensive, utilizing a structured questionnaire designed to explore students' preferences regarding learning methods (i.e., theory, practice, or a combination), preferred learning style (i.e., individual-based or group-based), level of motivation towards agribusiness subjects, and contextual factors such as access to farmland and prior experience. The questionnaire included both closed-ended and open-ended items, ensuring a thorough understanding of the students' perspectives. Closed-ended items used categorical responses and Likert-type scales, while open-ended questions delved into the reasons behind students' choices.

To facilitate clarity in data analysis, questionnaire responses were classified into three dimensions: (a) preference for learning method (theory, practice, or both), (b) learning style (independent or group), and (c) level of motivation to learn. Motivation was measured using a 3-point Likert scale ranging from 1 (quite high motivation), 2 (high motivation), and 3 (very high motivation). Suasapha (2020) explains that the Likert scale developed by Rensis Likert in 1932 is a widely used psychometric tool for measuring attitudes, usually presented as a series of statements accompanied by a variety of response options that allow respondents to express their level of agreement or disagreement and has since become a fundamental instrument in social sciences and survey-based research.

The use of descriptive statistical techniques, including percentage distribution and mean, allowed for a comprehensive analysis of the quantitative data, identifying trends in

students' learning preferences and motivation levels. This method not only presents data patterns clearly but also supports the interpretation of student motivation and behavior in the learning context. Nasution (2017) notes that descriptive statistics, a branch of statistics that aims to collect, present, and analyze data from a group to describe or explain the characteristics of the group, is particularly useful in this context, providing practical insights for educators and stakeholders in agribusiness education.

RESULTS AND DISCUSSION

Learning Method Preferences

The results showed that 48.28% of students preferred a combination of theory and practice, while 51.72% of students who only preferred practice felt that this approach was more relevant to the workplace's needs, especially for those who already had direct experience in the field (Figure 1)..

CONCLUSION

LOF concentration, soaking time, and the interaction between the combination of LOF concentration and soaking time have not yet been obtained to break seed dormancy and the growth of sugar apple seedlings. The use of 25% LOF concentration showed significant differences with other LOF concentration treatments (50, 75, 100%) on growth parameters (plant height, number of leaves and fresh biomass) but not significantly different compared to the control on all germination and growth parameters. Soaking times of 6 hours and 12 hours were not significantly different on all germination and growth parameters but substantially different from soaking 18 hours and 24 hours on germination parameters, namely germination percentage and vigour index. Importantly, the interaction between LOF concentration and soaking time did not reveal any significant difference in all the measured germination and growth parameters, providing a clear conclusion.

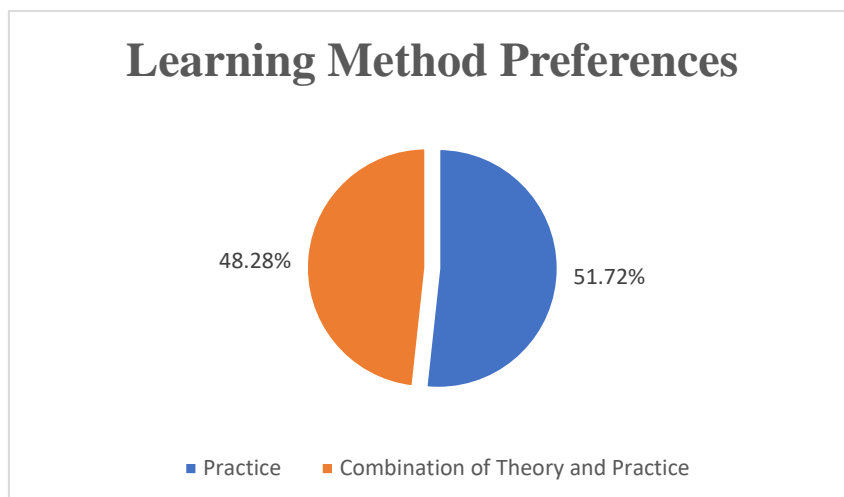


Figure 1. Diagram of Student Learning Method Preferences

Combining theory and practice can provide a deeper understanding because theory helps build a foundation of knowledge, while practice allows them to apply that knowledge. Ariyani et al. (2022) stated that education combining theory and practice can accelerate the increase in students' learning because they are guided directly, given corrections for mistakes, and given the opportunity to ask questions so that their understanding of training procedures improves. Several students expressed that the combination method made them more confident in facing challenges in the workplace because they felt they had understood the concept and were able to apply it.

Rahmanto and Gunadi (2022) stated that practical learning has a strategic role in improving students' work readiness because, through useful activities such as Industrial Practice, students gain direct experience that is relevant to the world of work, which in turn strengthens mental readiness, skills, and competitiveness in facing global challenges, including entering the international job market such as the ASEAN Economic Community (AEC). On the other hand, several students felt that theoretical learning was often too abstract and difficult to relate to real situations. These findings indicate that designing a curriculum that is balanced between theory and practice is necessary to meet the needs of most students while accommodating the preferences of the minority who focus more on one aspect.

Preferred Learning Method

Group learning emerges as the preferred method, with 79.31% of students opting for it. This approach fosters discussion, encourages the sharing of experiences, and

provides a platform for mutual assistance when students encounter difficulties. The remaining 20.69% of students, however, favor independent learning, as it allows them to concentrate on challenging material without the distractions of group dynamics (Figure 2).

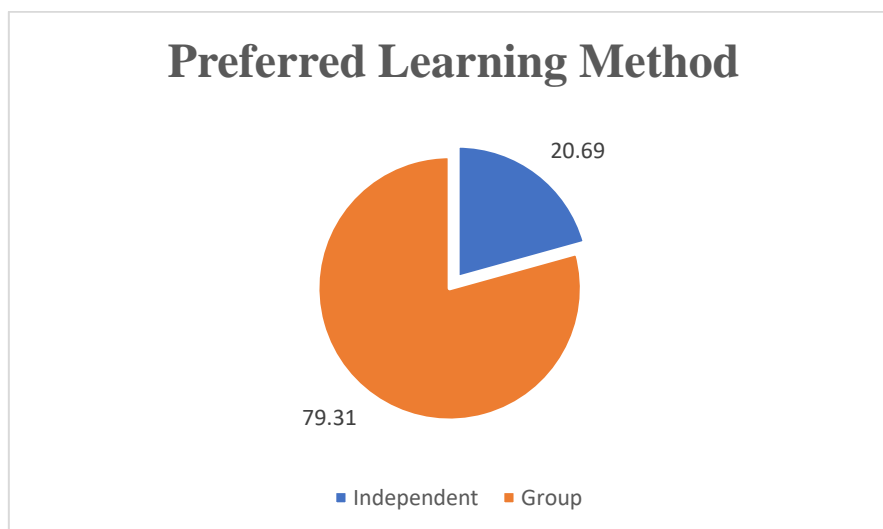


Figure 2. Diagram of Student Preferred Learning Methods

Based on Figure 2, most students (79.31%) prefer group learning. This is by what was stated by Saija (2020) that high school students have a more effective learning experience with other students in groups. Group learning allows for discussion, sharing experiences, and helping each other when facing difficulties. As explained by Hasanah and Himami (2021), group learning encourages students to collaborate, share knowledge, and develop positive interdependence within the group, thus creating an active and inclusive learning environment while fostering social and collaborative skills that are important for community life. Several students stated that group work provides additional motivation because of the shared responsibility. In addition, group dynamics often create new ideas that enrich the learning process.

On the other hand, a small number of students (20.69%) prefer to study independently. Zakaria and Ibrahim (2018) explained that independent learning is a process that aims to improve students' ability to learn independently without relying on teachers or friends; where they try to understand the material independently first and only ask for help if they encounter difficulties, and can find the necessary learning resources independently. Independent learning also allows students to explore the material in depth according to their interests and speed.

Mulyadi and Syahid (2020) explain that independent learning is the ability of students to actively and responsibly manage their learning process, starting from determining goals, choosing strategies, and managing learning resources to channeling the results through encouragement from a personal will, initiative, and self-confidence, and without complete dependence on others. Several students who chose independent learning said that this helped them to be more confident in understanding concepts before discussing them with others. From these results, it can be seen that both approaches have their advantages. Therefore, applying a learning method that combines independent and group sessions can provide optimal benefits for students. For example, students can study the material independently first, followed by group discussions to strengthen their understanding.

Student Motivation

The results reveal that students' motivation for agribusiness lessons varies, with 44.83% of students demonstrating a fairly high level of motivation, 31.03% showing high motivation, and 24.14% exhibiting very high motivation (Figure 3). This data underscores the strong motivational drive that most students have towards agribusiness lessons. Their active participation, particularly in field practice activities, is a testament to their dedication and enthusiasm for the subject.

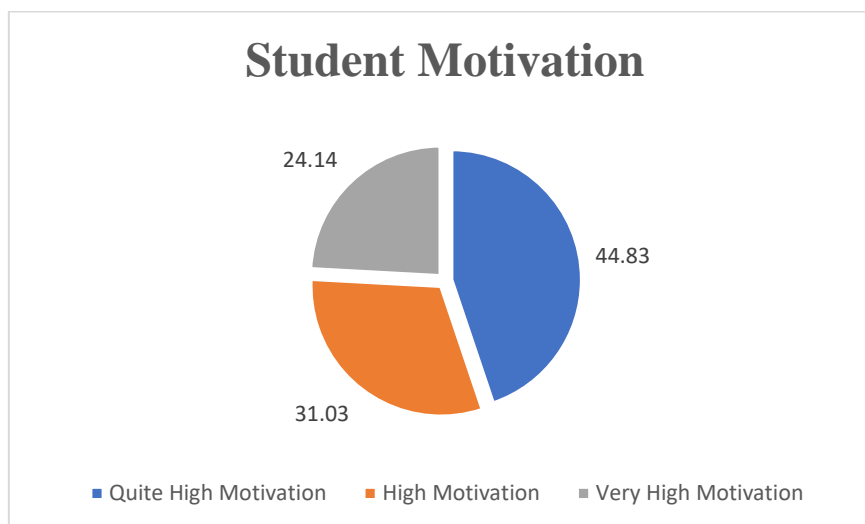


Figure 3. Student Motivation Diagram

The active participation observed during field practice sessions confirms that practice-based and project-based learning positively influences students' understanding. Ariyani (2019) explained that enhancing student motivation can significantly contribute

to improved learning outcomes. In this context, the hands-on experiences gained through practical activities are not just a supplement, but a crucial component that strengthens students' confidence in mastering agribusiness skills. Therefore, practice-oriented learning plays a pivotal role in deepening comprehension and increasing the relevance of the material to real-world work settings in agribusiness education.

However, not all students show the same motivation toward theoretical content. Some students reported that theory-based instruction was often delivered through monotonous lectures, which they found less engaging. This aligns with Christianity (2021), who argues that a predominantly lecture-based method can result in passive learning, reducing student motivation and ultimately affecting learning outcomes. Nevertheless, students who initially lacked motivation toward theoretical material expressed increased interest when the content was explicitly linked to its practical application, offering them a clearer picture of how concepts are implemented in the agribusiness sector.

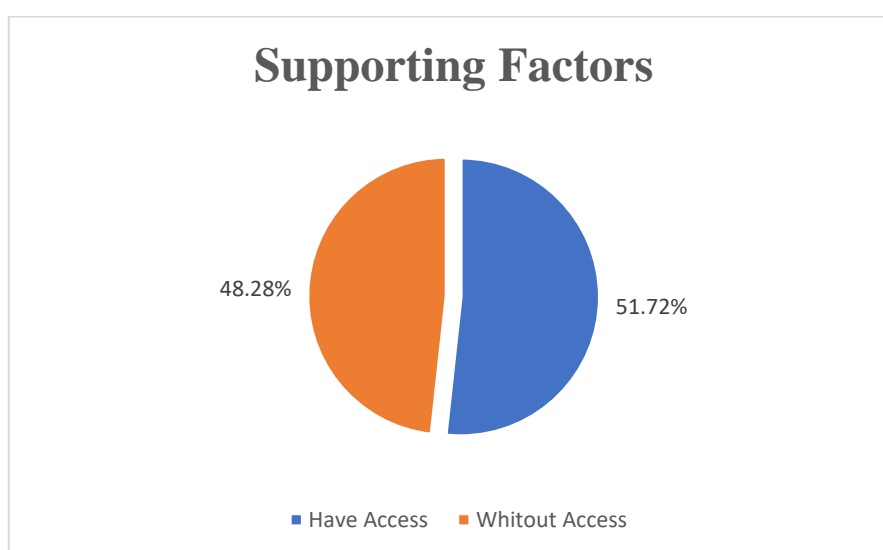
Students who are highly motivated to engage with theoretical content often believe that a solid conceptual understanding is essential for success in agribusiness. As Devi et al. (2019) explain, students' motivation to learn is strongly influenced by their interest in the subject matter and the instructional methods employed by the teacher. Therefore, educators play a pivotal role in creating a learning environment that fosters interest and motivation. By conducting ongoing assessments to understand students' learning preferences better and improve instruction quality, educators can significantly impact student motivation and success in mastering the material.

In addition to the teaching method factor, student enthusiasm is significantly influenced by the availability of adequate learning facilities. Students with access to practical facilities like school gardens or agricultural equipment tend to be more involved and motivated to learn. Arsana (2019) explains that the availability and adequacy of learning facilities and infrastructure have a positive and significant influence on student learning motivation. Students who have adequate and well-functioning facilities and infrastructure tend to have higher motivation and enthusiasm for learning compared to students whose facilities and infrastructure are limited or inadequate. Therefore, educational institutions must prioritize providing facilities that support effective learning

processes in agribusiness. Enhancing these resources can have a meaningful impact on student motivation and their success in mastering the material.

Supporting Factors

The results showed that 51.72% of students had access to agricultural land in their homes, which allowed them to practice the knowledge they had learned in school. Meanwhile, 48.28% of students had no agrarian land access (Figure 4). This finding indicates that the availability of private farmland can play an important role in improving students' practical experience in agribusiness, which supports their understanding of the material being taught.



Students with access to agricultural land demonstrate better skills in planting and caring for crops, including irrigation techniques, fertilization, and pest control. They expressed that this hands-on experience strengthens their understanding of the material learned in class. This underscores the importance of practical experience in deepening agribusiness material. On the other hand, students who do not have access to land can still demonstrate high motivation by utilizing the practical facilities provided by the school, such as experimental gardens and modern agricultural equipment.

These facilities, designed to simulate real-world conditions, allow them to gain experience similar to real practice, which is no less important in learning. In addition to the facility factor, teacher support also plays a crucial role in supporting student learning. Teachers who actively provide guidance and feedback during practical activities can increase student motivation to continue learning and developing. Pazriansyah and Qohhar (2019) stated that direct feedback allows students to receive relevant information related

to their progress, thus making it easier for them to improve and develop their skills. Several students also expressed that the presence of teachers as mentors helped them understand the right steps in carrying out agribusiness practices, which accelerated their learning process.

Another significant supporting factor is a cooperative program between schools, agribusiness institutions, and local farmers. This cooperation not only provides opportunities for students to carry out fieldwork practices directly connected to the industrial world but also fosters a sense of community and shared learning. Zakaria et al. (2023) explained that collaboration between schools in the business world and the industrial world through fieldwork practice activities provides mutually beneficial benefits because the knowledge gained by students in schools can be directly applied in the world of work.

In addition, students also gain direct experience that broadens their understanding of the needs and challenges in the agribusiness industry. This fieldwork practice program not only improves students' technical skills but also provides broader insights into the dynamics and needs of the world of work. Ro'if et al. (2024) explained that fieldwork practice is an integral part of dual system education, namely a form of collaboration between Vocational High Schools and the industrial world which aims to train and develop students' abilities and skills through direct experience in applying the knowledge that has been learned in the business and industrial world.

Overall, the availability of land, school facilities, teacher support, and external cooperation programs play a very important role in supporting the success of student learning. Susiani et al. (2022) explained that school infrastructure and facilities play a crucial role in improving the quality of education because adequate resources not only support the teaching and learning process and foster student and educator motivation. Furthermore, effective resource management is very important as an indicator of improving overall educational standards.

Therefore, academic institutions are advised to continue to expand and enhance the quality of these factors so that learning becomes more effective and relevant to the needs of the world of work. For example, students with access to land report increased skills in planting and caring for plants, while those who do not have access to land can still show high involvement by utilizing the practice facilities available at school. Improving the

quality of facilities and cooperation with the industrial world will further enrich student's learning experiences and prepare them to face challenges in the agribusiness world of work.

CONCLUSION

This study's findings underscore the importance of integrating theoretical and practical learning approaches in the Food Crops and Horticulture Agribusiness program. The study found that 48.28% of students preferred this combination, as it bridged conceptual understanding with field application. Another 51.72% opted for a practice-oriented model aligned with workplace demands. The majority (79.31%) favored a collaborative learning approach, while 20.69% preferred an independent study model. The study also found that student motivation was generally high, particularly during field practice, which offered relevant and authentic experiences. Factors such as access to agricultural land, adequate facilities, and teacher support significantly influence learning motivation and outcomes.

Based on these findings, the study strongly recommends that vocational institutions adopt a blended learning model. This model harmonizes theoretical knowledge with experiential practice, accommodating both collaborative and independent learning preferences to optimize student potential. Furthermore, the study suggests that providing agricultural land, enhancing practical facilities, and establishing partnerships with the agribusiness sector should be prioritized to enrich the learning ecosystem. Future research is suggested to investigate contextual variables across different regions to support the development of adaptive and industry-relevant vocational education strategies.

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