

An Examination of Student Preferences and Career Aspirations in Kotawaringin - Central Kalimantan : Implications for Vocational Education

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ABSTRACT

This study underscores the urgent need for vocational education in Kotawaringin, Central Kalimantan, to meet industry demands and public expectations for accessible and high-quality education. The findings indicate a strong interest in vocational training aligned with local industries, with the majority of respondents (67.79% male) recognizing its role in workforce preparedness. Most 11th-grade students (46.21%) prefer entering the workforce immediately after graduation (61.05%), particularly in the mining sector (30.06%), due to financial constraints and concerns regarding university graduates' employment prospects. The majority of respondents come from SMKN 2 Sampit (37.94%) and SMKN 1 Pangkalan Lada (36.09%). Bridging the gap between career preferences and labor market needs requires awareness campaigns, scholarships, internships, and industry partnerships. Key strategies include strengthening school-industry collaboration, enhancing infrastructure, developing competency certification programs, improving teacher training, promoting curriculum flexibility, and expanding financial aid. Broadening financial assistance is crucial for accessibility. These measures are expected to equip graduates with relevant skills, foster regional economic growth, and strengthen the sustainability of the workforce.

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Introduction

The current industrial revolution has transcended the boundaries of global economies and trade. It now extends into various sectors, including democratization, science, technology, information, education, and human resources (Fountas et al., 2020). In this era of the Fourth Industrial Revolution, the focus is firmly placed on the workforce. The workforce has become the central point of technological advancement and socio-economic development in the modern world, a prominent topic of discourse with a significant impact on educational policies and strategies (Spöttl & Windelband, 2021). The sustainability of the new economic era depends heavily on the availability of human resources (Krekel et al., 2019). Vocational education plays a crucial role in addressing the challenges of the industrial revolution era. Its importance lies in shaping a skilled and workforce-ready labor force in accordance with market demands. Vocational education is a form of training that emphasizes practical skills directly aligned with the needs of industry and the labor market. This topic has become a key focus in efforts to enhance the quality of human resources and promote sustainable development. With its vast territory and large population, Indonesia has significant potential for developing vocational education (Suharno et al., 2020).

Since the division of Papua, the province of Central Kalimantan, with a land area of 153,564 km² (Dinas Kehutanan Provinsi Kalimantan Tengah, 2023), has become the largest region in Indonesia (Karouw, 2023). Geographically located in the center of Kalimantan Island, it is rich in natural resources, including mining, forestry, agriculture, and abundant tourism potential. To maximize these resources, a skilled and competent workforce is needed across various fields. In this rapidly evolving era, vocational education becomes one of the key foundations for preparing a workforce that is skilled and ready for fieldwork. Central Kalimantan, with its wealth of natural and human resources, holds immense potential to develop various industrial sectors, such as mining, plantations, tourism, energy, and others. This potential must be optimally utilized, where a robust vocational education system is needed to train local workers with skills that match industry demands. Currently, the majority of the educational system in Central Kalimantan is still dominated by formal education, which tends to focus more on academic aspects and gives less attention to practical skills.

This is reflected in the growth of schools and student enrollment in vocational high schools during the Second Semester of the 2022/2023 academic year in Central Kalimantan. There were only 139 vocational high schools schools, with a growth rate of 0%, in stark contrast to senior high schools, which experienced growth, with 245 schools increasing by 0.28%. Furthermore, it was

reported that the number of vocational high schools students totaled only 33,326, with a growth rate of -3.25%, while senior high schools enrollment increased by 2%, or 60,461 students (Badan Pusat Statistik Provinsi Kalimantan Tengah, 2024). The disparity in growth reflects contrasting trends in the labor market for vocational education graduates. Based on comprehensive data from the 2021 Large and Medium Industries annual survey, which collected data for 2020, the number of large and medium industrial companies still actively operating in Central Kalimantan reached 141 (Badan Pusat Statistik Provinsi Kalimantan Tengah, 2020). This represents an 8.46% increase from the previous year, with 130 companies recorded in 2019 (Badan Pusat Statistik Provinsi Kalimantan Tengah, 2020). According to the Mineral and Coal Mining Business License (IUP) data for districts/cities in Central Kalimantan in 2018, there were 876 businesses (ESDM Provinsi Kalimantan Tengah, 2018). With a strong push to develop the industrial sector and an emphasis on infrastructure development, the demand for labor in large and medium industries is growing. Central Kalimantan demonstrates significant potential for creating new jobs and improving the region's economic quality. Therefore, the development of vocational education in Central Kalimantan becomes crucial to bridging the employment opportunities for graduates with industry needs.

The Minister of Education and Culture of the Republic of Indonesia Regulation Number 7 of 2020 on the Establishment, Amendment, and Dissolution of Public Universities, and the Establishment, Amendment, and Revocation of Private University Licenses, in Chapter I, General Provisions, Article 1, paragraph 2, states that the establishment of a public higher education institution refers to the creation of universities, institutes, colleges, polytechnics, academies, and community academies by the government. Furthermore, Article 3 states that the establishment of private higher education institution refers to the creation of universities, institutes, colleges, polytechnics, academies, and community academies by a nonprofit legal entity.

One of the requirements for the establishment of public higher education institution and private higher education institution, as mentioned in the relevant documents of Permendikbud Number 7 of 2020, is a feasibility study. Feasibility study analysis plays a crucial role in the development planning process. However, stakeholder identification and engagement during the pre-development phase often fall short of optimal levels (Currie et al., 2009). Feasibility studies serve to assess whether an intervention is suitable for further testing. In other words, such studies provide researchers with the opportunity to evaluate whether ideas and findings can be developed to ensure their relevance and sustainability in the future (Bowen et al., 2009). To achieve more effective planning outcomes, a more systematic and theory-based approach is required. Such an approach

will ensure more effective stakeholder involvement and enable planning to proceed more efficiently, aligning with the needs of all parties involved (Bowen et al., 2009; Currie et al., 2009). This study explores the potential for establishing vocational education in Central Kalimantan. The main objective of this research is to identify the industrial and economic sector needs in Central Kalimantan and to analyze the feasibility and sustainability of establishing vocational education institutions in the region.

This study also identifies potential partnerships with local industries and governments to ensure the continuity of vocational education programs in Central Kalimantan. The development of vocational education in Central Kalimantan has the potential to provide extensive benefits, both for individuals and for regional development. With quality vocational education, the people of Central Kalimantan will have the opportunity to acquire skills relevant to the labor market, improve their quality of life, and contribute to sustainable economic development.

Method

This research employs a mixed-method approach, combining both qualitative and quantitative methods, commonly referred to as the mixed-method approach, with the Sequential Exploratory design. This design falls under the category of mixed-method research, integrating qualitative and quantitative methods in two distinct stages (Cabrera, 2011; O’Cathain, 2019). Sequential Exploratory begins with a qualitative phase to gain an in-depth understanding of the phenomenon or problem being studied, followed by a quantitative phase to test or measure the findings on a broader scale (Cabrera, 2011; Cameron, 2009). The research is conducted in the Kotawaringin region of Central Kalimantan Province, specifically in Sukamara Regency, Lamandau Regency, West Kotawaringin Regency, and East Kotawaringin Regency.

The selection of the research location is based on its alignment with the economic dynamics and labor market demands of Central Kalimantan. Statistical data from the Central Kalimantan Bureau of Statistics indicate that Kotawaringin Timur and Kotawaringin Barat Regencies are the primary centers of the oil palm plantation industry, with respective land areas of 460,030.54 and 277,642.73 hectares (BPS Kalimantan Tengah, 2024). Additionally, Kotawaringin Barat has experienced growth in trade and tourism (BPS Kalimantan Tengah, 2025b), while Sukamara and Lamandau exhibit substantial potential in fisheries (BPS Kalimantan Tengah, 2025c) and agriculture (BPS Kalimantan Tengah, 2024). These economic characteristics generate a significant demand for a skilled workforce across various sectors. According to statistic data (BPS Kalimantan Tengah, 2025a), Kotawaringin Timur has the highest employment rate in Central Kalimantan, with 208,614 employed individuals, followed by Kotawaringin Barat with 139,740. Meanwhile, Sukamara and

Lamandau rank sixth and seventh, with 33,957 and 54,684 employed individuals, respectively. Conducting research in this region provides an opportunity to analyze the mismatch between vocational high school graduates skills and industry requirements, offering insights that could inform the development of vocational education programs. Moreover, the region's well-established transportation infrastructure enhances accessibility, facilitating both research activities and industrial engagement.

The data collection methods used in this research include Focus Group Discussions (FGD), interviews, questionnaires, and documentation. The descriptive quantitative data analysis technique aims to describe or summarize numerical data in a meaningful and easily understandable manner. In the context of mapping the potential for establishing vocational colleges, this process begins with the collection of data from various relevant sources, such as surveys and government agency reports.



Fig 1. Research Phases

Result and Discussion

This study highlights a significant interest and demand for vocational education that is relevant to the local industry in the region. The majority of respondents expressed a positive belief in the role of vocational education in preparing them for the workforce. The uneven distribution of respondents by gender, school origin, and class underscores factors that need to be considered when formulating educational policies. The alignment of studies with industry and financial readiness are also key factors in supporting the success of vocational education (Siswandi et al., 2019; Siswandi & Sukoso, 2015). Public expectations of the government are substantial, particularly regarding the provision of affordable and quality education, along with adequate facilities (Suharno

et al., 2020). This illustrates the urgent need for responsive and relevant policies. The study results also reveal a strong relationship between interest in and the need for vocational education that is relevant to the local industry in the region. This relationship is demonstrated by the fact that most respondents hold a positive belief in the role of vocational education in preparing them to enter the workforce. The uneven distribution by gender, school origin, and class indicates that certain factors should be taken into account in shaping educational policies. The connection between studies and industry, along with financial readiness, are key factors supporting the success of vocational education (Al et al., 2022).

A total of 593 respondents were involved, comprising 191 women (32.21%) and 402 men (67.79%). This distribution shows that the majority of respondents are male. The significant difference between the number of men and women could reflect various factors, such as greater male interest in the fields studied or differences in access to or participation in education between men and women in the region. This is important to consider in data analysis, as an imbalanced gender distribution can affect research outcomes and interpretations. Gender differences in decision-making can influence their behavior in seeking information (Siregar, 2018). For example, in the context of vocational education in technical fields such as mining, which is often male-dominated, this distribution may suggest a gender-based participation trend in that sector.

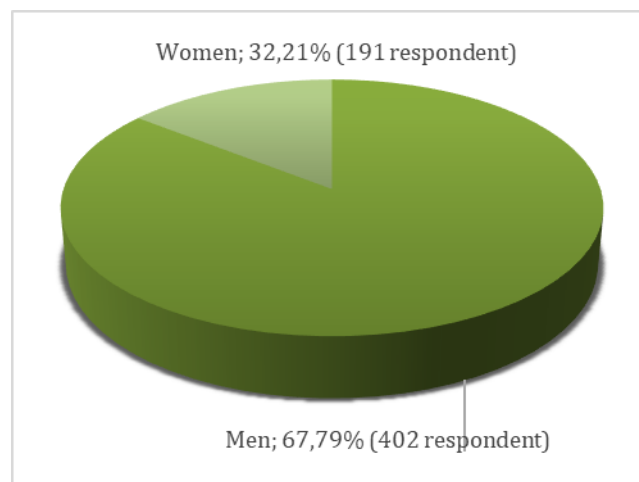


Fig 2: Respondent Characteristics by Gender

The dominance of respondents from Grade XI, amounting to 46.21% (274 individuals), shows high participation from students. There is a greater level of awareness or interest among Grade XI students in the research topic. Additionally, Grade XI students may have more time to participate in research compared to Grade XII students, who are preparing for graduation. This dominance may also suggest that Grade XI students are in a critical decision-making phase regarding their future,

making them more interested in issues related to education and career. The distribution of respondents shows that the majority come from State Vocational High School 2 Sampit (37.94%) and State Vocational High School 1 Pangkalan Lada (36.09%). Other schools, such as State Vocational High School 1 Bulik, State Vocational High School 1 Sukamara, and State Vocational High School 3 Sampit, have fewer respondents. The absence of respondents from certain schools, such as State Vocational High School 1 Cempaga and State Vocational High School 2 Bulik, may indicate limitations in the research outreach or differences in interest or participation among these schools. This distribution may also reflect diversity or disparity in facilities and education quality across schools. This highlights the need for efforts to achieve more balanced representation in future research. Regarding the respondents plans after graduation, the majority (61.05%) plan to seek employment, while 15.51% intend to pursue studies at general higher education institutions and 8.77% at vocational higher education institutions. Entrepreneurship was chosen by 9.27% of respondents. These data indicate a strong tendency among students to enter the workforce immediately rather than continue formal education (Jalinus et al., 2023). possibly due to economic needs or the perception that general education does not offer comparable benefits (Zamfir et al., 2020). These findings also emphasize the importance of providing vocational education pathways that are more connected to industry to effectively prepare students for entering the workforce (Ali et al., 2020).

Furthermore, the high interest in immediate employment after graduation reflects the need for more practical and applied educational programs. The greatest career interest was shown in the mining industry (30.06%), followed by the agricultural industry (25.46%) and the economics field (21.08%). This reflects strong interest in fields with significant job opportunities in the region, such as mining and agriculture. The education field also attracted notable interest (12.31%). This interest reflects students' perceptions of job opportunities in these industries, influenced by the local environment that steers their interest in those directions. The high interest in the mining field may be influenced by the presence of a dominant mining industry in the region, which offers promising employment opportunities.

Most respondents (84.65%) chose careers based on personal interest, while 12.31% were influenced by parental or family advice. The influence of trends and friends was minimal (0.67% each). A student stated that he preferred to enter the workforce immediately after graduation, as he wished to become financially independent as soon as possible and believed that the skills acquired during his education were sufficient to enter the job market. A similar sentiment was expressed by a plantation management student who aspired to pursue higher education but was constrained by

financial limitations, leading him to choose employment first in order to save money. Meanwhile, an accounting student revealed that he opted for work due to the observation that many university graduates still struggled to secure employment. Discussions with educators, particularly guidance counselors, emphasized that most students felt more prepared to enter the workforce rather than pursue higher education. However, the greatest challenge was ensuring that they secured decent jobs with promising career prospects, which were largely influenced by their parents' economic conditions—many of whom worked in factories or plantations. Another notable finding was that, beyond economic factors and job readiness, students' perceptions of higher education also played a crucial role in their decision-making process. Interviews with 50 students indicated that the majority preferred to work due to economic reasons and the desire for independence. Approximately 75% of students held the belief that a bachelor's degree did not necessarily guarantee a higher-paying job compared to vocational school graduates who directly entered the workforce.

This perception was reinforced by real-world observations, which revealed that some university graduates remained unemployed or worked in fields unrelated to their academic disciplines. Social pressures and environmental influences also played a significant role, as the decision to work was often shaped by peer tendencies and family expectations that encouraged financial independence at an early stage. This shows that personal interest is identified as the primary factor influencing career choices in an individualistic environment, where adolescents tend to be more independent in making their career decisions (Akosah-Twumasi et al., 2018). Career choice is a crucial issue in their developmental life (Akosah-Twumasi et al., 2018). Career decision-making requires a process of understanding, defining what they want to do, and exploring various career options with the help of guidance and planning. The importance of career guidance lies in helping students explore their interests and understand the career potential in various fields, as career decisions guided by personal interest tend to be more sustainable and satisfying in the long term.

The distribution of respondents' interest in technology shows a significant preference for mining technology (27.99%) and automotive engineering (13.49%). There is also considerable interest in heavy equipment technology and computer and network technology. This reflects the students' awareness of the importance of technological skills in modern industries, as well as the available job opportunities in these sectors. Such interest highlights the need for a curriculum that strengthens technical and technological skills to meet the demands of the labor market. Regarding the respondents' choice of study level in vocational colleges, the majority (45.03%) selected a Diploma Level 1 program, indicating a desire to enter the workforce quickly. There is also significant interest

in Diploma Level 3 (20.24%) and Diploma Level 4 (22.09%) programs. These preferences reflect the students' inclination towards shorter, more practical education programs that allow them to acquire skills and secure employment promptly. This reflects the need for more flexible and skills-oriented educational programs.

Concerning the location of the vocational college, the majority of respondents preferred Pangkalan Bun (53.96%) over Sampit (46.04%) as the ideal location. This preference is influenced by various factors, such as accessibility, regional reputation, and the availability of educational facilities and industries around the location. Therefore, the choice of location becomes a critical consideration in planning the establishment of a new educational institution to meet the relevant educational needs.

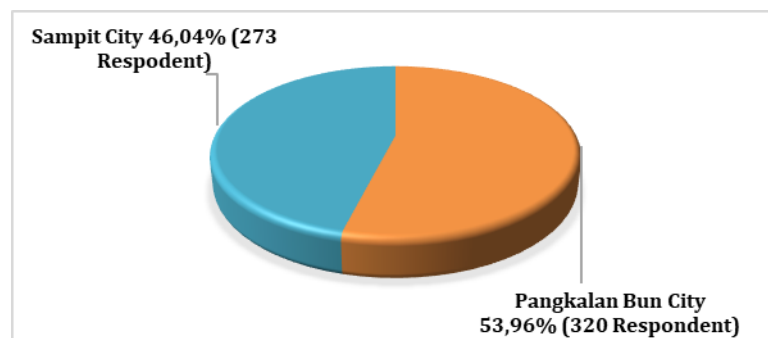


Fig 3: Location of Preferred Vocational College Establishment by Respondents

The majority of respondents have a moderate or higher level of confidence in the career or profession they wish to achieve after completing their higher education. Approximately 39.21% of respondents feel confident. Meanwhile, only 16.99% are very confident. About 35.41% of respondents are moderately confident about their career plans. However, around 1.69% of respondents feel very unsure, and 7.08% are not confident. This relatively high level of confidence reflects students' optimism about their future and underscores the importance of education in achieving career goals. Additionally, this confidence reflects a positive view of the expected quality and relevance of vocational education, demonstrating a strong hope for acquiring the skills needed for the job market. The belief in achieving a career after graduation shows that respondents have high confidence in the benefits of higher education for achieving their career goals. A total of 39.29% stated they were confident, and 21.92% were very confident. This confidence reflects a positive perception of the role of higher education in preparing students for the workforce. It also underscores the importance of a curriculum aligned with industry needs to boost this confidence. The majority of respondents (39.46%) rated the relevance of the study program to industry as fairly important, with 33.56% stating it is important and 22.93% indicating it is very important. This

demonstrates an awareness of the importance of education's relevance to local industry needs. Such relevance is essential to ensure that graduates possess the skills demanded by the labor market. The majority of respondents (40.64%) are confident that vocational colleges will prepare them as job-ready workers, while 25.97% are very confident.

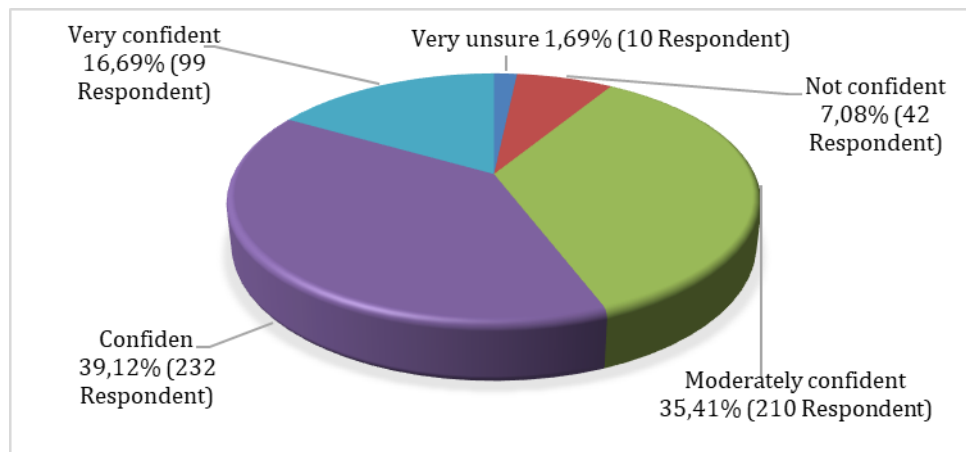


Fig 4: Overview of Respondents Confidence in Career/Professional Development Choices

This reflects high expectations for the role of vocational education in preparing students for the workforce, emphasizing the need for educational programs focused on practical skills and employability. Financial readiness to pursue higher education varies among respondents. A total of 33.05% feel fairly confident, while 31.89% feel less confident. This indicates concerns or uncertainty about financial resources among students. Financial literacy significantly influences financial attitudes, which, in turn, significantly impacts financial behavior (Yahaya et al., 2019). This uncertainty highlights the importance of financial support, such as scholarships or assistance programs, to help students continue their education.

Regarding the establishment of vocational colleges, the majority of respondents (59.7%) expect the government to provide affordable and high-quality education, along with adequate facilities and infrastructure. These expectations reflect the urgent need for broader access to quality education (Park et al., 2020) to enhance the skills and knowledge of the local population. The respondents' expectations indicate that the community is highly aware of the importance of vocational education as a means to address economic and social challenges in the region. Affordable and high-quality vocational education can offer greater opportunities for young people to acquire skills that are relevant to local industry needs. This will not only help reduce unemployment but also ensure that the existing workforce has the necessary skills to compete in an increasingly competitive job market. The government plays a key role in realizing these expectations. Government support may include

funding for the construction and maintenance of educational facilities, providing scholarships for outstanding and underprivileged students, and developing curriculum that align with industry developments. Adequate facilities and infrastructure are crucial for supporting effective teaching and learning processes. Laboratories equipped with modern equipment, access to the latest technology, and a conducive learning environment are all necessary. Good infrastructure will also attract more students (Walter Alexander Mata-López & Tobon, 2018), and enable educational institutions to offer more diverse and relevant programs tailored to industry needs.

Interviews with school administrators indicate that vocational schools have established collaborations with industry partners, which are crucial in ensuring that graduates acquire skills aligned with labor market demands (Ahmed et al., 2022). Various strategic initiatives have been implemented, including industry-driven curriculum development, internship programs, competency certification, educator capacity enhancement, and the establishment of industry-specific training programs and production units. Additionally, direct recruitment programs and partnerships with government institutions and professional associations further strengthen the alignment between vocational education and workforce requirements. These efforts aim to enhance graduates' employability and competitiveness in the global labor market. However, challenges such as limited infrastructure, gaps between theoretical knowledge and practical application (Ahmed et al., 2022; O'Dwyer et al., 2023), and the rapidly evolving needs of industries must be addressed through continuous innovation and closer collaboration. By fostering strong synergy between the education sector and industry stakeholders, vocational schools can produce competitive and adaptable graduates capable of contributing to sustainable economic growth.

Moreover, the government can encourage collaboration between vocational education institutions and the private sector to ensure that the educational programs offered align with labor market needs. It is expected that the government will not only provide funding but also offer incentives to companies that collaborate with vocational institutions. Policies supporting vocational education development, as outlined in Government Regulation Number 45 of 2019 regarding Amendments to Government Regulation Number 94 of 2010 on the Calculation of Taxable Income and Income Tax Payment in the Current Year, should continue to be enhanced (Peraturan Pemerintah No. 45 / 2019 - Pajak, 2019). Teacher training programs and improvements in education quality through accreditation and strict standards are also key elements in vocational education development. In the long term, affordable and high-quality vocational education will bring significant benefits to society by creating a more skilled and productive workforce, which will, in turn, drive local economic growth.

The community's expectations for the establishment of affordable and high-quality vocational colleges reflect an awareness of the importance of education in preparing for a better future. The government is expected to take the necessary steps to meet these expectations by providing adequate facilities, infrastructure, and policy support. By doing so, the local population will have better opportunities to improve their living standards through enhanced skills and knowledge.

Conclusion

This study affirms the urgent need for vocational education in Kotawaringin, Central Kalimantan, aligning with industry demands and public expectations for affordable and high-quality education. The findings reveal a strong interest in vocational education that is closely aligned with local industries, with the majority of respondents believing that vocational training plays a crucial role in preparing them for the workforce. The uneven distribution of respondents based on gender, school background, and grade level indicates key factors that must be considered in formulating educational policies. Most students prefer to enter the workforce immediately after graduation rather than pursuing higher education, primarily due to economic factors and perceptions regarding the job prospects of university graduates. Career interests are predominantly focused on the mining, agriculture, and economic sectors, with career choices largely driven by personal interests.

Furthermore, this study highlights the need for a more comprehensive strategy to bridge the gap between students' career choices and long-term employment prospects. Schools should enhance outreach efforts regarding the benefits of higher education, while governments and educational institutions need to expand scholarship opportunities and strengthen internship programs and industry partnerships. With a more targeted approach, graduates are expected to be better prepared to enter the workforce or pursue higher education in line with labor market demands and regional development needs.

The government must optimize vocational education policies through several strategic measures. First, strengthening collaboration between vocational schools and industries through a sustainable link and match program, including incentives for companies actively involved in student training. Second, increasing investment in infrastructure and practical facilities, such as modern laboratories and technology-based equipment. Third, developing industry-recognized competency certification programs to ensure graduates meet the skill standards required by the labor market. Fourth, enhancing teachers' capacity through continuous training and industry internships to keep them updated with technological advancements. Fifth, promoting curriculum flexibility based on regional needs and global trends, including strengthening entrepreneurship education. Lastly,

providing access to scholarships and financial assistance for students from underprivileged families to ensure they can complete vocational education without financial constraints.

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