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Optimizing Students' Digital Marketing Skills through the Utilization of Google Trends at SMKN 1 Bawen

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Abstract: *This community service program aimed to improve students digital marketing competencies through training on the use of Google Trends at SMKN 1 Bawen. This program aims to address the limited ability of students to utilize data-based tools for market analysis, and was attended by 90 students. A participatory training approach was implemented, consisting of interactive lectures, demonstrations, hands-on practice, and evaluation activities. The results, based on observational assessments and participant feedback, indicate improvements in students' digital skills, particularly in trend analysis, data interpretation, and the application of insights to academic projects. Most participants demonstrated increased engagement during training sessions and reported higher confidence in using data analysis tools. In addition, students showed emerging abilities to connect trend data with market opportunities and develop project ideas accordingly. Overall, the program contributed to enhancing students' data literacy and promoting more effective use of digital tools in learning. These findings suggest that practice-based training can support the development of data-driven competencies in vocational education.*

1. INTRODUCTION

The rapid advancement of digital technologies has fundamentally transformed both education and the labor market, requiring vocational students to develop competencies that align with industry demands. Among these, the ability to interpret and utilize data strategically has become increasingly essential, particularly in digital marketing, where data-driven insights are critical for understanding market dynamics and consumer behavior (Chaffey, Dave; Ellis-Chadwick, 2019). Despite this growing demand, many vocational education practices still emphasize general digital skills, such as social media usage, rather than analytical competencies based on real-time data. As a vocational education institution, SMKN 1 Bawen plays a strategic role in preparing students for the workforce. However, preliminary observations reveal that students' ability to utilize data-driven tools for marketing analysis remains limited. Existing digital marketing training programs in vocational settings often focus on content creation and platform

utilization, with insufficient emphasis on data interpretation and trend analysis. This indicates a critical gap between current training practices and the competencies required in data-driven industries. In this context, Google Trends offers a distinct advantage as an accessible and real-time data analytics tool that enables users to explore search behavior, identify emerging trends, and generate market insights. Unlike conventional digital marketing tools, Google Trends supports exploratory and analytical learning by allowing students to engage directly with dynamic data. Recent studies highlight that integrating data analytics tools into learning environments significantly enhances students' analytical thinking and decision-making skills (Mikalef et al., 2019) (Organisation for Economic Co-operation and Development (OECD), 2021). However, the application of such tools in vocational education, particularly in hands-on training contexts, remains underexplored. Therefore, this community service program was designed to address this gap by introducing a practice-based training model centered on the use of Google Trends. The program aims to enhance students' competencies in analyzing market trends and applying data insights to digital marketing strategies. Furthermore, this intervention seeks to promote digital literacy, foster creativity and innovation, and support the development of data-driven entrepreneurial mindsets among vocational students.

2. METHOD

This community service program employed a participatory approach, actively involving students in all stages of the activity to ensure alignment with their learning needs. The program was conducted at SMKN 1 Bawen and involved 90 students from digital and agribusiness-related study programs. The training was delivered in a one-day session (approximately 1–2 hours total), consisting of interactive lectures, guided demonstrations, hands-on practice using Google Trends, and group discussions. To evaluate the effectiveness of the program, a combination of pre-test and post-test assessments, observation rubrics, and participant feedback questionnaires was used. The pre-test and post-test measured students' competencies in trend analysis, data interpretation, and application of insights. Observation rubrics were used to assess student engagement and participation during the training, while questionnaires captured participants' perceptions and satisfaction levels. Program effectiveness was determined by comparing pre-test and post-test results, as well as analyzing improvements in students' performance during hands-on activities. In

addition, qualitative data from observations and participant reflections were used to provide deeper insights into behavioral changes and learning outcomes. The implementation of the program followed four main stages: (1) preparation, including needs analysis and material development; (2) implementation, consisting of training delivery and practical activities; (3) evaluation, involving assessment and feedback collection; and (4) follow-up, focusing on mentoring and the application of acquired skills in academic or entrepreneurial projects.

2.1. Activity Flow Diagram

As an overview of the activity flow, the implementation process of the community service program can be visualized in the following diagram:

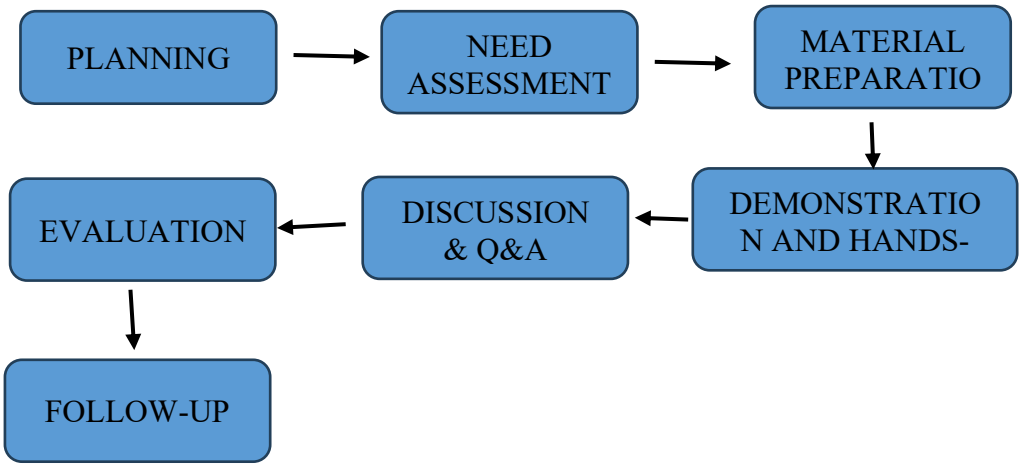

Figure 1. Activity Flow Diagram

3. RESULT

The implementation of this community service program at SMKN 1 Bawen demonstrated measurable improvements in students' competencies in data-driven digital marketing using Google Trends. Based on the pre-test and post-test results, students' average competency scores increased from 56.3 (pre-test) to 82.7 (post-test), indicating an improvement of approximately 46.9%. The most significant gains were observed in trend analysis and data interpretation skills. In addition, observation results showed that 85% of students actively participated during hands-on sessions, reflecting high engagement levels.

In terms of practical outcomes, a total of 18 student projects were successfully produced, including market analysis reports and trend-based business ideas. Approximately 72% of students

were able to independently analyze keyword trends and interpret search data, while 68% demonstrated the ability to apply insights to marketing-related tasks**.**

From a behavioral perspective, feedback questionnaires indicated that 90% of participants reported increased confidence in using digital data analysis tools, and 87% stated that the training provided new and useful insights**.** Furthermore, instructors observed noticeable improvements in students' analytical thinking and problem-solving abilities throughout the training. The integration of training outcomes into classroom activities was also evident, as students and teachers began to utilize Google Trends in academic assignments and project-based learning. This indicates a shift toward more data-driven learning practices within the school environment. To provide a clearer overview of the program outcomes, a summary of the training achievements is presented in Table 1.

Table 1. Summary of Google Trends Training Outcomes

No	Assessed Aspect	Indicator	Result (%) / Output
1	Digital Skills	Ability to operate Google Trends	78% achieved competency
2	Data Analysis Skills	Ability to analyze and interpret trends	72% achieved competency
3	Digital Literacy	Understanding of data utilization	80% good level
4	Creativity	Development of trend-based project ideas	18 projects produced
5	Entrepreneurship	Interest in business ideas based on trends	65% showed interest
6	Participation	Active engagement during training	85% active

4. DISCUSSION

The findings of this community service program at SMKN 1 Bawen confirm that practice-based training significantly improves students' digital and data analysis competencies. This result is consistent with recent studies on educational interventions that emphasize the effectiveness of hands-on and experiential learning in developing applied skills and digital literacy (Organisation for Economic Co-operation and Development (OECD), 2021) (Mikalef et al., 2019). Compared to previous digital marketing training programs, which often focus on content creation and platform usage, this program places greater emphasis on data interpretation and analytical thinking, thereby addressing a critical competency gap in vocational education.

The effectiveness of Google Trends in this context can be explained by three main factors.

First, its accessibility and real-time data features allow students to directly explore current market trends, making the learning process more relevant and contextual. Second, the visual and comparative nature of the platform supports intuitive understanding of complex data, enabling students to quickly grasp patterns in consumer behavior. Third, its application to locally relevant topics—such as agricultural products and small business opportunities—enhances students' ability to connect data insights with real-world conditions. These characteristics make Google Trends particularly suitable for vocational students who require practical and industry-relevant learning experiences.

Furthermore, the observed increase in students' awareness of market trends and consumer behavior indicates that the program effectively bridges the gap between educational practices and labor market demands. This aligns with digital marketing principles that highlight the importance of data-driven decision-making in developing effective strategies (Chaffey, Dave; Ellis-Chadwick, 2019). In addition, the emergence of entrepreneurial ideas among students supports previous findings that data utilization can stimulate innovation and improve business decision-making (Mikalef et al., 2019).

From a social perspective, the shift in students' use of technology—from entertainment-oriented to productive and analytical purposes—reflects a meaningful behavioral transformation. The active participation observed during the program also reinforces the value of participatory approaches in community service, as it promotes engagement, ownership, and the emergence of student-led learning dynamics (Cornwall, 2008). The appearance of peer facilitators (local leaders) further indicates the development of collaborative and leadership competencies among participants. Overall, these findings suggest that integrating data-driven tools such as Google Trends into vocational learning environments is not only effective in improving technical skills but also in fostering analytical thinking, entrepreneurial awareness, and adaptive learning behaviors. This highlights the importance of designing community service programs that are both practice-oriented and aligned with real-world industry needs.

Figure 2. Digital Marketing Participants Utilizing Google Trends

Figure 3. Presentation of Google Trends Material

5. CONCLUSION

Overall, this community service program conducted at SMKN 1 Bawen demonstrates that training using Google Trends effectively enhances students' competencies in data analysis, digital literacy, and market understanding. The findings reinforce the effectiveness of experiential, practice-based learning in vocational education, particularly in developing applied and analytical skills.

5.1. Practical implications.

These results suggest that data-driven tools such as Google Trends should be systematically integrated into the vocational curriculum, especially within digital marketing and entrepreneurship subjects. This integration can be implemented through project-based learning, case-based

assignments, and cross-disciplinary activities (e.g., linking agribusiness products with market trend analysis), enabling students to apply data insights in real-world contexts.

5.2. Limitations.

Despite these positive outcomes, the program was conducted in a single institution with a relatively limited scope and short duration, which may restrict the generalizability of the findings. In addition, the evaluation primarily focused on short-term learning gains and did not capture long-term skill retention or real-world application.

5.3. Future recommendations.

Future initiatives should involve multiple schools and larger participant groups to improve external validity. Extending the duration of training and incorporating longitudinal evaluation (e.g., follow-up assessments or project tracking) are also recommended to measure sustained impact. Furthermore, collaboration with industry partners and the integration of more advanced analytics tools (e.g., SEO platforms or business intelligence tools) could enhance students' readiness for data-driven workplaces.

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