Smart Design: Integrating AI-Assisted Visual Design and Creative Entrepreneurship in Vocational Education

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DOI: https://doi.org/10.51584/IJRIAS.2026.11100115

Received: 18 October 2026; Accepted: 23 October 2026; Published: 18 November 2026

ABSTRACT

The increasing use of generative artificial intelligence (AI) in creative industries presents opportunities for vocational high school students to develop digital competencies and explore creative entrepreneurship. However, students require more than just technical knowledge, but also need a practical guidance in producing visual materials and preparing design service for potential customers. This article describes the "Smart Design" Community Service Program, which integrates AI literacy, AI-assisted visual design, and an introduction to entrepreneurship. The primary contribution of this article lies in documenting the program's implementation approach, initial learning evaluation results, practical outputs, and insights relevant to vocational high school education. The program involved 29 students and employed an active mentoring approach alongside project-based learning. Program evaluation was conducted through pre-test and post-test, as well as the documentation of outputs produced by the students. The result indicates an increase in the average assessment score before and after the training session with several practical outputs including business logos, promotional posters, banners, social media content, digital portfolios, and service price lists. The program also initiated the "Bina Utama Creative Hub" and provided an electronic learning module to ensure the sustainability of the learning process. Further evaluation is necessary to assess the quality of the designs, the long-term application of the students' skills, and tangible entrepreneurial achievements.

Keywords: artificial intelligence, visual design, creative entrepreneurship, digital literacy, community engagement

INTRODUCTION

The development of digital technology and artificial intelligence (AI) has opened new opportunities in the dynamic of creative industries, digital marketing, and entrepreneurship. Visual content, such as logos, promotional posters, product images, and social media content play an important role in building brand identity and communicating product value to customers. For micro, small, and medium enterprises (MSMEs), the ability to produce attractive visual content that suits market needs is one of the supporting aspects of digital marketing through social media and other online platforms (Qadri & Tyana, 2024). The development of generative artificial intelligence technology also presents alternatives to help the visual content production process more easily and efficiently. However, utilizing this technology requires sufficient digital skills so that users can operate the device, compose appropriate instructions, evaluate results, and apply the technology responsibly (Tanjung et al., 2024).

The need for digital skills is relevant to vocational education which is oriented towards developing practical competencies for entering the world of work and building businesses. Digital literacy and entrepreneurship knowledge are an important aspect in preparing vocational high school students to face digital economic development. Studies on vocational students' readiness to face the digital economy shows the importance of developing digital literacy, adaptability in entrepreneurship, and integrated digital entrepreneurship education (Andrianti et al., 2023). Artificial intelligence utilization is proposed to help students produce

various creative materials, but it needs to be accompanied by the ability to connect the results with user needs and business opportunities (W & Hura, 2026). Thus, learning this needs to be directed not only for mastering the tools, but also the development of practical skills and a basic understanding of the commercial value of the work produced (Febrianawati et al., 2024b).

Based on the initial observation and discussions with the school, SMK Bina Utama Pontianak, possesses the potential to develop students' digital skills and creative entrepreneurship. The school is equipped with computer laboratories and serves student across various vocational programs . Nevertheless, the current situation indicates that students require further support in recognizing and leveraging generative artificial intelligence technology for visual design. This existing design production process, which remains largely conventional, is perceived as time-consuming and demanding in terms of technical expertise. Furthermore, there is a prevailing belief that creating professional-grade designs necessitates high-specification computer hardware and expensive with the licensed software. These factors hinder students from exploring digital designs technologies more productively (Dito et al., 2025).

Other challenges faced by the SMK Bina Utama Pontianak also encompass aspects of entrepreneurship and the marketing of their creative work. Students require not only skills in producing visual designs but also a guidance in developing digital portfolios, building personal brands, creating service price lists, and identifying marketing channels through which they can offer their design services. Without such understanding, the design skills acquired through their studies may remain limited to the completion of academic assignments, failing to translate into the development of business opportunities. This need aligns with the importance of strengthening entrepreneurial literacy among the younger generation and vocational high school students (Firman et al., 2023; Octaviani et al., 2024), as well as developing digital marketing competencies through the utilization of artificial intelligence technology (Dito et al., 2025).

Given these conditions, the core issue addressed by this program is the gap between technical skills in creating visual designs and the foundational ability to package and market such work as a service with economic potential (Munthe et al., 2024). This challenge highlights the need for a training approach that integrates mastery of the artificial intelligence technology with the development of creative entrepreneurial competencies. Training focused solely on the use of software applications is insufficient to cover the entire process of developing design services (Anurogo et al., 2023). Conversely, introducing entrepreneurship without practical experience in visual production may limit students' ability to create products that meet market demands. Therefore, the intervention must encompass both the production of visual work and a knowledge of managing then marketing the design services.

Departing from this, a community service program using artificial intelligence for vocational high school students called "The program employs an active mentoring and project-based learning approach, incorporating both training and hands-on practice. The program covers the introduction and utilization of generative artificial intelligence platform, such as Canva Magic Studio, Leonardo.ai, and Bing Image Creator, along with prompt engineering techniques, fundamental principles of visual design, and the responsible use of technology. Students are also guided in creating visual assets, including business logos, promotional posters, and social media content. Bridging the gap between production skills and entrepreneurship, the program includes mentorship on developing digital portfolios and pricing lists for design services. This approach is designed to provide a learning experience that connects technical proficiency with practical application within the context of the creative industry (Serah et al., 2025).

This article presents a community engagement initiative that integrates generative artificial intelligence, visual design practice, and introductory creative entrepreneurship in vocational high school. Its primary contribution is to document the design and implementation of a practical learning approach in which students are guided to use AI-assisted tools to produce visual materials and prepare business-related outputs, such as digital portfolios and service pricelist. The article also describes the program's immediate learning assessment results and supporting initiatives for continued learning. Rather than claiming to establish professional design competence or successful business creation, the article provides an account of the program's implementation, documented outputs, and lessons for future initiatives. It also identifies

opportunities to strengthen assessment procedures and evaluates the long-term application of vocational high school students' skills (Febrianawati et al., 2024a; W & Hura, 2026).

Based on these issues, this initiative is directed toward addressing three questions: (1) how the implementation of the "Smart Design" program supports students' improved understanding of artificial intelligence and their artificial intelligence-assisted visual design skills; (2) how training and mentorship assist students in creating visual assets, compiling digital portfolios, and establishing price lists for design services; and (3) what outputs are generated to support the sustainable development of creative entrepreneurship within the school environment? These questions serve as the foundation for describing the implementation of the activities, evaluating changes in pre-test and post-test results, and identifying the outputs produced by the participants.

This initiative aims to improve students' grasp of artificial utilization, train them in creating visual assets for commercial purposes, and guide them in developing digital portfolios and pricing structures for design services. The program is also designed to ensure long-term sustainability through the initiation of a creative community, the "Bina Utama Creative Hub," and the provision of an electronic module. Program outcomes are evaluated based on pre- and post-training assessments, as well as documentation of the project deliverables.

The Smart Design program is conceptually grounded in AI literacy and creative entrepreneurship. AI literacy encompasses the knowledge and skills required to understand, implement, and engage with artificial intelligence responsibly (Miao et al., 2024). In this program, this perspective is reflected in the introduction to AI concepts and their practical use of AI-assisted visual design tools. While creative entrepreneurship concerns the application of creativity to the development of ideas, products, and services with potential economic values (Fillis & Rentschler, 2010). Within the program, this concept is reflected in activities that connect visual design production. Together, AI literacy and creative entrepreneurship provide a conceptual basis for understanding how AI-assisted creative activities can relate to introductory business preparation in vocational high school education. These concepts guide the implementation of the program's activities and outputs which they are not treated as competencies that were comprehensively measured by the program evaluation.

METHODOLOGY

The Smart Design Community Service Program is implemented at SMKK Bina Utama, Pontianak, West Kalimantan, Indonesia, in collaboration with Universitas Panca Bhakti. The program aims to strengthen AI literacy, develop AI-assisted visual design skills, and introduce students to fundamental competencies in creative industries. The program employs two primary approaches, including active mentoring and project-based learning. Active mentoring provides guidance throughout the training sessions and workshops, while project-based learning enables students to apply their knowledge by creating visual materials. The learning activities integrate the use of generative-AI tools with basic business preparation, specifically with the development of digital portfolios and price list for services.

In total, the program consists of 12 activities started from January 2026 to June 2026, followed by publication efforts. The sequence activities include initial observation, coordination with the school, proposal development, training and workshop development, preparation, implementation, report writing, and the dissemination of results. The core educational intervention takes place through training session and workshop titled "Smart Design: Building the Visual Business with Artificial Intelligence (AI)" held at SMK Bina Utama Pontianak in February 2026.

There were 29 students from SMK Bina Utama Pontianak that involved in these activities. Participant recruitment was coordinated with the school, with priority given to student council (OSIS) members and 12th grade students. The school also supported the program's implementation by coordinating activities and providing the necessary facilities. Participants took part in training sessions and workshop designed to develop AI literacy, AI-assisted visual design skills, and a foundational understanding of creative entrepreneurship.

The learning activities introduced students to various generative AI platforms, encompasses Canva Magic Studio, Bing Image Creator, and Leonardo.ai. They utilized AI-powered tools to complete visual design tasks and develop materials tailored for promotional and business purposes. A project-based learning approach emphasizes the creation of tangible outputs. They produced business logo, banners, and social media feed content. The entrepreneurial component also includes guidance on compiling digital portfolios and service price lists, enabling them to showcase their work and potential design services to prospective customers. According to program documentation, all participants who completed the training and workshop successfully produced digital portfolios and service price lists. These outputs serve as an initial step in preparing them to offer their design services.

The program evaluation employs pre-training and post-training tests (pre-test and post-test), each consisting of 10 questions, to assess participants' understanding of AI concepts and their application before and after the sessions. The pre-test was administered before the workshop and training sessions, while the post-test was conducted afterward. The questions covered indicators of AI knowledge encompasses the definition of AI, basic concepts and application of AI, examples of AI in daily life, categories of ChatGPT applications, the primary functions of AI chatbots, the definition of a large language model (LLM), example of AI chatbots, the function of text-to-image technology, examples of AI-based image generation tools, and the purpose of the Turing Test. The assessment results are used to describe changes in participants' performance regarding the knowledge-based questions provided. In addition to knowledge assessments, the program evaluation includes the documentation and review of practical outputs.

RESULTS

According to the results, all participants showed an improvement for ten questions concerning knowledge of AI following the training and workshop activities. The average assessment score increased from 47.5 in the pre-training (pre-test) to 88.2 in the post-training (post-test) sessions. Several areas showed improvements, including an understanding of the term "artificial intelligence," the recognition of ChatGPT as an AI chatbot, and an understanding of large language models. However, the reported changes were not uniform across all indicators. Recognition of Google Maps as an example of Ai in everyday life decreased slightly, while recognition of MidJourney as an AI image-generation tool showed only a small increase.

Participants successfully compiled digital portfolios and service pricelists for their design work. These outputs provided students with foundational experience in organizing their visual design projects and presenting services that could potentially be offered to customers. Nevertheless, the existence of a portfolio and a price list do not confirm professional-level design mastery, commercial readiness, or actual business success. It only represents the AI-assisted visual design practice and entrepreneurial outcomes of these community service program.

The entrepreneurship aspect of this Smart Design program focused on introducing participants to the initial steps of presenting and offering visual design services. Participants who attended the practical session prepared digital portfolios to organize their work and price lists to communicate potential design offerings. These activities provided an introducing to presenting creative outputs in a business-oriented context.

Beyond the workshop and training sessions, the program yielded several documented outputs, including student digital portfolios, design service price lists, the initiation of the "Bina Utama Creative Hub," and the provision of "Smart Design" electronic learning module. The creative hub was initiated as a potential platform to foster ongoing student collaboration, while the electronic learning module serves as a resource for future educational activities.

Figure 1 and Figure 2 presents the documentations of program sessions including workshop session, training session, interaction between participants and mentors, and the participation of the school community. It provides insight into the execution of the program and its practical learning activities. Furthermore, this program activities were featured across several digital media outlets, including Kalbar News, Harian Berkat, and Klik Warta Ku which documented the training sessions and disseminated information regarding the use of artificial intelligence to enhance the creative skills of high school vocational students.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue X October 2026



Figure 1. Training and Workshop Sessions at SMK Bina Utama

Source: Authors' Documentation



Figure 2: Program Participants and Team

Source: Authors' Documentation

Although participants produced digital portfolios and design service price lists during the practical activities, the program records did not include a formal rubric for evaluating the quality of the resulting designs. Therefore, the outputs are reported as evidence of participation in practical learning activities rather than as independently assessed measures of design competences. In addition, example of participants' design products was not included in the available program documentation presented in this article. Figure 3 presents documentation of the practical session in which participants created visual design materials with mentor.



Figure 3: Practical Session with Mentor

Source: Authors' Documentation

DISCUSSION

The average assessment score increased from 47.5 before the workshop and training sessions to 88.2 afterwards. This improvement indicates an enhancement in the participants' average performance on an

assessment of their knowledge regarding artificial intelligence (AI) following their participation in the Smart Design program. It was also highlighted improvements in several areas, including an understanding of AI-related terminology, familiarity with ChatGPT as an AI-based chatbot, and comprehension of large language model (LLM). These findings align with previous study on AI-based digital marketing training for vocational high school students (Dito et al., 2025). The use of identical questions for both tests assessments may also have influenced the post-training results.

The reported outcomes also varied across the ten specific AI knowledge indicators. Recognition of Google Maps as an example of AI application in daily life showed a slight decline, while familiarity with MidJourney showed only a marginal increase. This pattern suggests that participants' responses varied depending on the specific AI topic covered.

In addition to enhancing foundational knowledge of AI, the Smart Design program integrated AI-assisted visual design practice with an introduction to entrepreneurial skills. Through these practical activities, participants produced visual materials, compiled digital portfolios, and develop service price lists. These outcomes illustrate how technical skills training can be linked to foundational business preparation within vocational high school students. Digital portfolios help students organize and showcase their design work, while service price lists introduce the fundamental process of presenting service offerings to potential clients. Nevertheless, these outputs should be viewed as initial learning outcomes rather than evidence of professional-level design mastery, commercial readiness, or successful business development.

The initiation of "Bina Utama Creative Hub" and the provision of "Smart Design" electronic learning module were several supporting efforts to support continuous learning. The creative hub was intended to provide a space for collaboration, while the module roles as a learning source for future educational activities. However, the initiation of these initiatives does not, by itself, demonstrate sustained usefulness will depend on school support, student engagement, access to relevant tools, and opportunities to apply the acquired skills. Therefore, a follow-up evaluation is needed to examine whether participants continue to use the module, participate in collaborative design activities, and apply their skills in practical or entrepreneurial contexts.

Overall, this community service initiative provides an example of a combination of AI literacy, practical visual design activities, and introductory creative entrepreneurship in a vocational high school setting. Its immediate outputs demonstrate the feasibility of integrating these elements within a training program.

CONCLUSION

The Smart Design community service program which involved high school vocational students from SMK Bina Utama Pontianak integrated training in artificial intelligence literacy, visual design practice, and mentorship in creative entrepreneurship. According to the result, the participants' average score rose from the pre-test to post-test. These results indicate an improvement in the participants' knowledge following the program. However, as the evaluation lacked a control group, it cannot be concluded that this improvement was solely attributable to the training.

Beyond the gains in evaluation scores, the program yielded various practical outputs, including business logos, promotional posters, banners, social media content, digital portfolios, and price lists for design services. The program also initiated the establishment of the "Bina Utama Creative Hub" and provided the school with a "Smart Design" electronic module to support the sustainability of student learning and skill development.

Overall, the Smart Design program offers an integrated approach that bridges artificial literacy, visual design skills, and an introduction to entrepreneurship within vocational education. To optimize long-term impact, further mentorship is required, along with strengthened practice in using generative artificial intelligence for visual design, as well as ongoing monitoring of the Bina Utama Creative Hub and the application of students' skills in real-world projects. Future evaluations should also assess the extent to which these skills evolve into sustainable creative business ventures.

ACKNOWLEDGEMENT

The authors gratefully acknowledge Universitas Panca Bhakti for providing financial support for the implementation of this community engagement program. The authors also extend their sincere appreciation to SMK Bina Utama Pontianak for its collaboration and support throughout the training and mentoring activities. Special thanks are extended to all the participants for their participation and enthusiasm, which contributed to the implementation of the program.

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Ethical Considerations

The Smart Design program was implemented in coordination with SMK Bina Utama Pontianak. The publication of photographs and student-generated design outputs should follow the relevant institutional requirements and applicable consent procedures. Any photographs or student works included in the article should be used only after necessary permissions have been confirmed.

Data Availability

The supporting data of the findings of this community engagement program are available from the corresponding author upon reasonable request, subject to applicable privacy and confidentiality considerations regarding the student participants.