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Interactive Learning Innovation: Utilizing Canva and Quizizz to Boost Motivation and Digital Literacy

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ABSTRACT

The rapid development of digital technology in education has created new challenges for schools, particularly in fostering student motivation and digital literacy. At SMK Nurul Abror Al Robbaniyin, learning activities were still dominated by conventional lecture-based methods, resulting in limited student engagement and low utilization of educational technology for creative learning. This community service program aimed to enhance students' learning motivation and digital literacy through the integration of interactive digital tools, specifically Canva and Quizizz. The program was implemented using a technology-integrated pedagogical approach that combined experiential learning with hands-on workshops. The activities included training sessions on designing educational infographics using Canva and participating in gamified learning assessments through Quizizz. The results demonstrated significant improvements in students' participation, motivation, and ability to produce creative digital learning materials. Students showed increased enthusiasm during interactive quizzes and successfully created visually structured educational content. These outcomes indicate that integrating visual design platforms and gamified assessment tools can transform passive learning environments into more engaging and participatory experiences. The program concludes that the adoption of interactive educational technology can strengthen digital competencies and support sustainable learning innovation in vocational education settings. This initiative contributes to community empowerment by equipping students with practical digital skills necessary for lifelong learning and future professional readiness.

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INTRODUCTION

The rapid digital transformation characterizing the era of Education 4.0 has significantly reshaped the landscape of contemporary learning

environments. Educational institutions are increasingly required to integrate digital technologies that support interactive, student-centered learning models aligned with the competencies demanded in the twenty-first century. In this context, educational technology (EdTech innovation) plays a pivotal role in fostering learning environments that encourage creativity, collaboration, and critical thinking. The integration of interactive digital platforms enables educators to move beyond traditional instructional paradigms toward more dynamic forms of knowledge construction that resonate with digitally native learners (Nkosinkulu, 2024; Reid et al., 2023). Consequently, the adoption of innovative learning technologies has become an essential strategy to ensure that education remains relevant and responsive to the evolving digital ecosystem.

Within this transformation, learning motivation emerges as a central psychological factor influencing students' academic engagement and achievement. Motivation determines the extent to which learners actively participate in the learning process, sustain attention, and persist in completing academic tasks. However, maintaining high levels of engagement has become increasingly challenging in the post-pandemic educational landscape, where many students exhibit reduced enthusiasm and diminished interaction due to prolonged exposure to passive digital learning formats. Research indicates that interactive and participatory learning models significantly enhance motivation by providing immediate feedback, autonomy, and elements of challenge that stimulate cognitive engagement (Capone & Lepore, 2022; Dara & Kesavan, 2025). Therefore, educational innovations that integrate interactive pedagogy are essential for revitalizing student motivation in contemporary classrooms.

SMK Nurul Abror Al Robbaniyin, as a vocational secondary institution committed to preparing students for the demands of the modern workforce, faces the imperative of strengthening digital competencies among its learners. Vocational education inherently requires practical skills and technological adaptability, making the integration of digital learning tools particularly relevant. Nevertheless, many vocational schools in developing educational contexts still encounter difficulties in transitioning from conventional instructional practices toward technology-enhanced learning environments. Bridging this gap requires systematic efforts to introduce students to practical digital tools that cultivate creativity, technological fluency, and collaborative problem-solving abilities (Wang & Li, 2024; Wannapiroon & Pimdee, 2022).

Despite the growing importance of digital competencies, classroom practices in many educational settings remain dominated by traditional, one-directional instructional methods. Teacher-centered approaches, characterized by lecture-based delivery and limited student interaction, often result in low levels of enthusiasm and minimal participation among learners. Such approaches

not only reduce learning motivation but also hinder the development of essential digital literacy skills required in contemporary knowledge societies. Several studies have highlighted that passive instructional strategies frequently lead to disengagement, limited retention of knowledge, and inadequate opportunities for students to explore digital tools that support creative expression and critical inquiry (Gadot & Tsybulsky, 2023; Lazou & Tsinakos, 2023).

In response to these challenges, emerging educational technologies provide promising opportunities to transform passive learning into active engagement. Platforms such as Canva enable students to develop visual literacy by designing visually compelling presentations, infographics, and learning materials, thereby strengthening their ability to communicate information creatively. Meanwhile, Quizizz, as a gamified learning platform, introduces elements of gamification such as points, leaderboards, and instant feedback, which significantly enhance student participation and enjoyment in the learning process. When integrated into classroom activities, these tools support interactive pedagogy by encouraging collaboration, creativity, and real-time assessment that actively involves students in knowledge construction (Alam & Mohanty, 2023; Kwan et al., 2025).

Recent scholarly research increasingly emphasizes the effectiveness of gamification and visual-based learning in improving educational outcomes. Gamification strategies have been shown to enhance motivation, engagement, and learning persistence by incorporating game-like mechanics that stimulate curiosity and competition (Gaurina et al., 2025; Jayalath & Esichaikul, 2022). Similarly, visual learning approaches supported by digital design tools contribute to improved information retention and conceptual understanding, as visual representations allow learners to process complex information more effectively than text-based explanations alone (Nieto-Leal et al., 2026; Staneviciene & Žekienė, 2025). These findings collectively suggest that combining gamification and visual literacy within an EdTech-based learning environment can significantly enrich students' learning experiences.

Based on these considerations, this community service program aims to implement an interactive learning innovation through training activities that introduce students of SMK Nurul Abror Al Robbaniyin to the effective use of Canva and Quizizz in the learning process. The program seeks to enhance students' learning motivation, strengthen digital literacy, and promote a more engaging learning culture through the integration of gamification, visual literacy, and interactive pedagogy. By equipping students with practical skills in utilizing these digital tools, this initiative is expected to foster a more dynamic, participatory, and technologically adaptive educational environment that aligns with the broader objectives of EdTech innovation in contemporary education.

METHOD OF IMPLEMENTATION

The implementation of this community service program employed a pedagogical framework grounded in the Technological Pedagogical Content Knowledge (TPACK) model integrated with the principles of Experiential Learning. This synergistic integration emphasizes the alignment of technological tools, pedagogical strategies, and subject content to facilitate meaningful learning experiences. The program was conducted at SMK Nurul Abror Al Robbaniyin, involving students from various vocational majors as the primary target partners. Within this framework, the activity adopted a strategy of Active Digital Engagement, in which students were positioned not merely as recipients of instructional content but as active participants in constructing their own learning experiences through digital platforms. The approach encouraged learners to explore creative expression, collaborative interaction, and reflective practice while utilizing educational technology tools. By integrating hands-on digital activities with reflective learning processes, the program aimed to cultivate both learning motivation and digital literacy, thereby enabling students to develop competencies relevant to contemporary technology-driven learning environments.

The implementation process was carried out through three systematic stages: preparation, implementation, and evaluation, each designed to ensure pedagogical coherence and measurable outcomes. During the preparation stage, the service team developed structured training modules focusing on the effective use of Canva for visual content creation and Quizizz for gamified learning assessment. The digital learning environment was prepared by ensuring the availability of technological infrastructure, including laptops, smartphones, stable internet connectivity, Canva Pro for Education, and Quizizz Super accounts. In addition, a baseline survey was conducted to assess students' initial levels of learning motivation and digital literacy. The implementation stage involved a series of hands-on workshops where students actively engaged in designing educational infographics using Canva and participated in interactive gamified quizzes through Quizizz. These workshops were designed to foster collaborative learning, creativity, and real-time feedback mechanisms. The final stage involved a comprehensive evaluation using pre-test and post-test instruments to measure improvements in digital literacy competencies and student motivation levels. The program's success indicators included a minimum 70% improvement in post-test scores, the successful production of high-quality digital posters created by participants, and a measurable increase in student engagement during gamified learning sessions.

Table 1: Strategic Phases of EdTech Innovation Program

Phase	Key Activities	Expected Output / Deliverable
Preparation	Development of Canva and Quizizz training modules; preparation of digital infrastructure (laptops, smartphones, internet access); baseline survey on motivation and digital literacy	Structured training materials, prepared digital learning environment, and baseline data on student motivation and digital literacy
Implementation	Conducting hands-on workshops; training students to design educational infographics using Canva; facilitating gamified learning assessments through Quizizz	Student-created digital posters/infographics and active participation in gamified learning sessions
Evaluation	Administration of pre-test and post-test assessments; analysis of learning motivation and digital literacy improvement; monitoring student engagement metrics	Measurable learning outcomes, improved post-test scores (≥70%), and documented evidence of enhanced student engagement

RESULT AND DISCUSSION

The initial observation conducted prior to the implementation of the program revealed that students at SMK Nurul Abror Al Robbaniyin demonstrated relatively low levels of learning engagement and limited exposure to digital creativity tools. Classroom learning activities were predominantly characterized by teacher-centered instruction, where the dominant approach relied on conventional lectures and static presentation materials. Such pedagogical practices resulted in passive participation, minimal interaction, and restricted opportunities for students to develop visual literacy and digital competencies. Many students were familiar with basic internet use for entertainment or social communication; however, they had limited experience utilizing digital platforms for creative academic purposes. This situation reflects a broader challenge within vocational education contexts, where the gap between traditional teaching methods and the demands of interactive pedagogy often leads to reduced learning motivation and limited student agency in the learning process.

The EdTech innovation workshop introduced a transformative learning environment where students actively engaged with digital tools designed to stimulate creativity and participation. During the Canva training sessions, students were guided to explore visual design principles, including layout composition, color harmony, and infographic storytelling. Initially, many participants demonstrated basic familiarity with digital interfaces but lacked confidence in creating structured visual learning materials. Through guided practice and collaborative experimentation, students gradually transitioned from passive technology users into creative designers capable of producing visually engaging educational posters. Simultaneously, the integration of Quizizz as a gamified learning platform significantly increased student interaction during assessment activities. The combination of competition, real-time feedback, and

interactive quizzes transformed the learning atmosphere into a more dynamic and participatory environment.

Quantitative data collected through pre- and post-intervention assessments revealed substantial improvements in both learning motivation and digital literacy among participating students. The evaluation process included diagnostic tests administered prior to the workshop and follow-up assessments conducted after the completion of the training sessions. These results indicated a notable increase in students' ability to utilize digital tools effectively while also demonstrating greater enthusiasm and active engagement during learning activities. The comparative analysis of these indicators is presented in Table 1, which summarizes the measurable changes observed before and after the intervention.

Table 2. Comparative Analysis of Student Learning Motivation and Digital Literacy Scores

Indicator	Pre-Intervention (%)	Post-Intervention (%)	Gain Score
Learning Motivation	58	84	+26
Digital Literacy	52	82	+30
Interactive Participation	55	86	+31
Visual Design Competence	48	80	+32

The data presented in Table 2 demonstrates a significant increase across all measured indicators. Learning motivation increased by 26 percentage points, while digital literacy improved by 30 points following the intervention. Similarly, interactive participation and visual design competence showed the highest gain scores, reflecting the effectiveness of integrating gamification and visual-based learning into the instructional process. These findings suggest that the use of interactive digital tools can substantially enhance both cognitive and motivational dimensions of student learning.

Beyond the measurable improvements in test scores, the Canva-based activities produced tangible creative outputs that illustrated students' growing capacity for visual communication. Students were able to transform complex educational concepts into visually structured infographics that combined text, icons, and graphical elements to convey information effectively. Such outputs demonstrate the development of visual literacy, which plays a critical role in enhancing cognitive retention and conceptual understanding. As visual representations allow learners to process information through multiple cognitive channels, they significantly support deeper learning and knowledge organization. Examples of student-generated visual materials are illustrated below.

Figure 1. Sample of Student-Created Educational Infographics on Canva

The integration of Quizizz also had a profound impact on classroom dynamics by introducing gamified learning elements that stimulated enthusiasm and collaborative competition among students. The platform's features—such as real-time scoring, leaderboards, and instant feedback—created an engaging environment that encouraged students to actively participate in the learning process. During the quiz sessions, students displayed high levels of focus and excitement as they competed to achieve higher scores while simultaneously reinforcing their understanding of the learning materials. The interactive nature of the platform effectively transformed assessment activities from routine evaluation tasks into enjoyable learning experiences. Documentation of this interactive session is illustrated in the figure below.

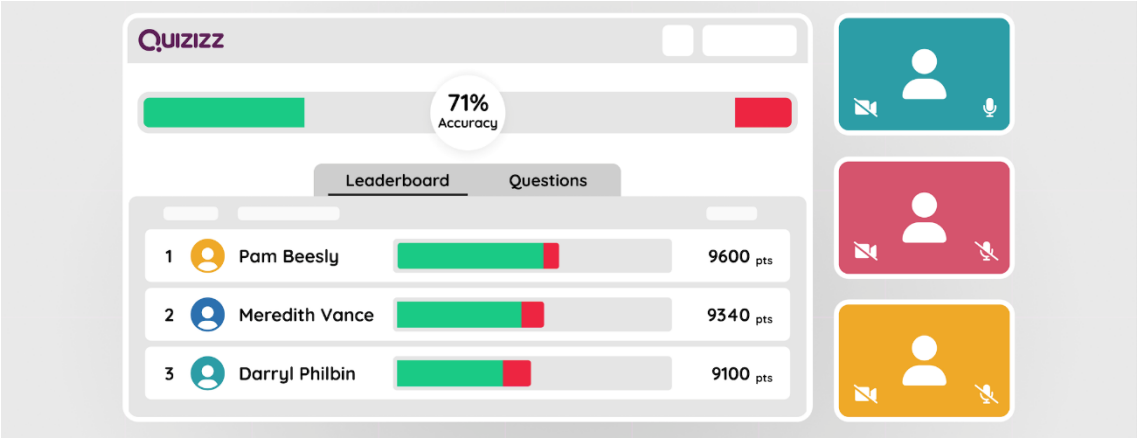

Figure 2. Interactive Gamified Quizizz Session and Engagement Analytics

From a theoretical perspective, the observed improvements in student engagement and motivation can be interpreted through the lens of Self-Determination Theory (SDT) and Flow Theory in educational psychology. According to SDT, learning environments that support autonomy, competence, and relatedness significantly enhance intrinsic motivation (Ryan & Deci, 2021). The Canva activities allowed students to exercise creative autonomy in designing visual materials, while the Quizizz platform provided immediate feedback that reinforced perceptions of competence. Additionally, the competitive yet collaborative atmosphere fostered social interaction among peers, fulfilling the need for relatedness. Recent studies have similarly demonstrated that the integration of gamification and visual learning tools can increase motivation, engagement, and knowledge retention in technology-enhanced learning environments (Luo, 2024; Rotar, 2025; Zhang & Miao, 2025).

In the broader context of educational innovation, this community service initiative has contributed to the development of a more sustainable digital learning culture within SMK Nurul Abror Al Robbaniyin. By introducing practical EdTech tools and encouraging students to actively create and interact with digital content, the program has shifted the perception of technology from a passive consumption medium to a productive learning resource. The integration of interactive pedagogy, gamification, and visual literacy has demonstrated its potential to empower vocational students with the competencies required for lifelong learning in the digital era. Consequently, this intervention not only enhanced immediate learning outcomes but also laid the foundation for continued digital innovation in the school's educational practices.

CONCLUSION

The implementation of the EdTech-based community service program at SMK Nurul Abror Al Robbaniyin has demonstrated a meaningful pedagogical transformation in the learning environment. Through the strategic integration of Canva as a visual design platform and Quizizz as a gamified assessment tool, the learning process shifted from conventional lecture-dominated instruction toward a more dynamic and interactive pedagogical model. This transformation was reflected in the observable increase in student engagement, the improvement of learning motivation, and the significant enhancement of digital literacy competencies among participating students. By engaging learners in visual content creation and interactive quiz-based activities, the program fostered active participation and strengthened technological fluency—two essential attributes for vocational students preparing to navigate the demands of the contemporary digital economy. The intervention therefore not only improved immediate learning outcomes but also empowered students with practical digital skills that

support creative thinking, collaborative learning, and adaptive problem-solving within technology-rich educational environments.

To ensure the sustainability of this innovation, several strategic initiatives are recommended to institutionalize interactive digital learning practices within the broader instructional ecosystem of the school. One key strategy involves integrating platforms such as Canva and Quizizz into the routine teaching curriculum across vocational subjects, enabling teachers to continuously implement interactive pedagogy that strengthens both conceptual understanding and technological competence. In addition, the establishment of a Digital Learning Peer-Mentor program among students can serve as a catalyst for sustaining digital innovation by encouraging peer-based knowledge sharing and collaborative skill development. Through this initiative, students who have demonstrated advanced digital competencies can guide their peers in utilizing educational technologies effectively. Expanding this EdTech-driven model across multiple vocational disciplines will contribute to the development of long-term pedagogical resilience, promote educational equity in digital access, and reinforce institutional excellence in preparing learners for a rapidly evolving technological future.

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