

Integrating Technology-Based Tools in the Digital Marketing Course to Enhance Vocational Students' Engagement and Competence in Promoting Local Culinary Destinations

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ABSTRACT

This study investigated the impact of integrating technology-based tools into a semester-long Digital Marketing course on vocational students' engagement and competence in promoting local culinary destinations. Conducted as a qualitative case study at a vocational institution in Indonesia, the research involved 28 students who participated in authentic, project-based learning tasks using tools such as AI-assisted video editors, social media analytics, and digital branding platforms. Data were collected through interviews, field observations, and analysis of student project artifacts. The results revealed increased behavioral, emotional, and cognitive engagement, driven by the relevance of the tools, the authenticity of tasks, and the public nature of the projects. Students also demonstrated meaningful competence in digital storytelling, campaign planning, and platform optimization. Furthermore, the study found emerging signs of critical digital literacy and professional identity development, as students reflected on ethical considerations and strategic decisions during content creation. These findings suggest that the thoughtful integration of real-world digital tools can enhance not only skill acquisition but also reflective and identity-forming dimensions of learning in vocational contexts. The study highlights the pedagogical value of designing curriculum-integrated, technology-enhanced instruction that aligns with both industry demands and community engagement.

Keywords: Vocational education, digital marketing, student engagement, technology integration, culinary promotion

1. INTRODUCTION

The advent of the Fourth Industrial Revolution, or Industry 4.0, has precipitated a paradigm shift in the organization of production, knowledge, and social interaction through the widespread adoption of digital technologies. Within this context, the integration of information and communication technologies (ICTs) into educational praxis is no longer a discretionary enhancement, but rather a critical imperative, particularly for vocational education and training (VET) institutions (Fischer-Browne, Ahrens, Kleinert, & Schels, 2024; Gupta, Mittal, Singh, & Dash, 2024; McGrath & Russon, 2023). These institutions face increasing expectations to deliver graduates who are not only proficient in domain-specific technical competencies but are also agile, digitally literate, and responsive to evolving industry requirements (Imjai, Promma, Usman, & Aujirapongpan, 2024; Kraus et al., 2022). The accelerated digitalization of economic sectors, with marketing serving as a salient example, necessitates a reconfiguration of vocational curricula beyond traditional didactic models. There is a compelling need to embed experiential and technology-mediated instructional strategies that authentically replicate the complexities and digital workflows of contemporary professional environments (Wang, 2024; Wong & Li, 2025). For vocational education providers, whose mandate is to cultivate industry-ready professionals within relatively compressed educational trajectories, the imperative to align pedagogical approaches with the realities of a digitally interconnected workforce is both urgent and non-negotiable.

A key area of curricular innovation within vocational education is the Digital Marketing course, which has become an integral component of information technology programs. This course is designed to equip students with a

diverse set of competencies, including creative content development, data-driven decision making, and effective engagement strategies for various social media platforms (Rosário & Dias, 2023). At Politeknik Nest, the implementation of a technology-enhanced Digital Marketing course extends beyond the acquisition of theoretical knowledge and technical skills. The curriculum is structured to provide students with opportunities to design and execute promotional campaigns that directly support local culinary destinations. This approach aligns with national initiatives aimed at strengthening creative tourism sectors and empowering micro, small, and medium enterprises (MSMEs) through digital literacy and capacity building (Purnomo & Purwandari, 2025; Siregar, Prayudi, Sari, Rosalina, & Pratama, 2023). By integrating real-world applications within the academic framework, the course not only enhances students' professional readiness but also contributes to the broader objectives of sustainable local economic development.

Although the educational literature increasingly acknowledges the transformative potential of digital tools to enhance teaching and learning outcomes, the majority of existing studies predominantly focus on brief, skill-specific training programs or treat digital marketing as a specialized, professional domain that is detached from formal educational contexts (Harbi & Maqsood, 2022; Neuvonen & Pecoraro, 2024). There remains a significant paucity of research examining how a wide range of digital tools, including artificial intelligence powered content editors, social media analytics dashboards, customer engagement platforms, and mobile photography applications, can be systematically embedded within semester-long, credit-bearing vocational courses (Elango & Sithambalam, 2025; Sorour, Atkins, Stanier, Alharbi, & Champion, 2020). This gap is particularly evident in vocational education, where the dual objectives of fostering student engagement and measurable competence development require sustained and authentic integration of technology into curriculum design (Thelma, Sain, Mpolomoka, Akpan, & Davy, 2024). Moreover, few empirical investigations have analyzed how students internalize and apply these tools when collaborating with real-world stakeholders, such as local culinary micro, small, and medium enterprises (MSMEs), within structured academic settings. The absence of such inquiry not only limits our understanding of effective digital pedagogy in vocational education but also constrains the development of scalable and evidence-based strategies for bridging the divide between classroom learning and professional practice.

This conceptual and empirical gap holds particular significance within the domain of vocational education, where instructional environments must be carefully balanced to achieve pedagogical coherence, workplace relevance, and authentic experiential learning (Salinas-Navarro, Vilalta-Perdomo, Michel-Villarreal, & Montesinos, 2024). While project-based learning models have been widely recognized as effective for promoting applied knowledge and real-world problem-solving abilities, there is still insufficient empirical evidence regarding how the integration of digital, tool-based instruction shapes students' cognitive development, engagement patterns, and actual performance in genuine digital marketing scenarios (Haghayeghi, Moghadamzadeh, Ravand, Javadipour, & Kareshki, 2025). The challenge lies in designing curricula that do more than merely introduce students to new technologies; rather, educators must develop frameworks that enable learners to meaningfully internalize and operationalize digital tools as part of their professional repertoire. This requires sustained investigation into the mechanisms by which integrated digital instruction mediates not only what vocational students are able to accomplish, but also how they approach, think about, and adapt to complex tasks in evolving digital landscapes. Addressing this gap is critical to ensuring that vocational programs are able to produce graduates who are both adaptable and proficient in leveraging technology within industry-relevant contexts.

In response to these identified gaps, the present study seeks to systematically evaluate the integration of technology-based tools within a semester-long Digital Marketing course and to examine their impact on vocational students' engagement and competence in promoting local culinary destinations. By situating the investigation within the context of an authentic, curriculum-based instructional setting, this research aims to provide nuanced insights into how technology-mediated pedagogy can enhance both the learning process and professional readiness among vocational students. The findings are expected to contribute not only to the scholarly discourse on digital pedagogy and vocational education but also to inform the development of effective curricular models and instructional strategies for educators, curriculum designers, and policymakers. Furthermore, the practical implications of this study extend to tourism stakeholders and local economic development initiatives, as the research highlights pathways for leveraging digital competencies to strengthen the visibility and competitiveness of micro, small, and medium enterprises operating within the culinary sector.

2. RESEARCH METHOD

This study employs a qualitative case study design to investigate how the integration of technology-based tools within a Digital Marketing course influences vocational students' engagement and competence in promoting local culinary destinations. The case study approach was chosen because it facilitates an in-depth, context-rich exploration of complex educational phenomena, allowing the researcher to capture not only measurable outcomes but also the

processes, perceptions, and interactions that shape learning. By situating the inquiry within the authentic instructional setting of a semester-long course at Politeknik Nest, Indonesia, this design enables a nuanced understanding of how digital tools are embedded into pedagogy, how students adapt to these tools, and how such integration affects both their professional readiness and creative problem-solving abilities.

The research context is bounded within a single class of third-semester students enrolled in the Digital Marketing course, part of the Information Technology program at Politeknik Nest. A total of 28 students participated in the study, all of whom had successfully completed prerequisite modules in multimedia design and digital communication, ensuring they possessed a foundational skill set for engaging in more advanced digital marketing tasks. Participants were selected purposively to ensure alignment with the study's objectives, using two key inclusion criteria: (1) active enrollment in the targeted Digital Marketing course during the semester of data collection, and (2) direct participation in a semester-long, team-based project aimed at promoting local culinary micro, small, and medium enterprises (MSMEs) through digital platforms. This selection ensured that all participants were actively engaged in real-world, technology-mediated marketing activities, making their experiences highly relevant to the study's focus.

The Digital Marketing course was structured around a project-based learning (PBL) framework, chosen for its ability to foster active student engagement, applied problem-solving, and collaborative knowledge building (Chua & Islam, 2021; Rehman, Huang, Mahmood, AlGerafi, & Javed, 2024). Within this model, students worked in small teams to design, develop, and implement digital marketing campaigns for real-world culinary destinations located near the campus. This approach simulated authentic industry workflows, enabling students to experience the complete campaign process from strategic planning and content creation to deployment and performance evaluation, all within a structured academic setting. To support the successful execution of these projects, a variety of technology-based tools was carefully integrated into the curriculum (Moleté, Mokhele, Ntombela, & Thango, 2025). The tools were introduced gradually and scaffolded to ensure students could develop both technical proficiency and strategic application skills. Table 1 presents an overview of the tools embedded in the course.

Table 1. Technology-Based Tools Integrated into the Digital Marketing Course

Category	Examples and Purpose
Mobile Content Creation Tools	DSLR cameras, smartphones, tripods : for capturing high-quality images and videos.
AI-Powered Editing Software	Canva Pro, Adobe Express, CapCut AI Tools : for graphic design, video editing, and automated content enhancements.
Social Media Dashboards	Meta Business Suite, Hootsuite : for centralized scheduling, publishing, and managing social media campaigns.
Basic Analytics Platforms	Instagram Insights, Google Trends : for tracking audience engagement and identifying market trends.

Each student group was partnered with a local culinary MSME and engaged in a 14-week structured process that included brand identity development, content production, campaign launch, and post-campaign evaluation. Instruction combined guided workshops, hands-on laboratory sessions, and iterative feedback cycles. Faculty members served as mentors throughout the project, while local creative industry practitioners provided expert consultation during critical phases, ensuring that student work met both pedagogical and professional standards.

Data for this study were gathered using a triangulated qualitative approach to ensure a comprehensive understanding of how students engaged with the course and developed digital marketing competence (Trisetianto & Ali, 2025). The use of multiple data sources provided methodological depth, allowed for cross-verification of findings, and enhanced the study's credibility.

Table 2. Data for this Study

Method	Description	Purpose
In-depth Interviews	Semi-structured interviews conducted with 12 purposively selected students and 3 instructors. Audio-recorded, transcribed verbatim, and thematically coded.	To capture participants' perceptions of engagement, competence development, tool effectiveness, and challenges encountered.
Participant Observation	Non-participant observation during lab sessions, campaign workshops, and mentoring activities. Detailed field notes recorded behavioral	To document real-time evidence of student engagement and interaction patterns.

Method	Description	Purpose
	indicators such as collaboration, creativity, persistence, and responsiveness to feedback.	
Document Analysis	Examination of students' campaign plans, content calendars, analytics reports, and reflective logs.	To assess the quality of outputs, the depth of applied skills, and students' reflective awareness of their learning.

The interviews provided rich, first-hand accounts of how students experienced technology integration and its influence on their learning process. The observations offered insight into classroom dynamics, teamwork patterns, and problem-solving behaviors that might not emerge in self-reported data. Document analysis complemented these sources by supplying tangible evidence of competence development and enabling a comparison between students' perceptions and the actual quality of their project outcomes.

The qualitative data were subjected to thematic analysis, guided by the six-phase framework articulated (Naeem, Ozuem, Howell, & Ranfagni, 2023). This analytical approach was selected for its methodological flexibility and its capacity to systematically identify, organize, and interpret patterns of meaning within complex qualitative datasets, while maintaining conceptual alignment with the study's dual focus on student engagement and digital marketing competence. The analytic process commenced with repeated readings of interview transcripts, observational field notes, and project artifacts to achieve deep familiarization with the data corpus. An inductive coding process was subsequently employed to generate descriptive and interpretive codes that encapsulated salient ideas and recurring patterns. These codes were then consolidated into higher-order categories and refined into overarching themes. The resultant thematic structure was mapped onto established theoretical dimensions of student engagement, which include behavioral, emotional, and cognitive domains, and the principal components of digital marketing competence, namely strategic planning, content creation, and analytics interpretation.

To safeguard the credibility and trustworthiness of the findings, multiple validation strategies were implemented. Member checking was undertaken with interview participants to confirm the accuracy and resonance of the interpretations, while peer debriefing sessions with faculty colleagues facilitated critical examination of the coding schema and mitigated potential researcher bias. Transferability was enhanced through the provision of thick, context-rich descriptions of the research setting, participant characteristics, and instructional processes. A detailed audit trail documenting coding decisions, thematic development, and analytical reasoning was maintained throughout the study to ensure methodological transparency and confirmability.

The selection of a qualitative case study design was informed by the need to interrogate a complex, contextually embedded educational phenomenon in which the boundaries between the pedagogical intervention and its broader instructional environment are inherently interwoven (Brouskelis, 2024). The central research objective, which is to examine the ways in which technology-based tools mediate vocational students' engagement and competence, necessitated an approach capable of capturing the richness of lived experience, the dynamics of classroom interaction, and the nuanced influence of contextual contingencies on learning outcomes. In contrast to variable-driven quantitative methodologies, the qualitative case study permits the emergence of unanticipated insights and accommodates the multifaceted nature of real-world educational practice. By delimiting the inquiry to a single, bounded case, the study was able to generate a granular and contextually resonant account of instructional design, technology integration, and authentic project-based application, thereby yielding findings with both depth and practical relevance for comparable vocational education contexts.

3. RESULT AND ANALYSIS

3.1. RESULT

The findings of this study are presented according to three major thematic domains, each of which directly aligns with the research objectives and captures a distinct dimension of the students' learning experience within the technology-integrated Digital Marketing course. The first theme concerns the enhancement of vocational students' engagement through the purposeful integration of digital tools, encompassing behavioral, emotional, and cognitive aspects of participation in authentic project-based activities. The second theme addresses the development of both technical and strategic competencies in digital marketing, with a particular emphasis on the application of these skills to real-world contexts, notably the promotion of local culinary micro, small, and medium enterprises (MSMEs). The third theme highlights the emergence of reflective thinking and the gradual formation of professional identity, as

students began to internalize the mindset, ethical considerations, and long-term strategic thinking characteristic of practitioners in the digital marketing field.

These themes emerged through a rigorous process of thematic analysis that integrated multiple sources of qualitative evidence. Data were triangulated from semi-structured in-depth interviews with students and instructors, systematic field observations of classroom and project activities, and the analysis of student-generated artifacts, including campaign plans, content calendars, engagement analytics, and reflective logs. The convergence of these data sources not only reinforced the validity of the findings but also allowed for a multifaceted understanding of how digital tool integration influenced student engagement, competence development, and professional growth within the vocational education context.

Theme 1: Increased Student Engagement through Technological Immersion

The first major theme concerns the enhancement of vocational students' engagement through the purposeful integration of digital tools within the Digital Marketing course. In this study, engagement is conceptualized as a multidimensional construct encompassing behavioral, emotional, and cognitive domains, each contributing to the depth and quality of student participation in authentic learning activities. The introduction of mobile content creation tools, AI-powered editing software, social media management dashboards, and analytics platforms provided students with both the means and the motivation to engage actively in their projects. These technologies not only facilitated the execution of campaign-related tasks but also replicated professional digital marketing workflows, thereby fostering a learning environment that mirrored real-world practice (Kaponis, Maragoudakis, & Sofianos, 2025).

Evidence from observations, interviews, and project artifacts revealed that technological immersion stimulated proactive learning behaviors, sustained concentration during content production, and enhanced collaborative dynamics during campaign planning and execution. Behavioral engagement was reflected in consistent attendance, active contributions during discussions, and voluntary work beyond scheduled sessions, such as editing videos late at night or conducting weekend interviews with MSME clients. Emotional engagement emerged in expressions of pride, enthusiasm, and personal fulfillment, especially when campaigns received public recognition. Cognitive engagement was observed in students' iterative decision-making, critical evaluation of analytics data, and strategic adjustments to content based on audience responses. The alignment of these three engagement dimensions demonstrates that digital tool integration served not merely as a pedagogical enhancement but as a central driver of sustained, authentic engagement.

Quantitative observation records corroborated these findings, indicating a progressive increase in emotional and cognitive engagement across the semester. Table 3 presents a week-by-week summary of observed engagement levels in the student groups, categorized into behavioral, emotional, and cognitive domains. These classifications were derived from systematic field notes documenting participation, affective responses, and evidence of higher-order thinking during campaign-related activities.

Table 3. Weekly Observation of Engagement Dimensions in Student Groups

Week	Behavioral	Emotional	Cognitive
1–2	Medium	Low	Low
3–5	High	Medium	Medium
6–8	High	High	High
9–12	High	High	High
13–14	Medium	High	High

The increase in both emotional and cognitive engagement from Weeks 3–5 coincided with the phase when students began producing and publishing campaign content for their MSME partners. The slight decline in behavioral engagement during Weeks 13–14 was attributed to the completion of major campaign milestones, after which students shifted their focus toward reflection and reporting. Representative student reflections further illustrate these engagement patterns:

"I'm usually lazy about editing videos, but since this is for MSMEs directly, I'm really curious about how to create content that can go viral." — S-04

"The first time our content was reposted by a major culinary account, I immediately felt confident. It felt appreciated." — S-10

"Working with real clients made me take deadlines more seriously. It wasn't just about grades; it was about not letting them down." — S-15

"Seeing the analytics improve after we adjusted our posting time made me realize how powerful small decisions can be." — S-07

"I used to just follow trends, but now I think more critically about why certain content works for specific audiences."
— S-18

To consolidate these qualitative insights and align them with the analytical framework, Table 4 summarizes the five selected responses in relation to the specific engagement dimensions they illustrate. This tabular presentation allows for a clearer connection between the narrative evidence and the theoretical constructs of behavioral, emotional, and cognitive engagement.

Table 4. Summary of Student Responses Illustrating Engagement Dimensions

Participant Code	Engagement Dimension Highlighted	Key Focus of Response
S-04	Cognitive, Behavioral	Motivation to produce viral content for MSMEs
S-10	Emotional	Increased confidence through public recognition
S-15	Behavioral, Emotional	Accountability to real clients beyond grades
S-07	Cognitive	Strategic adjustments informed by analytics
S-18	Cognitive	Critical thinking on content–audience alignment

Theme 2: Competence Development in Authentic Campaign Execution

The second major theme relates to the development of both technical and strategic competencies in digital marketing, achieved through the execution of authentic promotional campaigns for local culinary MSMEs. Competence in this context is defined as the integrated ability to apply knowledge, technical skills, and strategic thinking to produce high-quality, goal-oriented marketing outputs. The project-based learning environment provided students with opportunities to design, implement, and evaluate campaigns in real time, thereby enabling them to engage in iterative cycles of creation, feedback, and refinement that mirror professional practice.

Data from document analysis, field observations, and interviews indicated that students demonstrated substantial progress across three principal domains of competence. The first domain, visual storytelling, involved crafting compelling narratives through short videos, editing transitions, optimizing lighting, and ensuring aesthetic consistency using tools such as CapCut AI, Canva Pro, and DSLR cameras. The second domain, platform optimization, required students to interpret performance metrics including reach, saves, engagement rates, and peak interaction times using Instagram Insights and Meta Business Suite to inform content scheduling and strategic adjustments. The third domain, branding alignment, involved integrating client feedback into campaign decisions and maintaining thematic consistency in visual style, brand voice, and cultural representation to accurately reflect MSME identity and customer expectations.

The evaluation of student projects confirmed the breadth of competencies developed. Table 5 presents a sample scoring rubric used for one project, illustrating how branding consistency, content originality, technical execution, analytics usage, and reflective analysis were assessed.

Table 5. Sample Competency Scoring Rubric (Group B Project on "Bakso Ndeso")

Indicator	Description	Score (1–4)
Branding consistency	Visuals aligned with MSME identity	4
Content originality	Unique storytelling style	4
Technical execution	High-quality edits, transitions, and audio	3
Platform analytics usage	Used Instagram analytics to adjust campaign	4
Reflection on impact	Critical review of user engagement data	3

Interview responses provided deeper and more nuanced insights into how these competencies were developed, refined, and operationalized during the execution of the campaigns. Students articulated the specific ways in which they applied newly acquired technical skills, adapted strategies in response to real-time feedback, and collaborated with MSME clients to ensure the authenticity and effectiveness of their promotional content. These reflections highlighted not only the technical proficiency gained through the use of digital tools but also the strategic decision-making processes that underpinned campaign success. The following excerpts illustrate how students translated theoretical knowledge into practical actions within authentic, client-driven marketing contexts.

"Before posting content, I check my audience's active hours via IG Insights. This way, I'm more focused than posting haphazardly." — S-11

"We create guidelines for color, font, and tone of voice so that all posts cohere, creating a professional brand image."
— S-02

"Learning how to edit videos with smooth transitions made our content look much more professional and appealing." — S-09

"After looking at the analytics, we realized our audience preferred behind-the-scenes content, so we adapted our posts accordingly." — S-14

"Working directly with the MSME owner taught me how to balance creativity with the client's vision." — S-19

To consolidate these insights and clearly link the student reflections to the targeted competence domains, Table 6 provides a summary of five representative responses. Each response illustrates a specific aspect of competence development, allowing for a concise visual connection between qualitative evidence and the defined domains of digital marketing competence.

Table 6. Summary of Student Responses Illustrating Competence Development

Participant Code	Competence Domain Highlighted	Key Focus of Response
S-11	Platform Optimization	Posting strategy informed by audience activity data
S-02	Branding Alignment	Creation of brand-consistent visual and tonal guidelines
S-09	Visual Storytelling	Professional video editing and transitions
S-14	Platform Optimization	Content adaptation based on analytics feedback
S-19	Branding Alignment	Balancing creative ideas with client requirements

Theme 3: Reflective Learning and Emerging Professional Identity

The third major theme highlights the development of reflective capacity and the early formation of professional identity among students participating in the Digital Marketing course. Reflection in this context refers to the deliberate process through which learners critically examine their actions, decisions, and outcomes in order to derive deeper understanding and guide future professional behavior. As students progressed through the semester-long projects, they increasingly shifted from focusing solely on task completion to considering the broader implications of their marketing strategies, including ethical considerations, long-term brand positioning, and the social impact of their work.

Data from reflection logs, interviews, and observation notes indicated that students began to internalize the perspective of a digital marketing practitioner. They demonstrated an ability to think beyond technical execution, incorporating ethical principles such as avoiding misleading claims, ensuring accurate representation of products, and balancing persuasive marketing with authenticity. Several students extended their reflections to discuss brand sustainability and positioning, areas that are typically beyond the immediate scope of classroom-based instruction. This shift suggested a growing alignment between their learning experiences and the dispositions expected of industry professionals.

Interview responses provided additional insight into how students experienced this reflective process and how it influenced their emerging sense of professional identity. These accounts revealed how authentic engagement with MSME clients prompted students to see themselves not only as learners but also as active contributors to the clients' business success.

"Initially, I just focused on creating content, but after a while, I started to think, 'Does this content really give buyers hope?'" (S-08)

"I started thinking about continuing freelance work in the MSME content field after graduation. It turns out I am a good fit here." (S-06)

"Working on this project made me realize the importance of honesty in marketing. I avoided editing food photos too much so customers would not feel deceived." (S-13)

"Discussing campaign goals with the MSME owner opened my eyes to the importance of long-term brand building, not just quick sales." (S-21)

"This project gave me confidence to introduce myself as a content creator to others, something I had never done before." (S-17)

To consolidate these insights and link them to the dimensions of reflective learning and professional identity formation, Table 7 summarizes the five selected student responses according to the specific aspects they represent.

Table 7. Summary of Student Responses Illustrating Reflective Learning and Professional Identity

Participant Code	Focus Area Highlighted	Key Focus of Response
S-08	Ethical Reflection	Considering the motivational impact of content on buyers
S-06	Career Aspiration	Identifying potential for freelance work in MSME content
S-13	Ethical Practice	Ensuring authenticity in product representation
S-21	Strategic Thinking	Recognizing value of long-term brand building
S-17	Professional Self-Identification	Gaining confidence to present oneself as a content creator

3.2. DISCUSSION

The triangulated findings derived from semi-structured interviews, systematic field observations, and in-depth analysis of student-generated artifacts reveal a multi-layered impact of integrating technology-based tools into the Digital Marketing course. This integration shaped the learning experience in ways that extended beyond the acquisition of technical skills, influencing vocational students' engagement, competence development, reflective thinking, and the early stages of professional identity formation. The observed changes encompassed both observable behaviors, such as increased participation, sustained effort, and collaborative interaction, and deeper cognitive and affective dimensions, including strategic decision-making, critical evaluation of digital content, and the internalization of professional roles. These outcomes are best understood when situated within a set of complementary theoretical frameworks, which together illuminate how authentic, technology-mediated learning environments can transform vocational education practice.

Constructivist Learning Theory

The findings of this study provide strong support for the constructivist perspective as described by (Schunk & DiBenedetto, 2022), which asserts that learners actively construct knowledge through purposeful interaction with their environment. Within the context of the Digital Marketing course, the integration of digital tools created opportunities for students to engage directly with real-world marketing challenges, encouraging them to explore, test, and refine their understanding through practical application. The tools used, such as CapCut AI, Canva Pro, and Instagram Insights, functioned not only as channels for content production but as cognitive partners in the learning process. By engaging with these platforms in authentic project settings, students were required to make decisions, evaluate outcomes, and adapt strategies, thereby engaging in iterative cycles of learning that are central to constructivist pedagogy. This process enabled students to transform theoretical concepts into applied knowledge that was reinforced through experience and reflection.

Multidimensional Engagement Model

Patterns of student engagement identified in this study align closely with the three-dimensional model of engagement proposed by (Fredricks, Blumenfeld, & Paris, 2004), which distinguishes between behavioral, emotional, and cognitive forms of engagement. The presence of relevant technological tools and the authenticity of the project-based tasks encouraged high levels of behavioral engagement, evidenced by consistent attendance, active participation, and willingness to invest additional time outside of scheduled sessions. Emotional engagement emerged as students expressed pride, satisfaction, and personal investment when their campaigns achieved public recognition or meaningful interaction from target audiences. Cognitive engagement was demonstrated through data-driven decision-making, the integration of branding strategies into content design, and the ability to adapt approaches in response to analytics. These results suggest that when technology is meaningfully integrated into socially relevant and authentic learning contexts, it can activate all three dimensions of engagement in a mutually reinforcing manner.

Situated Learning Theory

The learning processes observed in this study reflect the principles of Situated Learning Theory as articulated by (Cakmakci, Aydeniz, Brown, & Makokha, 2025). which emphasize that learning is most effective when it occurs in authentic, socially constructed contexts (Abubakar, Elrehail, Alatailat, & Elçi, 2019). In this case, students were embedded within a community of practice by collaborating directly with local culinary MSMEs. This engagement positioned them not as passive recipients of instruction but as active participants contributing to the development of real marketing campaigns. Through activities such as client communication, brand-building, and performance

evaluation, students applied their knowledge in concrete situations that required immediate problem-solving and adaptation. The situated nature of these tasks facilitated knowledge transfer, supported the negotiation of meaning with peers and stakeholders, and provided ongoing, context-specific feedback that reinforced vocational readiness.

Critical Digital Literacy

An important dimension of student learning in this course was the development of critical digital literacy, as conceptualized (Marín & Castaneda, 2022; Martínez-Bravo, Sádaba Chalezquer, & Serrano-Puche, 2022). Students progressed beyond the technical use of digital tools to critically evaluate the strategic, ethical, and representational implications of their media production choices. For example, several students examined the accuracy and appropriateness of AI-generated captions, considered how editing styles influenced audience perceptions of brand authenticity, and reflected on the cultural sensitivity of representing culinary products to diverse audiences. This capacity to question and critique digital practices indicates that the instructional design successfully fostered awareness of the broader social, ethical, and communicative responsibilities associated with digital marketing. Such critical awareness is essential for vocational graduates who must navigate increasingly complex and media-saturated professional environments.

Professional Identity Formation

The findings also point to the emergence of professional identity among students, a process in which they began to perceive themselves as competent practitioners within the digital marketing field. Through sustained collaboration with MSME clients, adherence to project timelines, production of public-facing work, and participation in team-based accountability, students internalized many of the expectations and behaviors associated with professional practice. Reflection journals and final project presentations revealed not only aspirations for careers in digital marketing but also ethical considerations and entrepreneurial ideas that extended beyond the scope of the course. As one student reflected:

"I feel like I'm a real agency employee, having to think about briefs, target markets, visuals, and performance evaluations. It's not just a campus assignment." (S-06)

These developments suggest that authentic, technology-integrated projects can facilitate the early stages of professional identity formation, enabling students to envision themselves as active contributors to their chosen field rather than as learners engaged solely in academic exercises.

To synthesize the connections between the thematic findings and the theoretical perspectives discussed above, a conceptual framework was developed. This framework visually represents how the integration of technology-based tools in the Digital Marketing course acted as the central mechanism driving three interconnected outcomes: enhanced student engagement, competence development, and the emergence of reflective professional identity. Each outcome is situated within the theoretical constructs that best explain its development, including constructivist learning theory, the multidimensional engagement model, situated learning theory, critical digital literacy, and professional identity formation. The diagram also illustrates how these combined processes contribute to workplace readiness and civic relevance in vocational education, as shown in Figure 1.

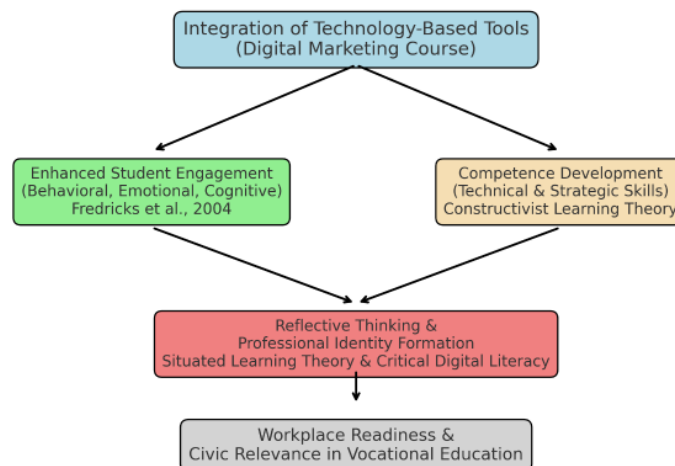


Figure 1. Conceptual Framework Linking Thematic Findings with Theoretical Perspectives

As illustrated in Figure 1, the integration of technology-based tools into the Digital Marketing course functioned as the central pedagogical mechanism linking the three major thematic outcomes: enhanced engagement, competence development, and the emergence of reflective professional identity. These outcomes did not occur in isolation but were interconnected and reinforced within a learning environment shaped by authentic, socially meaningful tasks. Theoretical perspectives drawn from constructivist learning, multidimensional engagement, situated learning, critical digital literacy, and professional identity formation together provide a coherent explanation of how and why these outcomes were achieved.

The convergence of these frameworks highlights that technology in vocational education should not be understood solely as a technical enhancement. When embedded in authentic, project-based contexts, technology serves as a bridge between instructional content and professional practice. It enables students to move from passive acquisition of knowledge to active creation of knowledge, supporting performance, reflection, and adaptation in ways that are aligned with industry standards. The course design further strengthened this process by simulating workplace conditions and holding students accountable to real MSME stakeholders, which increased both the transferability and relevance of their skills.

The findings present a strong case for rethinking the role of digital tools in vocational education. Thoughtfully integrated into collaborative and socially situated projects, these tools can foster learner agency, professional readiness, and civic relevance. Such integration prepares vocational students not only to respond effectively to the demands of the digital economy but also to contribute ethically and strategically to the evolving creative industries in which they will participate.

4. CONCLUSION

This study set out to explore how the integration of technology-based tools within a semester-long Digital Marketing course impacts vocational students' engagement and competence in promoting local culinary destinations. Through a qualitative case study involving in-depth interviews, observations, and artifact analysis, the research revealed that the integration of diverse digital tools, when embedded within a project-based, authentic instructional design, significantly enriched students' learning experiences across multiple dimensions.

The findings demonstrate that students experienced increased behavioral, emotional, and cognitive engagement through immersive tool use, authentic project ownership, and public visibility of their campaigns. Simultaneously, students developed practical competencies in content production, branding strategy, platform analytics, and client communication—skills that align with industry expectations for digital marketers in the creative tourism sector. More importantly, the learning experience fostered reflective thinking, critical digital literacy, and early-stage professional identity formation, showing that meaningful tool integration does not merely produce technical proficiency, but can also cultivate agency, confidence, and ethical awareness among vocational learners.

From a theoretical standpoint, the study extends the application of constructivist, situated learning, and multidimensional engagement theories into the domain of vocational education, while introducing critical digital literacy as a valuable lens for understanding how students navigate, assess, and internalize digital tools in real-world contexts.

Practically, the results suggest that vocational institutions should move beyond surface-level digitization and instead adopt pedagogically grounded, tool-integrated learning models. These should emphasize not only task completion but student reflection, creative risk-taking, and community relevance. The success of the collaboration with local MSMEs in this study also points to the synergistic potential between vocational education and local economic development, particularly in creative tourism and culinary entrepreneurship.

Despite the depth afforded by a qualitative case study, several limitations should be considered when interpreting these findings. First, the inquiry was bounded to a single Digital Marketing class of third-semester Information Technology students in one vocational institution, which may constrain transferability to other programs, student cohorts, or settings with different resources, partnership ecosystems, and baseline digital skills. Second, interview data were obtained from a purposive subset of participants and instructors, meaning that some perspectives may be underrepresented; moreover, self-reported accounts and reflective logs remain susceptible to social desirability and recall bias, particularly within an assessed course context. Third, the course design intentionally combined multiple interacting components, including project-based learning, scaffolded integration of technology tools, iterative feedback cycles, faculty mentoring, and practitioner consultation, so the study cannot isolate the effects of any single tool or activity; outcomes should therefore be interpreted as emergent from an integrated pedagogical ecology rather than technology alone. Fourth, observation-based judgments of engagement and artifact-based assessments of competence are context-dependent and partly interpretive; additionally, social media and analytics indicators may be influenced by platform algorithms, audience volatility, seasonal factors, and MSME-specific market conditions that were beyond the researcher's control. Finally, the study covered one 14-week semester and did not include

longitudinal follow-up, limiting conclusions about the durability of competence gains, their translation into sustained professional practice, and longer-term benefits for partner MSMEs; future research could strengthen evidence through multi-site or comparative case designs, longitudinal tracking beyond the course, inclusion of additional stakeholders such as MSME owners and campaign audiences, and mixed-method approaches that combine qualitative insights with standardized engagement measures and independent evaluation of campaign quality.

Future research could expand this inquiry by exploring longitudinal effects of such learning designs, comparative studies across institutions, or mixed-method approaches to capture both measurable outcomes and student narratives. Additionally, further investigation into how AI-assisted tools influence creative judgment and ethical decision-making among novice digital practitioners would provide valuable insights for curriculum innovation.

In conclusion, this study affirms that well-integrated digital tools—when paired with authentic, community-anchored projects—can transform vocational classrooms into spaces of engagement, skill-building, and identity exploration, bridging the gap between education, industry, and culture in the digital age.

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