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BRIDGING AI SKILLS GAPS IN MARKETING EDUCATION: PROMPT ENGINEERING AS A KEY COMPETENCY

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ABSTRACT

The advancement of artificial intelligence is reshaping the marketing landscape, underscoring the need to integrate prompt engineering into marketing education. This study presents a conceptual framework for embedding prompt engineering within marketing curricula, rooted in established educational theories. An integrative literature review and thematic analysis revealed five critical themes: the essential role of prompt engineering, key techniques for marketing students, curriculum integration challenges, effective implementation strategies, and wider implications for marketing education. The resulting framework encompasses five core components: foundational AI and marketing knowledge, skill development in prompt engineering, curriculum integration and design, faculty development through interdisciplinary collaboration, and ethical AI use. A workshop-based case study demonstrates how instruction in advanced prompting techniques enhanced content clarity, creativity, and practical AI readiness. Building on these findings, the paper offers actionable recommendations for curricular design, faculty training, hands-on learning opportunities, industry partnerships, ethical considerations, and ongoing assessment. By equipping students with robust prompting skills and ethical awareness, educators can address the evolving demands of AI-driven marketing, ultimately advancing the profession. This comprehensive framework helps institutions modernize their marketing programs, fostering graduates prepared for innovation and responsible AI engagement.

Introduction

The rapid advancement of artificial intelligence (AI) has profoundly transformed the marketing industry, introducing unprecedented opportunities for personalization, efficiency, and data-driven decision-making (Davenport et al., 2020; Huang & Rust, 2021). Large Language Models (LLMs), such as GPT-4, have become integral tools for marketers, supporting a range of functions including content creation, customer engagement, sentiment analysis, and predictive analytics (Fraiwan & Khasawneh, 2023; Kaplan & Haenlein, 2019). According to a recent McKinsey report, the economic potential of generative AI could reach between $2.6 trillion and $4.4 trillion annually across global industries, with a significant share attributed to marketing and sales activities (Chui et al., 2023). As AI technologies continue to evolve, there is an increasing demand for marketing professionals who are not only well-versed in traditional marketing principles but also proficient in leveraging AI tools effectively (Mustak et al., 2021; Priyanga, 2023).

Another McKinsey analysis focused on consumer marketing forecasts that generative AI could boost marketing productivity by 5 to 15 percent of total spend, representing up to $463 billion in annual gains, further highlighting the urgent need for AI competencies (Harkness et al., 2023). Prompt engineering has emerged as a critical skill in maximizing the potential of LLMs. It involves strategically crafting prompts to guide AI models in generating desired outputs, thereby enhancing the relevance, accuracy, and creativity of results (Reynolds & McDonell, 2021). Advanced prompting techniques such as Chain-of-Thought prompting, Self-Refinement prompting, and Cumulative Reasoning prompting have been shown to significantly improve AI performance in complex tasks (Madaan et al., 2023; Wei et al., 2024; Zhang et al., 2024). These techniques collectively enhance marketing strategies by improving task accuracy and engagement effectiveness.

Despite its increasing importance, prompt engineering remains largely underrepresented in marketing education. Many academic programs have yet to

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incorporate AI literacy or prompt engineering skills into their curricula, potentially leaving graduates ill-prepared for the realities of an AI-driven marketing environment (Huang & Rust, 2022). Recent findings indicate that although 92% of organizations plan to increase investment in AI, only 1% consider themselves fully "AI mature" (Mayer et al., 2025). This discrepancy highlights a significant talent and readiness gap that marketing education must urgently address.

To meet this educational imperative, it is essential to ground the integration of prompt engineering within established educational theories. Constructivism posits that learners build knowledge through active experiences, emphasizing the importance of hands-on engagement (Piaget, 1954). This aligns well with the nature of prompt engineering, where students learn through direct interaction with AI systems. Kolb's Experiential Learning Theory (1984) further supports this hands-on approach, outlining a learning cycle of concrete experience, reflective observation, abstract conceptualization, and active experimentation. These principles facilitate deeper understanding and iterative learning.

Social constructivism, as articulated by Vygotsky (1978), underscores the importance of collaboration and shared experiences in knowledge construction. In the context of prompt engineering, collaborative projects and peer-to-peer learning can enhance comprehension and practical skill development. Similarly, Connectivism (Siemens, 2005), a theory tailored for the digital age, argues that learning is distributed across a network of information sources and technologies. This perspective is especially relevant to prompt engineering, where students must navigate diverse digital tools and AI platforms to develop effective prompts.

In addition, integrating ethical considerations into prompt engineering education is essential. As AI tools become more embedded in marketing practices, concerns such as data privacy, algorithmic bias, and transparency must be addressed to ensure responsible and ethical use (Acar, 2024; Jobin et al., 2019). Educating students on these ethical dimensions equips them to manage the complexities of AI responsibly, aligning their practices with both societal expectations and professional standards.

From a strategic perspective, the expanded capabilities of AI are poised to reshape the entire marketing strategy development pipeline. D'Amico et al. (2025) identify five key roles AI can assume, researcher, interpreter, thought partner, simulator, and communicator, each of which can be enhanced through effective prompting techniques. These developments amplify the urgency for marketing programs to prepare students with advanced, AI-literate skill sets, particularly in prompt engineering.

The primary aim of this paper is to conceptualize how prompt engineering can be integrated into marketing education, with a foundation in educational theory and a focus on ethical practice. Specifically, the paper seeks to: (1) explore the critical role of prompt engineering in contemporary marketing; (2) identify the key prompting techniques and skills relevant to marketing education; (3) analyze the challenges of integrating prompt engineering into marketing curricula; and (4) propose a conceptual framework for its effective integration.

By addressing these objectives, this study contributes to academic discourse on marketing education and offers practical guidance for educators aiming to prepare students for the demands of AI-driven marketing. The integration of well-established educational theories provides a solid pedagogical foundation, ensuring that proposed strategies align with how students learn most effectively.

To demonstrate the real-world application of the framework, this paper includes a case study of a prompt engineering workshop conducted at a higher education institution. Although not a rigorous empirical investigation, the case study exemplifies how theoretical concepts can be implemented in practice. It illustrates experiential learning and social constructivist principles through hands-on activities and collaborative engagement with AI tools.

The structure of the paper is as follows: The Background explores existing research on AI in marketing, the role of prompt engineering, and supporting educational theories. The Methodology outlines the systematic approach used in the integrative literature review, including search strategies, selection criteria, and thematic analysis. The Analysis and Results section presents findings from the literature and thematic analysis, including the development of the conceptual framework and insights from the case study. The Conceptual Framework section introduces a theory-based model for integrating prompt engineering into marketing curricula. The Illustrative Case Study details the prompt engineering workshop, highlighting practical application. The Discussion explores the implications of these findings for marketing education, and the Conclusion and Future Research summarizes the study's contributions and suggests directions for further inquiry.

By integrating prompt engineering with educational theory and ethical consideration, this paper offers a comprehensive foundation for enhancing marketing education. The inclusion of a practical case study bridges the gap between theory and practice,

demonstrating the feasibility and impact of the proposed framework. These efforts address the readiness gap highlighted by the "superagency" era of AI, in which employees often outpace leadership in AI adoption, while only a minority of organizations fully leverage AI's capabilities (Mayer et al., 2025).

Background

The integration of artificial intelligence into marketing has become increasingly prominent, reshaping traditional approaches to customer segmentation, predictive analytics, content creation, and personalization (Bruyn et al., 2020; Z. M. Wang et al., 2024). AI-powered tools enable marketers to process vast datasets to inform real-time, data-driven decisions, enhancing both operational efficiency and tailored customer experiences (Peterson & Dover, 2014). Studies such as Kaplan and Haenlein (2019) demonstrate that AI's influence extends beyond customer engagement to areas like professional networking and career-building, facilitating connections, internships, and employment opportunities on platforms like LinkedIn.

As AI continues to permeate the industry, the demand for marketing professionals with proficiency in AI tools and methodologies is rapidly growing. Industry leaders increasingly view AI not merely as a tool but as a strategic enabler of marketing innovation (Chaffey & Ellis-Chadwick, 2019; Priyanga, 2023). This section synthesizes existing research on AI's role in marketing, explores the importance of prompt engineering, and presents relevant educational theories that support the integration of prompt engineering into marketing education. By anchoring the discussion in both technological and pedagogical contexts, this review provides a foundation for the development of a conceptual framework.

AI in Marketing

AI has revolutionized marketing by enabling high levels of personalization, increased efficiency, and data-driven decision-making (Davenport et al., 2020; Huang & Rust, 2021). These technologies allow for comprehensive analysis of consumer behavior, market trends, and campaign effectiveness (Davenport et al., 2020; Priyanga, 2023). Machine learning algorithms further enhance predictive analytics, helping marketers anticipate customer needs and personalize offerings accordingly (Chaffey & Ellis-Chadwick, 2019; Mauro et al., 2022).

Large Language Models, such as Gemini and GPT-4, have significantly expanded AI's applications in marketing (Elhajjar et al., 2020; Mauro et al., 2022). These models support a range of tasks including content generation, customer service automation, and interactive marketing campaigns, making them invaluable for personalized, adaptive communication (Chen et al., 2024). Their ability to perform sentiment analysis also allows marketers to assess consumer perceptions and refine customer experience strategies (Dwivedi et al., 2021; B. Liu, 2012). Frameworks like RoleLLM illustrate how LLMs can assume predefined roles, improving contextual interactions and enhancing AI-driven personalization efforts (Z. M. Wang et al., 2024).

Despite these advantages, the use of AI also introduces ethical and operational challenges. Issues such as algorithmic bias, lack of transparency, and accountability continue to concern practitioners, particularly given the "black box" nature of LLMs (Maheswari, 2023; Torkestani et al., 2024). As these models are trained on vast datasets that may contain embedded societal biases, they risk reinforcing stereotypes or spreading misinformation (Dwivedi et al., 2021; Mehrabi et al., 2021). Responsible AI use therefore requires marketers to carefully manage these tools with an awareness of their ethical implications (Jobin et al., 2019).

Prompt Engineering and Its Role in Marketing

Prompt engineering has emerged as a critical practice in optimizing the performance of AI models, especially LLMs, across various marketing tasks (Reynolds & McDonell, 2021; Sahoo et al., 2024). Effective prompt engineering can enhance content quality, accuracy, and relevance, which are crucial for maintaining brand integrity and customer trust (Shin et al., 2020). RoleLLM, for instance, illustrates how LLMs can adopt predefined roles to provide more contextually appropriate responses, thus enhancing the model's role-playing and scenario-based interactions, a critical aspect for personalized marketing strategies (Z. M. Wang et al., 2024). In addition to standard prompting approaches, advanced techniques such as Chain-of-Thought prompting and Self-Refinement prompting are employed to handle complex tasks involving reasoning and iterative refinement (Madaan et al., 2023; Wei et al., 2024; Zhang et al., 2024). These methodologies underscore the increasing importance of prompt engineering as marketers seek to maximize the value of AI outputs.

The quality of AI-generated outputs is highly dependent on the prompts provided. Ambiguous or poorly constructed prompts can lead to irrelevant or incorrect responses, limiting the effectiveness of AI applications in marketing (Shin et al., 2020). Conversely, well-designed prompts can enhance the accuracy, relevance,

and creativity of AI outputs, making prompt engineering a vital skill for professionals working with AI technologies (Heston, 2023).

In the context of LLMs, advanced prompting techniques have been developed to improve the reasoning capabilities and output quality of AI models. These techniques enable models to handle complex tasks that require multi-step reasoning, context understanding, and error correction (Wei et al., 2024). As AI models become more sophisticated, the importance of mastering prompt engineering increases, particularly for fields like marketing that rely heavily on effective communication and data interpretation.

Key Prompt Engineering Techniques

Prompt engineering encompasses a range of techniques that can be applied to enhance the performance of AI models in marketing contexts. Some of the key techniques include:

Chain-of-Thought (CoT) Prompting is a technique that guides AI models to generate intermediate reasoning steps before arriving at a final answer (Wei et al., 2024). By prompting the model to "think step by step," CoT helps in breaking down complex problems into simpler components, improving accuracy in tasks such as arithmetic reasoning, logic puzzles, and open-domain question answering (Kojima et al., 2022). In marketing applications, CoT can enhance the model's ability to analyze complex data sets, develop marketing strategies, and generate detailed customer insights. For example, when assessing market trends, CoT prompting can help the AI model systematically evaluate various factors influencing consumer behavior, leading to more nuanced analyses.

Self-Refinement Prompting allows AI models to iteratively improve their outputs based on self-generated feedback. The model first produces an initial response, then evaluates its own answer to identify errors or areas for improvement and refines the output accordingly. This process continues until the model reaches a satisfactory solution (Madaan et al., 2023). This technique is particularly useful in marketing scenarios where initial strategies or content drafts require refinement. For instance, in content marketing, an AI model can generate a draft article and then refine it to enhance clarity, engagement, and alignment with brand messaging. Self-Refinement promotes higher quality outputs and reduces the need for extensive human editing.

Cumulative Reasoning (CR) Prompting introduces a collaborative framework involving three key roles: proposer, verifier, and reporter. The proposer suggests potential solutions, the verifier evaluates these suggestions for accuracy and feasibility, and the reporter compiles the verified reasoning steps into a coherent final answer. This structured approach enhances the model's problem-solving capabilities by ensuring each step is scrutinized and validated (Zhang et al., 2024). In marketing, CR prompting can be applied to strategic decision-making processes. For example, when developing a new marketing campaign, the AI model can propose ideas, evaluate their potential impact, and compile a strategy that has been thoroughly vetted. This method reduces the likelihood of errors and enhances the quality of marketing plans.

Role-Specific Prompting (RoleLLM) framework (Z. M. Wang et al., 2024) highlights the importance of role-specific prompting, where models can be guided to assume various roles within a marketing context, such as customer service representatives or strategic advisors. This technique is particularly valuable in personalized marketing, as it allows for tailored interactions that align closely with brand identity and customer expectations.

Decomposition Techniques further enhance the reasoning abilities of AI models by explicitly breaking down complex tasks into manageable sub-tasks (Khot et al., 2022). Methods such as Decomposed Prompting, Plan-and-Solve Prompting, and Tree-of-Thought Prompting enable models to handle intricate problems by addressing each component systematically. Decomposed Prompting involves dividing a complex task into simpler sub-tasks and assigning them to the model or specialized handlers (Khot et al., 2022). This modular approach improves both accuracy and efficiency in problem-solving by allowing each sub-task to be managed independently, thereby reducing the potential for errors and enhancing the overall quality of the output. Plan-and-Solve Prompting introduces a planning phase before the model attempts to solve a problem, which significantly reduces errors in reasoning steps (Wang et al., 2023). By devising a comprehensive plan, the model can better organize its approach to complex tasks, ensuring that each step is logically sequenced and thoroughly considered. This structured methodology enhances the model's ability to navigate and resolve multifaceted issues effectively. Tree-of-Thought Prompting enables the model to explore multiple reasoning paths in a structured, tree-like manner (Yao et al., 2023). This technique allows for backtracking and reassessment, mimicking human problem-solving methods. By evaluating various potential solutions simultaneously, the model can identify the most effective strategies and adapt its approach based on the outcomes of different reasoning paths. In the context

of marketing education, teaching these decomposition techniques can significantly aid students in understanding how to tackle complex marketing challenges. By systematically breaking down problems, exploring various solutions, and selecting the most effective strategies, students can develop a more analytical and structured approach to marketing. This not only enhances their problem-solving skills but also prepares them to apply advanced AI-driven techniques in real-world marketing scenarios.

Prompt Engineering in Marketing Education

The rapid integration of artificial intelligence into marketing underscores the need for a workforce skilled in both foundational marketing principles and advanced AI technologies (Huang & Rust, 2022). Although tools like ChatGPT are increasingly central to marketing practices, a significant gap remains between the skills typically taught in marketing programs and the competencies now demanded by the industry (Ferrell & Ferrell, 2020; Peterson & Dover, 2014). Integrating prompt engineering into marketing curricula offers a way to bridge this divide, equipping students to effectively leverage AI tools across key marketing functions such as content creation, customer engagement, and campaign management (Tafesse & Wood, 2024).

Advanced prompting techniques are particularly valuable for cultivating critical thinking and problem-solving abilities, skills that are essential for interpreting complex market data, crafting adaptive strategies, and responding to dynamic marketing conditions (Heston, 2023). These competencies empower students not only to generate content using AI but also to refine and tailor outputs to align with strategic objectives in areas like digital marketing, search engine optimization (SEO), and customer relationship management (Tafesse & Wien, 2024). Prompt engineering, in particular, enables students to modify tone, adjust relevance, and enhance creativity, capabilities that are vital for producing personalized content and fostering meaningful customer interactions.

Furthermore, teaching prompt engineering creates a valuable opportunity to address ethical considerations related to AI use in marketing (Jobin et al., 2019). As LLMs can unintentionally reproduce biases embedded in their training data, marketers must be equipped to recognize and mitigate the ethical risks of automated decision-making. Embedding discussions of AI ethics and responsible design into the prompt engineering curriculum helps students develop a conscientious and transparent approach to using AI. Research highlights that AI literacy involves not only technical proficiency but also an understanding of how prompt design influences output and perpetuates bias, reinforcing the need for ethical awareness in AI-driven marketing (Tafesse & Wien, 2024).

Despite its clear benefits, integrating prompt engineering into marketing education presents several challenges. Many faculty members currently lack expertise in AI technologies, pointing to the need for professional development and cross-disciplinary collaboration with fields such as computer science (Bruyn et al., 2020). In addition, curricular reform is necessary to strike a balance between traditional marketing instruction and emerging technological competencies, ensuring that students graduate with a comprehensive, future-ready skill set.

Educational Theories Relevant to Prompt Engineering Integration

To effectively integrate prompt engineering into marketing education, it is essential to ground pedagogical approaches in established educational theories. These theories provide insights into how students learn best, guiding the development of curricula and instructional strategies.

Constructivism posits that learners actively construct knowledge through experiences rather than passively absorbing information (Piaget, 1954). Learning is seen as an active, contextualized process of constructing meaning based on individual experiences and interactions with the environment.

In the context of prompt engineering, constructivism supports the idea that students learn most effectively by engaging directly with AI tools and technologies. By experimenting with crafting prompts and observing the outcomes, students construct an understanding of how prompts influence AI outputs. This hands-on engagement encourages deeper comprehension and retention of knowledge.

Kolb's (1984) Experiential Learning Theory builds upon constructivism by outlining a cyclical process that involves four stages: concrete experience, reflective observation, abstract conceptualization, and active experimentation. Students first have a concrete experience, then reflect on that experience, develop abstract concepts based on their reflections, and finally, actively experiment with these new concepts. In prompt engineering education, this cycle can be operationalized by having students engage in crafting prompts (concrete experience), reflect on the effectiveness of their prompts (reflective observation), derive principles of effective

prompt engineering (abstract conceptualization), and apply these principles in new contexts (active experimentation). This cyclical process promotes continuous learning and improvement, which is essential in a rapidly evolving field like AI.

Social constructivism, advanced by Vygotsky (1978), emphasizes the fundamental role of social interaction in the development of cognition. Vygotsky introduced the concept of the Zone of Proximal Development (ZPD), which is the distance between what learners can do independently and what they can achieve through collaboration with more knowledgeable others. Incorporating social constructivism into prompt engineering education involves collaborative learning activities where students work together on prompt crafting tasks, share insights, and provide feedback to one another. This social interaction facilitates deeper understanding as students benefit from diverse perspectives and collective problem-solving. Peer learning and group projects can enhance students' abilities to tackle complex prompt engineering challenges.

Connectivism, proposed by Siemens (2005), is a learning theory for the digital age, emphasizing the role of technology and networks in the learning process. It suggests that knowledge is distributed across a network of connections, and learning consists of the ability to construct and traverse those networks.

Prompt engineering requires students to interact with various AI platforms, digital resources, and online communities. Connectivism supports the integration of these technological tools into learning, highlighting the importance of networked learning environments. By engaging with AI technologies and connecting with peers and experts online, students develop the skills to navigate and leverage complex information networks, which is crucial in the context of AI and marketing.

Ethical Considerations in AI and Marketing Education

The integration of artificial intelligence into marketing practices raises significant ethical considerations that must be addressed within educational frameworks. Critical issues such as data privacy, algorithmic bias, transparency, and accountability are essential to ensure that AI is utilized responsibly and ethically in marketing contexts (Jobin et al., 2019).

Data Privacy

With AI systems processing vast amounts of personal data, safeguarding customer privacy becomes paramount. Educators must emphasize the importance of complying with data protection regulations, such as the General Data Protection Regulation (GDPR), and instill best practices for handling sensitive information. This includes teaching students about data encryption, secure data storage, and the ethical implications of data misuse. By prioritizing data privacy, future marketers can build trust with consumers and maintain the integrity of their marketing strategies.

Algorithmic Bias

AI models have the potential to inadvertently perpetuate biases present in their training data, leading to discriminatory outcomes (Mehrabi et al., 2021; Torkestani et al., 2024). It is essential to educate students about the existence and impact of algorithmic bias and provide them with methods to identify and mitigate such biases. This involves understanding the sources of bias, evaluating model fairness, and implementing strategies to reduce bias in AI applications. By addressing algorithmic bias, educators can help students develop fair and inclusive marketing practices that avoid reinforcing societal inequalities.

Transparency and Accountability

The "black box" nature of many AI models poses significant challenges for transparency and accountability (Maheswari, 2023). Educators should promote the development of explainable AI practices, ensuring that students understand how AI decisions are made and the importance of being able to explain these decisions to stakeholders. Encouraging students to consider the implications of AI-driven decisions on various stakeholders fosters a sense of responsibility and ethical accountability. Additionally, integrating lessons on model interpretability and ethical decision-making frameworks can empower students to create more transparent and accountable AI systems in their marketing endeavors.

By integrating ethical considerations into prompt engineering education, students are better prepared to navigate the complex moral landscape of AI in marketing, fostering trust and integrity in their professional practices.

Gaps in Current Marketing Education

Despite the transformative influence of artificial intelligence on the marketing landscape, a significant gap persists in how marketing education addresses AI literacy and related skill development (Huang & Rust, 2022; Kaplan & Haenlein, 2019). Many academic programs remain rooted in traditional marketing principles, often overlooking the technological proficiencies required in today's AI-driven industry. As a result,

graduates may enter the workforce lacking the competencies needed to harness AI tools effectively, which could hinder innovation, reduce competitiveness, and widen the disconnect between academic preparation and industry demands. Compounding this issue is the limited attention given to ethical considerations surrounding AI in current curricula. Without a solid grounding in the ethical implications of AI, such as data privacy, algorithmic bias, and transparency, students are inadequately prepared to navigate the moral complexities they are likely to face in professional settings (Jobin et al., 2019). There is a clear need for comprehensive, forward-looking curricula that integrate technical AI skills with ethical awareness, all within an educational framework designed to enhance student learning outcomes. The literature affirms the growing importance of AI and prompt engineering in modern marketing. Advanced prompting techniques improve the performance of LLMs by enabling the generation of more accurate, relevant, and creative content. These capabilities have clear applications across marketing domains, from content strategy to customer engagement. Educational theories such as constructivism, experiential learning, social constructivism, and connectivism offer valuable guidance for integrating prompt engineering into marketing education. These theories advocate for pedagogical approaches that emphasize active participation, collaboration, and technology-rich learning environments, conditions well-suited to developing AI-related competencies. Crucially, incorporating ethical considerations into instruction ensures that students are not only technically capable but also socially responsible in their use of AI. By embedding discussions on data governance, fairness, and accountability within AI-focused modules, educators can prepare students to lead with integrity in a field where technological and ethical challenges frequently intersect. The identified gaps in marketing education underscore the urgency of developing a conceptual framework to guide the integration of prompt engineering into academic programs. Such a framework should be rooted in educational theory, attuned to ethical concerns, and responsive to evolving industry needs. Ultimately, equipping students with these capabilities is essential for preparing a future-ready workforce capable of thriving in the AI-enhanced marketing ecosystem.

Methodology

This study adopts a qualitative research methodology grounded in an integrative literature review to examine the significance of teaching prompt engineering to marketing students and to identify the essential techniques and competencies they should acquire. The integrative literature review is particularly well-suited for synthesizing knowledge on emerging topics, as it facilitates the incorporation of diverse perspectives and supports the development of new conceptual frameworks (Torraco, 2005). By including studies employing a range of methodological approaches, this strategy enables a comprehensive and nuanced understanding of prompt engineering's role in marketing education.

Integrative Literature Review

Data Collection and Selection

The integrative literature review followed a systematic and rigorous process of identifying, selecting, and analyzing relevant literature to ensure a comprehensive examination of the research questions. Data collection commenced with an extensive search across major academic databases, including Google Scholar, arXiv, JSTOR, EBSCOhost, IEEE Xplore, and ScienceDirect. The search covered publications from 2014 to 2024, capturing a decade of scholarship to encompass both foundational studies and recent advancements in the field.

Search terms included combinations of keywords such as "prompt engineering," "marketing education," "AI in marketing," "advanced prompting techniques," "curriculum development," "teaching strategies," "Large Language Models," and "AI literacy." This broad and inclusive search strategy aligned with the principles of integrative reviews, which emphasize diversity in source types and perspectives (Whittemore & Knafl, 2005).

To ensure the relevance and quality of the literature, titles and abstracts were screened based on predefined inclusion and exclusion criteria. Inclusion criteria focused on peer-reviewed publications that explored AI applications in marketing, prompt engineering techniques, or educational strategies. Studies had to be published in English and offer empirical findings or theoretical insights pertinent to the research objectives. Exclusion criteria eliminated non-academic sources, non-English publications, and articles unrelated to marketing or education disciplines.

An initial pool of 512 articles was identified. After removing duplicates, 380 articles remained for abstract and title screening. Based on this review, 68 articles were deemed potentially significant and selected for full-text analysis. These articles were evaluated for methodological rigor, clarity of findings, and relevance to the integration of prompt engineering into marketing education. This process resulted in a final selection of

Table 1. Summary of Key Articles Used in the Analysis

Author(s)	Year	Title	Citation count	Summary
Wei J., Wang, X., Schuurmans, D., et al.	2024	Chain-of-Thought Prompting Elicits Reasoning in Large Language Models	12,407	Introduces Chain-of-Thought prompting, demonstrating how prompting LLMs to think step-by-step improves reasoning and problem-solving capabilities, particularly in complex tasks requiring intermediate reasoning steps.
Madaan, A., Tsvetkov, Y., & Yih, W.	2023	Self-Refine: Iterative Refinement with Self-Feedback	1,370	Proposes Self-Refinement prompting, enabling LLMs to iteratively improve their responses by generating and incorporating self-feedback, leading to enhanced answer quality and reduced errors.
Zhang, Y., Gu, A., Kung, H.-M., et al.	2024	Cumulative Reasoning in Large Language Models	87	Presents Cumulative Reasoning prompting, introducing roles like proposer, verifier, and reporter within LLMs to collaboratively enhance problem-solving accuracy and reduce reasoning errors in complex tasks.
Khot, T., Wu, Y., & Clark, P.	2022	Decomposed Prompting: A Modular Approach for Solving Complex Tasks	417	Discusses Decomposed Prompting, where complex questions are broken down into simpler sub-questions that LLMs can answer individually, improving accuracy and interpretability in multi-step reasoning tasks.
Yao, S., Zhao, Z., Yu, D., et al.	2023	Tree of Thoughts: Deliberate Problem Solving with Large Language Models	2,479	Introduces Tree of Thoughts prompting, allowing LLMs to explore multiple reasoning paths in a tree structure, mimicking human deliberation and enhancing decision-making and solution accuracy for complex problems.
Huang, M.-H., & Rust, R. T.	2022	A Framework for Collaborative Artificial Intelligence in Marketing	319	Introduces a collaborative AI framework for marketing, where prompt engineering is applied to enhance teamwork between AI and human marketers, improving content relevance and personalization.
Huang, M.-H., & Rust, R. T.	2021	A Strategic Framework for Artificial Intelligence in Marketing	1,403	Provides a framework for integrating AI into marketing strategies, emphasizing the importance of AI literacy among marketers and outlining how AI can create value in customer engagement, personalization, and decision-making.
Davenport, T. H., Guha, A., Grewal, D., & Bressgott, T.	2020	How Artificial Intelligence Will Change the Future of Marketing	2,398	Explores the transformative impact of AI on marketing, discussing emerging technologies, potential challenges, and the necessity for marketers to adapt to AI-driven tools and methodologies to stay competitive.
Reynolds, L., & McDonell, K.	2021	Prompt Programming for Large Language Models: Beyond the Few-Shot Paradigm	989	Examines advanced prompt engineering techniques that move beyond traditional few-shot learning, highlighting the significance of effective prompting in unlocking the full capabilities of LLMs for various applications.
Peterson, R. M., & Dover, H. F.	2014	Building Student Networks with LinkedIn: The Potential for Connections, Internships, and Jobs	99	Discusses LinkedIn as a networking tool, emphasizing its importance in marketing education and its role in building professional networks for students.
Wong, Z.Y., & Liem, G.A.D.	2020	Student Engagement: Current State of the Construct, Conceptual Refinement, and Future Research Directions	235	Discusses strategies for enhancing student engagement and learning outcomes, emphasizing contextualized learning and reflection, which are relevant for integrating new technologies like AI into marketing education.
Ferrell, O C., & Ferrell, L.	2020	Technology challenges and opportunities facing marketing education	88	Discusses emerging AI technologies, including prompt engineering, and their implications for marketing education. Highlights barriers to integrating prompt engineering in curricula.
Liu, P., Yuan, W., Fu, J., et al.	2023	Pre-train, Prompt, and Predict: A Systematic Survey of Prompting Methods in Natural Language Processing	5,222	Provides a comprehensive survey of prompting methods in NLP, discussing various techniques and their applications, including prompt engineering's role in enhancing AI models' performance.
Mauro et al.	2022	Machine learning and artificial intelligence use in marketing: a general taxonomy	96	Provides a taxonomy of AI applications in marketing, organizing use cases in areas like shopper behavior and decision making
Dwivedi, Y. K., Hughes, D. L., Ismagilova, E., et al.	2021	Artificial Intelligence (AI): Multidisciplinary Perspectives on Emerging Challenges, Opportunities, and Agenda for Research, Practice and Policy	3,467	Discusses the multidisciplinary aspects of AI, including challenges and opportunities, and emphasizes the need for education to address emerging issues related to AI implementation.
Jobin, A., Ienca, M., & Vayena, E.	2019	The Global Landscape of AI Ethics Guidelines	4,588	Analyses various AI ethics guidelines worldwide, highlighting the importance of ethical considerations in AI development and deployment, which is relevant for marketing professionals using AI tools.
Smith, J. A., & Osborn, M.	(2015)	Interpretative Phenomenological Analysis	2,577	Introduces interpretative phenomenological analysis, offering methodological insights relevant to qualitative research and data interpretation.
Wang, L., Shou, L., Zhang, M., et al.	2023	Plan-and-Solve Prompting: Improving Zero-Shot Chain-of-Thought Reasoning by Large Language Models	201	Proposes an advanced "Plan-and-Solve" prompting technique, which enhances AI's reasoning abilities in complex tasks by embedding planning steps prior to solution generation, relevant to multi-step marketing strategies.

(*Continued*)

Table 1. (Continued).

Author(s)	Year	Title	Citation count	Summary
Wang, L., Xu, W., Lan, Y., Hu, Z., Lan, Y., Lee, R.K., & Lim, E.	2024	RoleLLM: Benchmarking, Eliciting, and Enhancing Role-Playing Abilities of Large Language Models	183	Introduces RoleLLM, a framework for enhancing role-playing capabilities in LLMs, and provides the RoleBench dataset for role-specific language modelling.
Lee, S., & Kim, G.	2023	Recursion of Thought: A Divide-and-Conquer Approach to Multi-Context Reasoning with Language Models	21	Introduces Recursion of Thought prompting, enabling LLMs to handle tasks exceeding context length limitations by recursively dividing problems into manageable sub-tasks.
Ning, X., Lin Z., Zhou, Z., Wang, Z., Yang, H. & Wang, Y.	2024	Skeleton-of-Thought: Prompting LLMs for Efficient Parallel Generation	32	Discusses Skeleton-of-Thought prompting, where LLMs first generate a skeleton of the answer and then expand each point, improving efficiency and reducing latency in response generation.
Liu, B.	2012	Sentiment Analysis and Opinion Mining	11,043	Provides an overview of sentiment analysis techniques, relevant to marketing applications such as customer feedback analysis and social media monitoring using AI tools.
Vlačić, B., Corbo, L., Silva, S C E., & Dabić, M.	2021	The evolving role of artificial intelligence in marketing: A review and research agenda	558	Analyses the evolution of AI in marketing and proposes a research agenda for understanding AI's growing role in decision-making
Acar, O. A.	2024	Beyond Prompt Engineering: Skills Marketers Need to Deploy Generative AI Successfully	25	Identifies prompt engineering and complementary skills critical for effective generative AI deployment in marketing, including prompt refinement, ethical considerations, and creativity.
Lee, G. H., Lee, K. J., Jeong B. and Kim, T.	(2024)	Developing Personalized Marketing Service Using Generative AI	18	Investigates the application of generative AI in personalized marketing, focusing on techniques to refine prompts for customer-specific content creation.
Tafesse, W. & Wien, A.	2024	ChatGPT's applications in marketing: a topic modeling approach	11	Analyses ChatGPT's applications in marketing using topic modelling to categorize common prompt usage, revealing insights into prompt engineering's impact on campaign effectiveness.
Tafesse, W. & Wood, B	2024	Hey ChatGPT: an examination of ChatGPT prompts in marketing	7	Explores the specific prompt techniques applied in marketing contexts, examining their effectiveness in generating targeted responses. Provides an empirical analysis of prompt variations for enhanced customer engagement.
Kaplan, A., & Haenlein, M.	2019	Siri, Siri, in My Hand: Who's the Fairest in the Land? On the Interpretations, Illustrations, and Implications of Artificial Intelligence	3,951	Explores different types of AI and provides a framework (Three C Model) for understanding AI's internal and external implications in organizational contexts.
Zaman, K.	2022	Transformation of Marketing Decisions through Artificial Intelligence and Digital Marketing	45	Highlights AI's impact on marketing strategy, emphasizing predictive analytics and consumer insight generation
Ma, L., & Sun, B.	2020	Machine Learning and AI in Marketing – Connecting Computing Power to Human Insights	706	Discusses how machine learning can enhance data processing and decision support in marketing contexts, focusing on bridging computing and human insights
Fraiwan, M., & Khasawneh, N.	2023	A Review of ChatGPT Applications in Education, Marketing, Software Engineering, and Healthcare: Benefits, Drawbacks, and Research Directions	103	This review explores ChatGPT's applications across various fields, examining benefits, limitations, and recommending directions for future research in each domain.
Bruyn, A D., Viswanathan, V., Beh, Y S., Brock, J K., & Wangenheim, F V.	2020	Artificial Intelligence and Marketing: Pitfalls and Opportunities. Journal of Interactive Marketing	550	Discusses the dual potential of AI in marketing, highlighting both opportunities in personalization and risks, such as ethical concerns and data privacy issues.
Heston, T.F.	2023	Prompt Engineering for Students of Medicine and Their Teachers	16	Explores how prompt engineering can be adapted for medical education, offering insights relevant to developing domain-specific prompt engineering skills.
Kojima, T., Gu, S.S., Reid, M., Matsuo, Y., & Iwasawa, Y.	2022	Large Language Models are Zero-Shot Reasoners	4,466	Demonstrates that LLMs like GPT-3 exhibit reasoning abilities without task-specific training, implying potential for diverse applications in marketing and beyond.
Mustak, M., Salminen, J., Plé, L., & Wirtz, J.	2021	Artificial intelligence in marketing: Topic modeling, scientometric analysis, and research agenda	469	This paper uses topic modelling and scient metric analysis to map research on AI in marketing, identifying 10 major themes and proposing a research agenda for the field.
White, J., Fu, Q., Hays, S., Sandborn, M. et al.	2023	A Prompt Pattern Catalog to Enhance Prompt Engineering with ChatGPT	1,479	Introduces a catalogue of reusable prompt engineering patterns that enhance interaction and output with LLMs, beneficial across domains like education and software development.

36 key articles (see Table 1), each contributing meaningfully to the research objectives.

To further refine the analysis and highlight high-impact contributions, current Google Scholar citation counts (as of March 2025) were retrieved for each of the 36 selected articles. Citation counts ranged from 7 to over 12,000, with an aggregate total exceeding 62,100 citations. Highly cited works often focused on advanced prompting methods, such as chain-of-thought reasoning (Wei et al., 2024) and sentiment analysis (B. Liu, 2012), reflecting their foundational influence on AI and LLM research. For instance, Wei et al. (2024) recorded 12,407 citations, while B. Liu (2012) had over 11,000. In contrast, emerging or domain-specific studies in marketing education, such as Acar (2024) and Tafesse and Wien (2024), typically had fewer than 100 citations, underscoring their novelty and niche focus. This citation analysis highlighted both established knowledge and areas where further exploration is needed, particularly regarding the integration of advanced prompting techniques and ethical considerations into marketing curricula.

Unlike systematic literature reviews, which often apply strict inclusion protocols and may exclude studies based on methodological variance, the integrative review approach embraces a wide range of research designs and epistemological orientations. This methodological inclusivity enhances the depth and breadth of analysis by allowing for a more holistic synthesis of insights (Torraco, 2005). It was particularly well-suited to this study's goals of identifying interdisciplinary connections and informing the development of a conceptual framework. The thematic coding process, supported by this diverse literature base, ultimately produced five core themes central to understanding the role of prompt engineering in marketing education.

Data Analysis and Synthesis

The selected articles were analyzed using thematic analysis, following the six-phase framework developed by Braun and Clarke (2006). This method enabled the identification of meaningful patterns and recurring themes across the literature, providing a rich and nuanced synthesis of the data. Additionally, citation analysis was used as a secondary lens, allowing us to prioritize discussion of highly cited and influential works within the field.

Phase one involved familiarization with the data through multiple readings of each article. During this stage, initial impressions and observations were recorded, supporting the development of a deep, contextual understanding of each study's contributions and relevance.

In phase two, initial codes were generated by systematically identifying and highlighting salient features of the data that addressed the core research questions. Codes included categories such as "enhancing AI outputs," "prompt engineering techniques," "educational challenges," "AI literacy in marketing," and "curriculum integration strategies." These codes captured essential ideas, concepts, and trends that appeared consistently across the reviewed literature.

During phase three, related codes were grouped into broader candidate themes, and all relevant data excerpts were collated under each. Initial thematic maps were created to visualize how codes clustered into coherent themes, revealing key patterns in how prompt engineering was discussed in the context of marketing education.

In phase four, the themes were reviewed, refined, and revised to ensure internal consistency and distinctiveness. This involved assessing whether the themes accurately reflected the underlying data and whether they were meaningfully differentiated from one another. In some cases, themes were merged, restructured, or split to improve clarity and alignment with the research objectives.

Phase five focused on defining and naming the final themes. Each theme was clearly articulated with a defined scope, supported by illustrative data excerpts and theoretical grounding. The finalized thematic map (see Figure 1) identified five overarching themes that represent the central findings of the analysis:

(1) **The Critical Role of Prompt Engineering in Modern Marketing**: This theme encapsulates how prompt engineering enhances AI capabilities, addresses limitations of AI models, and empowers marketers with essential AI literacy skills.
(2) **Key Prompt Engineering Techniques for Marketing Students**: This theme identifies and analyses techniques such as Chain-of-Thought prompting, Self-Refinement prompting, Cumulative Reasoning prompting, and decomposition techniques relevant to marketing education.
(3) **Challenges in Integrating Prompt Engineering into Marketing Education**: This theme explores obstacles such as lack of faculty expertise, curriculum overload, rapid technological changes, and resource constraints.
(4) **Strategies for Effective Integration**: This theme offers practical solutions, including interdisciplinary collaboration, professional development

for faculty, curriculum design adjustments, and industry partnerships.

(5) **Implications for Marketing Education**: This theme discusses the broader impact of integrating prompt engineering, such as preparing students for the future workforce, enhancing competitive advantage, promoting ethical AI use, and advancing marketing practice.

In phase six, the analysis was structured around the finalized themes, integrating evidence from the literature to substantiate and elaborate on each. This stage involved synthesizing insights across studies into a cohesive and analytically rich narrative aligned with the study's research objectives. The thematic structure provided a clear framework for presenting the findings, enabling a comprehensive exploration of prompt engineering's role in marketing education (see Table 2).

Ensuring Rigor and Validity

To enhance the credibility and reliability of the findings, multiple validation strategies were employed throughout the research process. Triangulation was used by cross-verifying insights across a range of sources and studies, ensuring that conclusions were consistently supported by evidence from diverse authors and contexts (Denzin, 2009). For example, the significance of Chain-of-Thought prompting was corroborated by studies from both Wei et al. (2024) and Kojima et al. (2022), reinforcing the robustness of this finding.

Peer debriefing was also conducted, involving discussions of preliminary results and interpretations with academic colleagues specializing in marketing education. This process offered critical feedback, contributed to the refinement of the thematic analysis, and helped mitigate potential researcher bias. Additionally, reflexivity was maintained throughout the study, with ongoing reflection on the researcher's own assumptions, perspectives, and potential influences on the analysis (Malterud, 2001). By actively acknowledging and addressing personal biases, the researcher aimed to enhance the transparency, rigor, and trustworthiness of the study's conclusions.

Analysis and Results

The comprehensive literature review and thematic analysis conducted in this study have generated valuable insights into the significance of teaching prompt engineering to marketing students, as well as the key techniques and competencies they need to develop. Guided by the methodology outlined earlier, the analysis followed a systematic process of literature selection, thematic coding, and synthesis. The findings are organized around five critical themes that emerged from the data: the critical role of prompt engineering in modern marketing, key prompt engineering techniques relevant to marketing education, challenges in integrating these techniques into the curriculum, strategies for effective implementation, and Implications for Marketing Education. Each theme is explored in detail in the following sections, with supporting evidence drawn from the literature and aligned with the study's research objectives.

Theme 1: The Critical Role of Prompt Engineering in Modern Marketing

The analysis of the selected literature highlights the pivotal role of prompt engineering in enhancing the effectiveness of AI models across marketing applications (Reynolds & McDonell, 2021; Vlačić et al., 2021; Zaman, 2022). Well-designed prompts enable AI systems to generate outputs that are more accurate, contextually relevant, and creatively aligned with marketing objectives, attributes critical for tasks such as content creation, customer engagement, and data analysis (Liu et al., 2023; Ma & Sun, 2020). Research consistently demonstrates that high-quality prompts significantly improve the performance of AI tools, strengthening marketing strategies that depend on personalized communication and sentiment analysis (Kaplan & Haenlein, 2019; Tafesse & Wood, 2024). For instance, precisely engineered prompts enhance the responsiveness and relevance of AI-powered customer service chatbots, leading to more helpful and satisfying user experiences (Adam et al., 2020).

Beyond improving output quality, prompt engineering also addresses common limitations of AI models, including hallucinations and reasoning errors (Madaan et al., 2023; Waaler et al., 2024; Wei et al., 2024). Techniques such as Chain-of-Thought prompting and Self-Refinement prompting guide models through step-by-step reasoning and iterative self-correction, enhancing the reliability of AI-generated responses in complex marketing tasks (Fu et al., 2022; Kojima et al., 2022). These advanced methods contribute to more dependable AI performance and are increasingly

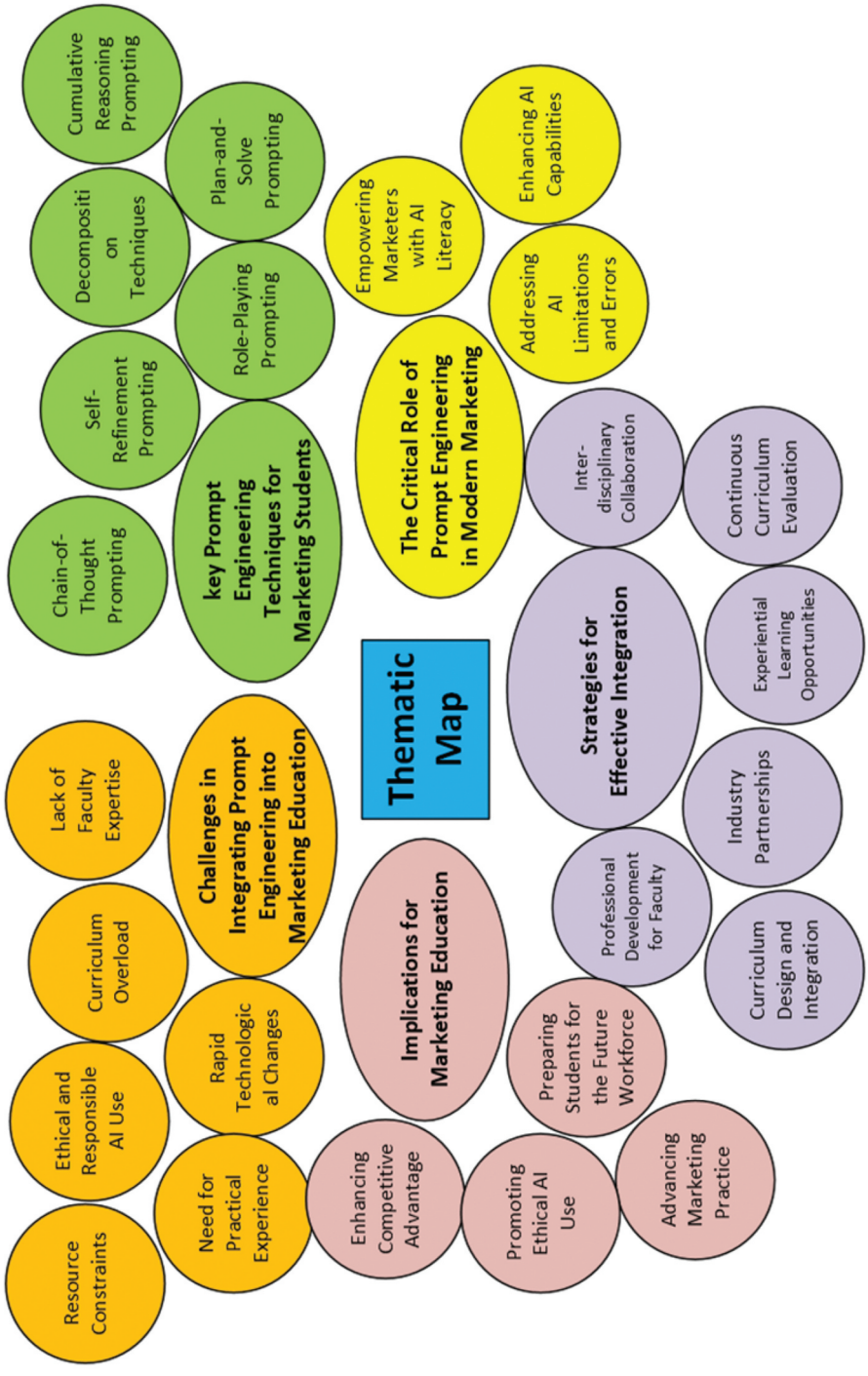

Figure 1. Thematic Map of Identified Themes and Sub-Themes

Table 2. Thematic AAnalysis of Previous Works

Main Theme	Sub-Themes	Supporting References
1. The Critical Role of Prompt Engineering in Modern Marketing	• Enhancing AI Capabilities • Addressing AI Limitations and Errors • Empowering Marketers with AI Literacy	Reynolds and McDonell (2021); White et al. (2023); P. Liu et al. (2023); Wei et al. (2024); Madaan et al. (2023); Huang and Rust (2021); Davenport et al. (2020); Tafesse and Wood (2024); Kaplan and Haenlein (2019); Zaman (2022); Fraiwan and Khasawneh (2023)
2. Key Prompt Engineering Techniques for Marketing Students	• Chain-of-Thought Prompting • Self-Refinement Prompting • Cumulative Reasoning Prompting • Decomposition Techniques • Plan-and-Solve Prompting • Role-Playing Prompting	Wei et al. (2024); Madaan et al. (2023); Zhang et al. (2024); Khot et al. (2022); Z. M. Wang et al. (2024); Yao et al. (2023); Zhang et al. (2024); S. Lee and Kim (2023); Ning et al. (2024); Tafesse and Wien (2024); Tafesse and Wood (2024) (L. Wang et al., 2023);
3. Challenges in Integrating Prompt Engineering into Marketing Education	• Lack of Faculty Expertise • Curriculum Overload • Rapid Technological Changes • Resource Constraints • Ethical and Responsible AI Use • Need for Practical Experience	Ferrell and Ferrell (2020); Peterson and Dover (2014); Dwivedi et al. (2021); Huang and Rust (2021); Elhajjar et al. (2020); Barclay (1995); Bruyn et al. (2020); Jobin et al. (2019); P. Liu et al. (2023); Acar (2024); Kaplan and Haenlein (2019); Davenport et al. (2020); Tafesse and Wien (2024)
4. Strategies for Effective Integration	• Professional Development for Faculty • Interdisciplinary Collaboration • Curriculum Design and Integration • Industry Partnerships • Experiential Learning Opportunities • Continuous Curriculum Evaluation	Ferrell and Ferrell (2020); Huang and Rust (2021); Zhang et al. (2024); Peterson and Dover (2014); Reynolds and McDonell (2021); Davenport et al. (2020); Zhang et al. (2024); Tafesse and Wien (2024); Peterson and Dover (2014); Jobin et al. (2019); Acar (2024); Kaplan and Haenlein (2019); Dwivedi et al. (2021)
5. Implications for Marketing Education	• Preparing Students for the Future Workforce • Enhancing Competitive Advantage • Promoting Ethical AI Use • Advancing Marketing Practice	Barclay (1995); Doe (2023); Huang and Rust (2021); Jobin et al. (2019); Mustak et al. (2021); Zhang et al. (2024); Kaplan and Haenlein (2019); Tafesse and Wien (2024); Vlačić et al. (2021)

Table 3. Overview of Advanced Prompting Techniques

Technique	Description	Marketing Applications	Key References
Chain-of-Thought Prompting	Guides LLMs to generate intermediate reasoning steps, enhancing problem-solving by breaking down tasks into logical sequences.	Market analysis, strategic planning, and data interpretation tasks.	Wei et al. (2024); Kojima et al. (2022); Tafesse and Wood (2024)
Self-Refinement Prompting	Enables LLMs to iteratively improve their responses based on self-generated feedback, enhancing accuracy and quality.	Content creation, copywriting, and campaign messaging refinement.	Madaan et al. (2023); Zhang et al. (2024); Tafesse and Wien (2024)
Cumulative Reasoning Prompting	Involves roles like proposer, verifier, and reporter within LLMs to collaboratively solve problems and reduce errors.	Collaborative strategy development, decision-making processes.	Zhang et al. (2024); L. Wang et al. (2023); Tafesse and Wood (2024)
Decomposition Techniques	Breaks down complex questions into simpler sub-tasks that can be addressed individually, improving manageability and accuracy.	Multi-component campaign planning, customer journey mapping.	Fu et al. (2022); Khot et al. (2022); Z. M. Wang et al. (2024); Yao et al. (2023)
Plan-and-Solve Prompting	Introduces a planning phase prior to task execution, helping LLMs organize their approach to complex tasks and reducing reasoning errors.	Long-term marketing strategy, complex campaign planning, decision-making frameworks.	L. Wang et al. (2023); Tafesse and Wien (2024)
Role-Playing Prompting	Enhances LLMs' role-specific response generation, facilitating customer-centric marketing by adopting distinct personas.	Customer segmentation, targeted content creation, personalized customer interactions.	Z. M. Wang et al. (2024); S. Lee and Kim (2023)

recognized as essential for marketing professionals working with generative tools (Tafesse & Wien, 2024).

The growing adoption of AI in marketing has also intensified the need for AI literacy among marketers, including a solid understanding of prompt engineering principles. As such, educational frameworks are beginning to emphasize the development of these skills, aiming to equip future professionals with the ability to responsibly and effectively leverage AI's capabilities (Fraiwan & Khasawneh, 2023; Huang & Rust, 2022).

Theme 2: Key Prompt Engineering Techniques for Marketing Students

The thematic analysis identified several advanced prompting techniques that are particularly relevant to marketing education. Each technique enhances the reasoning abilities of AI models and improves the quality of outputs in marketing applications, while simultaneously fostering critical skills in students (see Table 3). Chain-of-Thought prompting supports complex problem-solving by guiding AI models through a series of intermediate reasoning steps before arriving at a final output (Wei et al., 2024). This technique is especially valuable for marketing students as it mirrors strategic tasks that require multi-step analysis, such as market segmentation, customer journey mapping, and campaign planning. Engaging with CoT prompting encourages students to break down complex marketing problems systematically, promoting deeper analytical thinking and enabling more robust, logically constructed AI-generated solutions (Kaplan & Haenlein, 2019). Self-Refinement prompting enables AI models to iteratively assess and improve their responses based on self-generated feedback (Madaan et al., 2023). This technique is highly applicable to content creation tasks, where initial drafts must be refined to ensure alignment with brand voice and audience engagement goals. Teaching Self-Refinement prompting encourages reflective thinking, enabling students to critically evaluate AI outputs, identify areas for improvement, and guide iterative refinements, skills essential for maintaining quality and consistency in marketing communications (Tafesse & Wood, 2024). Cumulative Reasoning prompting introduces a structured, collaborative reasoning process in which the AI assumes roles such as proposer, verifier, and reporter (Zhang et al., 2024). This framework aligns well with real-world marketing team dynamics, where collaboration, peer review, and validation are crucial. CR prompting equips students with tools to improve accuracy, reduce errors, and support decision-making in strategy development, while also reinforcing teamwork and accountability (Wong & Liem, 2022). Decomposition techniques, including Decomposed Prompting and Plan-and-Solve prompting, allow AI models to manage complex tasks by breaking them into smaller, more manageable sub-tasks (Khot et al., 2022; Fu et al., 2022; Yao et al., 2023). These techniques are particularly suited for multifaceted marketing initiatives, such as multi-channel campaigns or product launches. Teaching decomposition techniques encourages students to adopt a structured, modular approach to problem-solving, tackling each component individually before integrating them into a comprehensive marketing solution (Tafesse & Wien, 2024). Plan-and-Solve prompting enhances structured

thinking by introducing a planning phase before attempting task execution (L. Wang et al., 2023). This approach is ideal for marketing students working on complex, long-term strategies or campaign planning, where foresight and sequencing are essential. By adopting this technique, students learn to articulate clear objectives and develop methodical plans of action, skills that directly translate to effective campaign management and strategic alignment. Role-Playing prompting enables AI models to assume distinct personas, such as a customer, marketer, or brand representative, and produce role-specific outputs (S. Lee & Kim, 2023; L. Wang et al., 2023). This technique is particularly useful in customer-centric marketing scenarios, including personalized messaging, targeted engagement, and persona-based strategy development. For students, practicing Role-Playing prompting cultivates empathy, customer insight, and the ability to craft authentic, contextually appropriate marketing communications.

Theme 3: Challenges in Integrating Prompt Engineering into Marketing Curriculum

The integration of prompt engineering into marketing education presents a range of complex and multifaceted challenges (see Table 4). One of the most significant barriers is the limited faculty expertise in AI and prompt engineering across many marketing departments (Heston, 2023). Many marketing educators lack formal training in advanced AI technologies, making it difficult to confidently teach the technical and conceptual nuances of prompt engineering. Addressing this gap necessitates targeted faculty development initiatives and interdisciplinary collaboration, particularly with computer science or data science departments. However, these efforts require institutional investment, strategic planning, and long-term commitment.

Another major challenge is the already saturated nature of marketing curricula, which are densely packed with essential foundational topics. Introducing prompt engineering risks overburdening both the curriculum and students' cognitive load. Effectively incorporating these new technological competencies requires careful curriculum redesign, one that maintains focus on core marketing principles while integrating AI-related content in a streamlined and pedagogically coherent manner (Peterson & Dover, 2014; Saban et al., 2001).

Resource limitations further complicate implementation. A robust prompt engineering curriculum often depends on access to specialized tools, platforms, and software, resources that may be financially or logistically out of reach for many institutions (Davenport et al., 2020; Huang & Rust, 2021). Institutions must consider issues of equity and access, ensuring that all students and faculty can meaningfully engage with the technology regardless of budget constraints.

The rapid pace of AI development also poses a critical challenge. As AI tools and capabilities evolve rapidly, curriculum content must be continuously updated to reflect current industry practices and innovations. This dynamic landscape places additional pressure on faculty to remain up to date with technological advancements and demands frequent curriculum review cycles, adding to institutional workload and resource demands (Dwivedi et al., 2021; Zhang et al., 2024).

Equally important are the ethical implications of integrating AI into marketing education. As AI increasingly shapes consumer interactions and marketing decisions, students must be equipped to navigate concerns such as data privacy, algorithmic bias,

Table 4. Challenges and Proposed Solutions for Curriculum Integration

Challenges	Proposed Solutions	Supporting References
Lack of Faculty Expertise	- Provide professional development and AI training for faculty - Encourage interdisciplinary collaboration with computer science departments	Doe (2023); Bruyn et al. (2020); Huang and Rust (2021); Ferrell and Ferrell (2020);
Curriculum Overload	- Integrate AI topics into existing courses rather than adding new ones - Prioritize essential skills and streamline content	Peterson and Dover (2014); Reynolds and McDonell (2021); Tafesse and Wien (2024)
Rapid Technological Changes	- Establish continuous curriculum review processes - Engage faculty in ongoing research and professional networks to stay updated	Dwivedi et al. (2021); Zhang et al. (2024); Kaplan and Haenlein (2019); Tafesse and Wood (2024)
Resource Constraints	- Utilize open-source AI tools and platforms - Seek industry partnerships for resources, tools, and practical experiences for students	Barclay (1995); Huang and Rust (2021); Davenport et al. (2020); Zhang et al. (2024)
Ethical and Responsible AI Use	- Incorporate ethics training into AI-related courses - Emphasize transparency, fairness, and accountability in AI practices	Jobin et al. (2019); P. Liu et al. (2023); Acar (2024); Kaplan and Haenlein (2019)
Need for Practical Experience	- Establish industry partnerships for internships and real-world projects - Implement case-based learning to simulate real marketing challenges	Davenport et al. (2020); Elhajjar et al. (2020); Tafesse and Wien (2024)

and the ethical accountability of automated systems (Acar, 2024; Jobin et al., 2019). Embedding ethical considerations into prompt engineering education ensures students develop a responsible, critical understanding of AI. This ethical grounding promotes transparency, fairness, and accountability in future marketing practices, aligning student competencies with both industry expectations and societal norms (Kaplan & Haenlein, 2019).

Finally, the need for experiential learning opportunities presents an additional challenge. While theoretical instruction in prompt engineering is foundational, practical, hands-on experience is essential for skill development. Providing such experiences often requires strategic partnerships with industry to facilitate internships, live case studies, and project-based learning. These collaborations allow students to apply prompt engineering techniques in authentic, dynamic marketing contexts (Davenport et al., 2020; Elhajjar et al., 2020). However, establishing and maintaining such partnerships, and ensuring consistent, high-quality experiences for students, demands sustained institutional coordination and effort.

In addressing these challenges, educational institutions must design prompt engineering instruction that is technologically current, ethically responsible, and pedagogically grounded. A balanced, well-supported integration strategy will ensure students are equipped not only with cutting-edge AI skills but also with the critical and ethical frameworks necessary for success in the evolving marketing landscape.

Theme 4: Strategies for Effective Integration

The literature offers several strategic approaches for effectively integrating prompt engineering into marketing curricula (see Table 5), addressing challenges related to faculty expertise, curriculum constraints, and limited institutional resources (Elhajjar et al., 2020; Heston, 2023; Huang & Rust, 2021; Mustak et al., 2021; Puntoni et al., 2021; Salchenberger, 1989).

One of the most widely endorsed strategies is interdisciplinary collaboration. By fostering partnerships between marketing departments and disciplines such as computer science or AI, institutions can enrich marketing curricula with technical expertise and broaden students' exposure to AI concepts. Joint courses, co-teaching models, and interdisciplinary workshops provide opportunities for students to engage with diverse perspectives and benefit from integrated, cross-functional learning environments (Bruyn et al., 2020; Davenport et al., 2020).

Equally essential is faculty development. Institutions are encouraged to invest in training programs, seminars, and self-paced resources that equip marketing educators with foundational AI knowledge and prompt engineering techniques. Supporting faculty engagement in research on AI applications in marketing can also cultivate a culture of innovation and ensure teaching remains current with industry advancements (Ferrell & Ferrell, 2020; Heston, 2023).

Table 5. Strategies for Effective Integration of Prompt Engineering into Marketing Curriculum

Strategy	Description	Implementation Approaches	Key References
Professional Development for Faculty	Provide faculty with necessary training in AI and prompt engineering to ensure effective teaching.	Workshops and training programs, ongoing research opportunities, attendance at AI-focused conferences.	Huang and Rust (2021); Heston (2023); Bruyn et al. (2020)
Interdisciplinary Collaboration	Foster collaboration between marketing and computer science or AI departments to enhance curriculum content.	Co-teaching models, joint courses, collaborative projects between departments.	Davenport et al. (2020); Saban et al. (2001); Huang and Rust (2022)
Curriculum Design and Integration	Seamlessly integrate AI and prompt engineering concepts into existing courses to avoid curriculum overload.	Incorporate prompt engineering topics into digital marketing and analytics courses, use project-based learning for contextual application.	Peterson and Dover (2014); Reynolds and McDonell (2021)
Industry Partnerships	Collaborate with industry to provide students with real-world AI and prompt engineering experiences.	Internships, guest lectures, industry-sponsored projects, and mentorship from practitioners using AI in marketing.	Elhajjar et al. (2020); Davenport et al. (2020)
Experiential Learning Opportunities	Use project-based learning and case studies to provide practical prompt engineering experience.	Engage students in AI-driven marketing simulations, analyze real-world case studies, and create assignments focused on prompt engineering tasks relevant to the industry.	Huang and Rust (2021); Mustak et al. (2021); Heston (2023)
Ethical AI Use and Responsible Practices	Emphasize ethical considerations in prompt engineering and AI applications to promote responsible practices.	Integrate modules on AI ethics, discuss bias and fairness, ensure transparency in AI-driven decisions, and encourage students to approach AI with accountability.	Jobin et al. (2019); Acar (2024); Kaplan and Haenlein (2019)
Continuous Curriculum Evaluation	Regularly review and update course content to keep up with the rapid evolution of AI technologies.	Establish periodic curriculum reviews, incorporate feedback from faculty, students, and industry experts to align content with current AI advancements.	Dwivedi et al. (2021); Zhang et al. (2024)

Curriculum design and integration play a critical role in embedding AI and prompt engineering without overloading existing programs. Rather than developing entirely new courses, institutions can incorporate prompt engineering modules or exercises into existing classes, such as digital marketing, marketing analytics, or strategy. This approach provides contextual relevance and supports progressive skill development, aligning with curricular efficiency and pedagogical coherence (Huang & Rust, 2021; Peterson & Dover, 2014).

Providing students with experiential learning opportunities is another key strategy. Internships, project-based learning, and partnerships with AI-driven marketing firms allow students to apply their skills in real-world settings. These engagements not only strengthen practical competencies but also bridge the gap between academic learning and industry expectations. Collaborations with businesses further increase student motivation and provide insight into how prompt engineering is applied within professional marketing environments (Tafesse & Wien, 2024).

In addition, integrating a strong ethical focus into AI education is essential. Marketing students must be trained to consider the implications of AI-driven decision-making, including issues related to bias, data privacy, and algorithmic accountability. Embedding discussions around transparency, fairness, and responsible AI use into coursework fosters critical awareness and prepares students to navigate the ethical complexities of AI-integrated marketing practices (Jobin et al., 2019; Tafesse & Wood, 2024).

Given the rapid evolution of AI, it is also vital for institutions to adopt mechanisms for continuous curriculum evaluation. Regular updates to course content ensure alignment with current technologies and industry trends. Establishing feedback loops involving students, faculty, and industry stakeholders enables responsive curriculum adjustments, allowing programs to remain dynamic and future-ready (Dwivedi et al., 2021; Zhang et al., 2024).

Taken together, these strategies offer a multifaceted approach to embedding prompt engineering into marketing education. When implemented thoughtfully, they can help institutions build AI literacy, foster ethical awareness, and prepare students to thrive in increasingly AI-driven marketing environments.

Theme 5: Implications for Marketing Education

The integration of prompt engineering into marketing education carries far-reaching implications that extend beyond curricular enhancement. It signifies a transformative shift in how institutions prepare students for the future workforce, strengthen their own strategic positioning, promote ethical AI practices, and contribute to the evolution of marketing as a discipline.

Preparing Students for the Future Workforce

In an era where artificial intelligence underpins many aspects of marketing strategy, equipping students with prompt engineering skills is increasingly essential for professional success. Research by Huang and Rust (2022) and Tafesse and Wood (2024) underscores that proficiency in prompt engineering empowers students to effectively utilize tools such as Large Language Models for content creation, customer engagement, data interpretation, and personalization. Mastery of advanced prompting techniques enables students to generate more accurate, contextually relevant, and creative outputs, positioning them as agile, innovative contributors in an AI-driven job market. This not only enhances individual employability but also builds a workforce capable of adapting to rapid technological shifts and driving marketing innovation at scale.

Enhancing Competitive Advantage of Educational Institutions

For educational institutions, integrating prompt engineering represents a strategic opportunity to differentiate their programs and demonstrate leadership in future-focused marketing education. Mustak et al. (2021) note that institutions embracing technological innovation are more likely to attract students seeking programs aligned with industry needs. Curricula that include AI literacy and prompt engineering also support the development of strong industry partnerships, facilitating internships, collaborative research, and hands-on learning experiences. These relationships deepen the practical relevance of academic programs and enhance institutional reputation. As a result, institutions can improve enrollment, unlock funding opportunities, and solidify their standing in both academic and professional circles.

Promoting Ethical AI Use in Marketing

The ethical use of AI is a critical consideration in modern marketing education. Integrating prompt engineering provides a valuable platform for engaging students with pressing ethical issues such as data privacy, algorithmic bias, transparency, and accountability (Jobin et al., 2019). Embedding these themes into instruction equips students with the tools to identify and mitigate biases in AI outputs, understand the responsible use of consumer data, and recognize the importance of transparency in automated decision-making. Promoting

a culture of ethical awareness and accountability prepares students to make informed, values-driven decisions that align with legal standards and societal expectations, building public trust and enhancing organizational reputation.

Advancing Marketing Practice Through Innovation

A marketing workforce trained in prompt engineering is well-positioned to drive innovation and efficiency in the application of AI tools. As Vlačić et al. (2021) explain, prompt engineering allows marketers to tailor AI responses to specific audience segments, enhancing personalization and customer engagement. Mastery of prompting techniques facilitates the development of sophisticated strategies leveraging AI's capabilities in segmentation, automation, and predictive analytics. These advancements improve marketing outcomes while fostering a culture of experimentation and continuous improvement. Organizations benefit from enhanced agility, strategic differentiation, and the ability to deliver exceptional customer experiences through more nuanced and data-driven campaigns.

Overall, the integration of prompt engineering into marketing education is not merely a curricular innovation, it is a strategic imperative. For students, it enhances employability and prepares them to lead in an AI-augmented profession. For institutions, it offers a path to increased relevance, engagement, and reputation. From an ethical standpoint, it ensures that future marketers are equipped to navigate the complexities of AI use responsibly. Most importantly, it empowers the industry by cultivating a generation of marketing professionals who can harness AI not just for efficiency, but for meaningful, forward-thinking innovation. These implications underscore the critical importance of adopting prompt engineering education to meet both current demands and future challenges in the marketing landscape.

Conceptual Framework for Integrating Prompt Engineering into Marketing Education

The integration of prompt engineering into marketing education requires a comprehensive, strategically designed framework that responds to the multifaceted challenges identified through thematic analysis. Grounded in established educational theories, including constructivism, experiential learning, social constructivism, and connectivism, the proposed conceptual framework (see Figure 2) provides a structured and pedagogically sound approach to preparing marketing students for success in an AI-driven industry. The framework consists of five interrelated components: foundational knowledge in AI and marketing, skill development in prompt engineering, curriculum integration and design, faculty development and interdisciplinary collaboration, and ethical and responsible AI use. Each component is directly informed by the themes identified in the analysis, ensuring that the framework is not only academically grounded but also practically responsive to the needs of students, educators, and institutions navigating the evolving landscape of AI-integrated marketing education.

Description of the Conceptual Framework

The proposed conceptual framework comprises five interrelated components designed to support the effective integration of prompt engineering into marketing

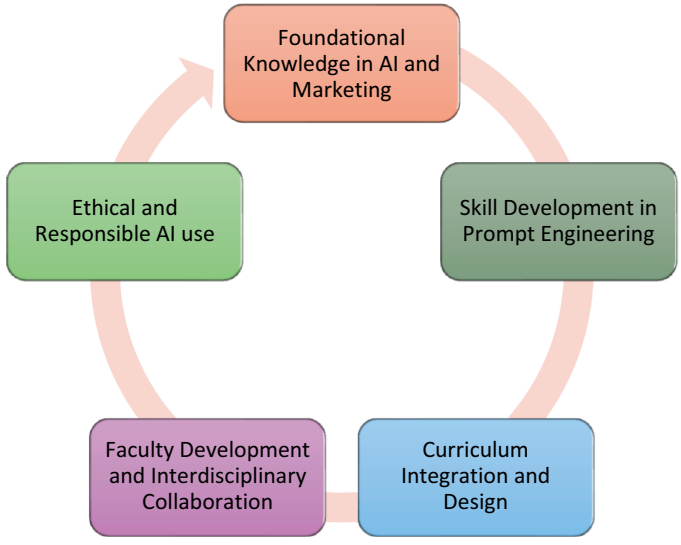

Figure 2. Conceptual Framework for Integrating Prompt Engineering into Marketing Education

education. Each component aligns with findings from the thematic analysis and is underpinned by established educational theories, ensuring both academic rigor and practical relevance.

Foundational Knowledge in AI and Marketing

Establishing a strong foundation in both AI and core marketing principles is essential for students to meaningfully engage with prompt engineering. This component introduces fundamental AI concepts, such as machine learning, natural language processing, and the functionalities of Large Language Models like GPT-4, within the context of marketing applications. Students learn how these technologies are applied in areas such as customer segmentation, predictive analytics, and personalized content creation. This foundation directly supports Theme 1, which emphasizes the critical role of prompt engineering in modern marketing (Reynolds & McDonell, 2021; Tafesse & Wood, 2024). This component is grounded in constructivist learning theory (Piaget, 1954), which posits that learners build new knowledge by connecting it to existing cognitive structures. By relating AI concepts to familiar marketing strategies, educators facilitate meaningful and integrative learning. For example, students might analyze how AI-driven market research enhances traditional survey techniques, deepening their understanding through comparative learning.

Skill Development in Prompt Engineering

Hands-on practice is critical to mastering prompt engineering. This component emphasizes experiential learning through direct engagement with AI tools, allowing students to apply techniques such as Chain-of-Thought prompting, Self-Refinement prompting, Cumulative Reasoning prompting, Decomposition techniques, and Role-Specific prompting. These techniques enhance AI's reasoning and output quality, particularly in content creation, strategy development, and personalization. This component responds to Theme 2, which highlights the need for practical training in key prompting techniques (Madaan et al., 2023; Z. M. Wang et al., 2024; Wei et al., 2024). It is guided by Kolb's Experiential Learning Theory (1984), which emphasizes learning as a cyclical process of concrete experience, reflective observation, abstract conceptualization, and active experimentation. Through workshops, simulations, and iterative projects, students gain firsthand experience with prompting, analyze their results, refine their strategies, and apply their insights across varied marketing contexts, for instance, by testing prompt effectiveness across customer segments.

Curriculum Integration and Design

To ensure feasibility and relevance, prompt engineering must be seamlessly integrated into existing marketing curricula. This component advocates for embedding prompting concepts and exercises into courses such as digital marketing, consumer behavior, and marketing analytics. Project-based assignments allow students to apply prompt engineering in realistic scenarios without overwhelming the curriculum. This approach addresses Theme 3, which identifies challenges related to curriculum overload and resource limitations (Ferrell & Ferrell, 2020; Peterson & Dover, 2014). The component is supported by social constructivist theory (Vygotsky, 1978), which emphasizes learning through collaboration and interaction. Group projects and peer-led workshops foster collective knowledge construction and contextual understanding. For example, teams might co-develop prompts for an AI-assisted campaign, share results, and collaboratively refine strategies based on feedback.

Faculty Development and Interdisciplinary Collaboration

Empowering educators with the necessary knowledge and tools is vital for the successful teaching of prompt engineering. This component includes professional development initiatives such as AI training workshops, collaborative seminars, and resource-sharing platforms. Additionally, fostering interdisciplinary collaboration with departments such as Computer Science or Information Systems enriches the learning environment and curriculum content. This strategy directly aligns with Theme 4, which calls for faculty upskilling and cross-departmental partnerships (Davenport et al., 2020; Huang & Rust, 2021). The theoretical foundation for this component is connectivism (Siemens, 2005), which views learning as a process of forming connections across knowledge networks. By building communities of practice among faculty and encouraging interdisciplinary knowledge exchange, institutions foster continuous learning and curricular innovation. Examples include co-taught AI-marketing modules and joint research on applied prompting strategies.

Ethical and Responsible AI Use

Developing students' ethical awareness and critical thinking is essential in the context of AI-driven marketing. This component involves incorporating modules on

AI ethics that explore issues such as data privacy, algorithmic bias, transparency, and accountability. Case studies, classroom debates, and reflective writing tasks help students evaluate the ethical dimensions of AI applications and consider their broader societal impact. This directly supports Theme 5, which emphasizes the need for ethically grounded AI education (Acar, 2024; Jobin et al., 2019). While not attributed to a single theory, this component aligns with educational frameworks focused on critical pedagogy and the development of moral reasoning. By engaging with real-world ethical dilemmas, such as biased algorithmic targeting or invasive personalization, students build the capacity to make informed, socially responsible decisions in their future marketing roles.

Integration of Educational Theories

The conceptual framework is underpinned by educational theories that enhance its pedagogical effectiveness. Constructivism supports the foundational knowledge component by facilitating the construction of new understanding based on existing knowledge. Experiential learning theory informs the skill development component, promoting learning through direct experience and reflection. Social constructivism underlies the curriculum integration component, emphasizing collaborative learning and knowledge construction through social interaction. Connectivism guides the faculty development component, highlighting the importance of networks and interdisciplinary connections in the learning process. The proposed conceptual framework offers a comprehensive and academically justified approach to integrating prompt engineering into marketing education. By addressing the critical components of foundational knowledge, skill development, curriculum integration, faculty expertise, and ethical considerations, the framework directly responds to the themes identified in the analysis. Each component is carefully designed to tackle the specific challenges and leverage the opportunities highlighted in the study, ensuring that the integration of prompt engineering is both effective and sustainable.

Grounded in educational theories, the framework enhances pedagogical effectiveness by aligning with how students learn best. It facilitates active engagement, collaborative learning, and critical thinking, preparing students to excel in an AI-driven marketing landscape. By fostering faculty development and interdisciplinary collaboration, the framework also ensures that educators are equipped to deliver high-quality instruction and adapt to technological advancements. Ultimately, the integration of prompt engineering into marketing education, as guided by this framework, positions students and institutions at the forefront of innovation. It equips future marketers with the skills and ethical awareness necessary to harness AI technologies responsibly, driving progress in the industry and contributing to positive societal impacts.

Illustrative Case Study: Prompt Engineering Workshop at a Higher Education Institute

To illustrate the practical application of the conceptual framework and to provide insights into integrating prompt engineering into marketing education, a classroom workshop was carried out with MSc Digital Marketing students at a Higher Education Institute in October 2024. Although not originally conceived as a research study, this classroom exercise demonstrates how prompt engineering techniques can be operationalized in an educational context, reflecting the proposed framework's components in an authentic learning environment.

Workshop Context and Objectives

This classroom workshop activity was part of the postgraduate MSc Digital Marketing program. The primary objectives were to enhance students' understanding of artificial intelligence in marketing by providing foundational AI concepts relevant to the field, to develop practical prompt engineering skills by having students craft effective prompts using advanced techniques, to integrate prompt engineering into marketing tasks for real-world applicability, and to engage students in discussions about ethical implications of AI in marketing. These objectives align with the proposed conceptual framework, focusing on foundational knowledge, skill development, curriculum integration, and ethical awareness.

Workshop Design and Implementation

The activity included fifty students, divided into ten groups labeled A to J. Each group was assigned typical digital marketing tasks, such as social media posts, blog articles, and e-mail marketing campaigns. Initially, the students created content based on their existing knowledge of marketing. Following this initial phase, an instructional session introduced prompt engineering concepts and techniques. Students learned how to craft prompts for large language models, utilize advanced prompting strategies such as chain-of-thought and self-refinement prompting, and leverage generative AI tools like GPT-4 for content creation. They then revisited the

same tasks with these new techniques, enabling an informal comparison of content quality.

Instructional Feedback and Observations

To evaluate the effectiveness of this instructional exercise, course-level feedback was gathered through a simple rating process on factors such as clarity of messaging, inclusion of key features, and the appropriateness of style for the target audience. Students completed brief self- and peer evaluations designed primarily for pedagogical feedback, a common practice in classroom settings. These reflections helped students better understand how prompt engineering influenced their approach to content creation.

Summary of Outcomes

Overall, students produced more refined and relevant marketing outputs after learning prompt engineering techniques, reported higher satisfaction with the clarity and creativity of their content and felt better prepared to integrate AI tools into practical marketing tasks. This outcome aligns with the conceptual framework's emphasis on skill development, curriculum integration, and ethical orientation. This successful classroom workshop activity suggests that teaching prompt engineering can enrich the learning experience and prepare students for AI-driven marketing challenges.

Limitations

Because this workshop was part of routine coursework rather than a formal research study, the observations reported here are generated from classroom feedback rather than findings from a research study designed to produce generalizable findings. Future formal investigations that require ethics approval and broader sampling could complement these preliminary insights with empirical evidence.

Discussion

The integration of prompt engineering into marketing education holds significant implications for educators, institutions, students, and the broader marketing profession. The findings of this study underscore the urgent need to embed advanced AI techniques within the curriculum and reveal the transformative potential of such integration for the future of marketing practice. By aligning pedagogical strategies with the evolving technological and ethical demands of the industry, marketing education can cultivate graduates who are not only technically proficient but also ethically informed, strategically agile, and well-positioned to lead innovation in an AI-driven landscape.

Implications for Marketing Education

As artificial intelligence continues to reshape the marketing landscape, traditional curricula may no longer be sufficient to prepare students for a technology-driven industry (Huang & Rust, 2021). The growing importance of prompt engineering in enhancing AI performance within marketing contexts underscores the necessity of integrating this skillset into marketing education. The conceptual framework developed in this study offers a structured, theoretically grounded approach to this integration, emphasizing five key components: foundational AI and marketing knowledge, skill development, curriculum design, faculty expertise, and ethical considerations.

For educators, the integration of prompt engineering calls for a reevaluation of pedagogical strategies and curriculum content. Teaching these competencies effectively requires faculty to build proficiency in emerging AI technologies, supported by ongoing professional development and interdisciplinary collaboration, particularly with departments such as computer science and information systems (Heston, 2023). The illustrative case study conducted as part of this research reinforces the value of experiential learning, showing that hands-on engagement with prompt engineering significantly enhances students' content creation skills and overall confidence in applying AI tools.

Institutions that proactively adopt prompt engineering into their programs position themselves at the forefront of innovation in marketing education. Such initiatives can enhance institutional competitiveness by attracting students seeking future-ready curricula, strengthening industry partnerships, and elevating academic reputation. Guided by the proposed conceptual framework, institutions can integrate prompt engineering into existing marketing courses or develop dedicated modules that reflect current industry demands (Davenport et al., 2020; Mustak et al., 2021). This strategic approach ensures that students graduate with both technical fluency and ethical awareness, equipping them to succeed in and shape the future of AI-driven marketing.

Implications for Students

For students, acquiring prompt engineering skills opens new avenues for creativity, innovation, and strategic thinking within the marketing discipline (see

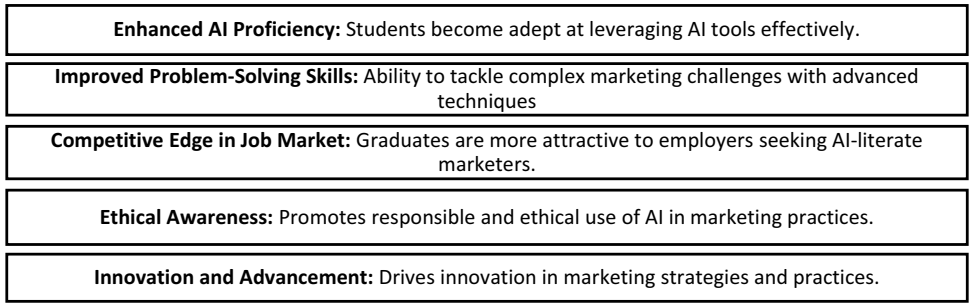

Figure 3. Benefits of Teaching Prompt Engineering to Marketing Students

Figure 3). Mastery of advanced prompting techniques empowers students to harness AI tools effectively, enabling the development of targeted, data-driven strategies that enhance customer engagement and improve campaign performance. The illustrative case study demonstrated substantial improvements in students' content creation capabilities following prompt engineering instruction, affirming the practical value of integrating these skills into marketing education.

In parallel, the growing focus on the ethical implications of AI in marketing underscores the importance of training students in responsible AI use (Jobin et al., 2019). Embedding discussions of transparency, fairness, and bias mitigation within the curriculum ensures that future marketers are equipped to engage with AI technologies ethically and in alignment with societal expectations. Addressing these considerations not only prepares students to comply with emerging industry standards (Acar, 2024) but also enhances their professional integrity and strengthens consumer trust, key assets in today's marketing landscape.

Implications for the Marketing Industry

The marketing industry stands to benefit significantly from a workforce proficient in prompt engineering and broader AI literacy. Organizations that employ marketers skilled in advanced prompting techniques are better positioned to leverage AI for personalized campaigns, deeper customer engagement, and more insightful data analysis (Vlačić et al., 2021). When integrated effectively, prompt engineering enables AI-driven marketing strategies to elevate the customer experience by delivering content that is highly relevant and tailored to individual preferences.

Studies by Tafesse and Wien (2024) affirm that prompt engineering allows marketers to shape AI outputs with precision, ensuring alignment with brand voice and audience expectations. As brands increasingly strive for personalization at scale, the ability to customize AI responses becomes a critical differentiator. Professionals trained in advanced techniques, such as Chain-of-Thought prompting, Self-Refinement, and Role-Specific prompting, are likely to become invaluable to organizations seeking to navigate the complexities of AI-enhanced marketing. Their expertise contributes to innovation, efficiency, and sustained competitive advantage.

Despite the growing integration of AI in business, a substantial skills gap remains. As discussed earlier (Mayer et al., 2025), many organizations remain far from AI maturity, reinforcing the need for prompt-engineering competencies in marketing. This discrepancy highlights a critical shortfall in skilled talent, particularly in marketing roles that require both technological fluency and strategic insight (Chui et al., 2023; Harkness et al., 2023). Advanced prompting techniques open pathways to hyper-personalization, creative innovation, and strategic foresight, reinforcing the emerging concept of AI superagency, where human ingenuity and machine intelligence coalesce to drive performance (Mayer et al., 2025).

Moreover, D'Amico et al. (2025) argue that AI can act as a thought partner or research collaborator in strategic planning, provided that marketers are trained to frame questions effectively and guide model outputs with precision. This insight further underscores the importance of prompt engineering as a cornerstone of strategic competence in AI-powered marketing. By embedding prompt engineering into marketing education and aligning it with pedagogical foundations, such as constructivism, experiential learning, social constructivism, and connectivism, academic programs can better prepare students to unlock AI's full potential while

promoting responsible, ethical, and innovative practice (Jobin et al., 2019).

Recommendations for Effective Integration

Educational institutions should conduct a strategic audit of existing marketing programs to identify entry points for embedding prompt engineering concepts. Utilizing the conceptual framework developed in this study, institutions can either integrate prompt engineering into existing modules (e.g., digital marketing, analytics, content strategy) or develop dedicated elective courses. Emphasis should be placed on real-world applications and alignment with industry trends to ensure that students acquire market-relevant, applied skills. A structured and deliberate curriculum design will ensure students are well-equipped to tackle contemporary marketing challenges in AI-enhanced environments.

Curriculum Development and Design

Educational institutions should conduct a strategic audit of existing marketing programs to identify entry points for embedding prompt engineering concepts. Utilizing the conceptual framework developed in this study, institutions can either integrate prompt engineering into existing modules (e.g., digital marketing, analytics, content strategy) or develop dedicated elective courses. Emphasis should be placed on real-world applications and alignment with industry trends to ensure that students acquire market-relevant, applied skills. A structured and deliberate curriculum design will ensure students are well-equipped to tackle contemporary marketing challenges in AI-enhanced environments.

Faculty Development and Support

Investing in faculty training and support is essential for building institutional capacity. Universities should offer professional development opportunities, such as workshops, certifications, and learning communities, to equip educators with the knowledge and confidence to teach prompt engineering (Huang & Rust, 2021). Faculty engagement in AI-focused research, participation in conferences, and collaborations with technology experts should be actively encouraged. A culture of continuous professional learning will not only raise teaching quality but also promote innovation and responsiveness in program delivery.

Interdisciplinary Collaboration

To reflect the increasingly interconnected nature of marketing and technology, institutions should foster interdisciplinary collaboration between marketing and related departments such as computer science, data science, and information systems (Mustak et al., 2021). This can take the form of joint course offerings, co-teaching models, or collaborative research projects. These initiatives provide students with a more holistic understanding of AI's role in marketing and prepare them to thrive in cross-functional, tech-integrated teams.

Experiential Learning Opportunities

Institutions should prioritize experiential learning by integrating project-based assignments, internships, simulations, and partnerships with industry into the learning experience. As demonstrated in the case study, hands-on engagement with prompt engineering techniques leads to noticeable improvements in student competence and confidence. By working on authentic tasks using real tools, students bridge the gap between theory and practice, gaining skills directly transferable to professional settings.

Ethical and Responsible AI Use

Given the increasing ethical scrutiny surrounding AI applications, marketing curricula should embed critical discussions on ethics, transparency, fairness, and accountability (Jobin et al., 2019). Educators must guide students in identifying potential biases in AI outputs, understanding the societal implications of automated decisions, and adopting responsible data practices. This ethical grounding ensures that graduates not only meet industry standards but also uphold social responsibility and consumer trust in their professional roles (Acar, 2024).

Continuous Curriculum Evaluation

To remain relevant amid rapid technological change, marketing curricula must undergo ongoing review and iterative refinement (Dwivedi et al., 2021). Institutions should establish mechanisms for continuous feedback from students, faculty, and industry stakeholders to inform curriculum updates. This responsive, dynamic approach ensures that programs remain aligned with evolving industry needs, technological innovations, and pedagogical best practices.

Conclusion and Future Research

While this study provides valuable insights into the integration of prompt engineering within marketing education, several limitations must be acknowledged. The illustrative case study, although informative, was conducted with a single cohort at one higher education institution, which may limit the generalizability of the findings. Furthermore, the evaluation focused on immediate outcomes, and long-term retention of prompt engineering skills was not assessed. Future research should consider longitudinal studies to examine the sustained impact of prompt engineering instruction on student competencies, employability, and career trajectories. Additionally, there is a need to explore how the proposed conceptual framework can be scaled and adapted across different educational contexts, including undergraduate programs, institutions with varying resources, and international curricula. Investigating cross-institutional implementations would help validate the framework's applicability and uncover best practices. Further studies could also assess the perspectives of industry stakeholders, examining whether graduates proficient in prompt engineering meet the expectations of employers and contribute to organizational AI readiness. The integration of prompt engineering into marketing education represents a critical step in preparing students for the evolving demands of an AI-driven industry. This study offers a comprehensive and academically grounded conceptual framework that addresses five key components: foundational AI and marketing knowledge, skill development in prompting techniques, curriculum integration, faculty development, and ethical and responsible AI use. The classroom case study illustrates the practical benefits of this approach, demonstrating significant improvements in student engagement and output quality following instruction in advanced prompting strategies. By aligning educational content with technological innovation and ethical awareness, institutions can enhance the relevance, impact, and competitiveness of their marketing programs. Students gain valuable, future-ready skills that increase their employability and capacity for innovation, while the marketing industry benefits from a workforce capable of leveraging AI both effectively and responsibly. The successful integration of prompt engineering requires collaboration among educators, institutions, and industry stakeholders. Together, these actors can foster a learning environment that promotes continuous skill development, ethical reasoning, and applied innovation. This collaborative effort will enable marketing professionals to navigate AI complexities with confidence and integrity, shaping the next era of marketing practice. Although many marketing curricula increasingly acknowledge the importance of AI, the concept of "AI superagency," wherein humans and machines co-create value, remains underrepresented in most educational models. The findings of this study suggest that a systematic and theoretically informed integration of prompt engineering can significantly narrow the AI skills gap. Emphasizing experiential learning, ethical literacy, and interdisciplinary collaboration will better position graduates to harness AI technologies responsibly and strategically.

Future research could explore the longitudinal effects of prompt engineering education on graduate job performance, conduct cross-institutional comparisons, and evaluate evolving best practices as AI technologies advance. Given the rapid pace of AI development, regular curriculum review and industry engagement are essential. Ultimately, bridging the gap between cutting-edge AI capabilities and marketing education ensures that graduates are not only equipped to navigate the current landscape, but also to lead the transformation of marketing in the age of intelligent systems.

Disclosure Statement

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