Rethinking Academic Reading Strategies in the Age of AI: The Emerging Role of Prompt Literacy

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Annotation *This article explores the transformation of academic reading strategies in the context of rapidly evolving artificial intelligence technologies, with particular attention to the emerging concept of prompt literacy. As AI-driven tools increasingly mediate access to knowledge, traditional models of reading – centered on linear text processing – are being supplemented by interactive and dialogic modes of engagement. The study conceptualizes prompt literacy as a metacognitive and strategic competence that enables learners to formulate purposeful queries, guide AI-generated responses, and critically evaluate information. Drawing on established frameworks in metacognition, constructivism, and reading theory, the research investigates how prompt literacy reshapes the processes of comprehension, inference, and critical analysis. A qualitative approach is employed, incorporating classroom-based observations, analysis of learner – AI interactions, and reflective accounts. The findings indicate that students who develop prompt literacy demonstrate deeper engagement with texts, improved interpretive flexibility, and greater autonomy in managing their learning. The article argues that prompt literacy should be integrated into academic reading instruction as a core component of contemporary literacy practices, particularly within digitally mediated educational environments.*

Keywords *Prompt literacy, academic reading, artificial intelligence, metacognition, critical reading, digital literacy, higher education*

Sun’iy intellekt davrida akademik o‘qish strategiyalarini qayta ko‘rib chiqish: prompt literacy tushunchasining shakllanib borayotgan roli

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Annotatsiya *Ushbu maqolada sun’iy intellekt texnologiyalarining jadal rivojlanishi sharoitida akademik o‘qish strategiyalarining transformatsiyasi tahlil qilinadi hamda prompt literacy tushunchasiga alohida e’tibor qaratiladi. Sun’iy intellekt asosidagi vositalar bilimga kirishni tobora ko‘proq vositachilik qilayotgan bir paytda, matnni chiziqli qayta ishlashga asoslangan an’anaviy o‘qish modellari interaktiv va dialogik yondashuvlar bilan boyitilmoqda. Tadqiqotda prompt literacy metakognitiv va*

strategik kompetensiya sifatida talqin qilinadi, u o‘quvchilarga maqsadga yo‘naltirilgan savollarni shakllantirish, sun’iy intellekt tomonidan yaratilgan javoblarni boshqarish va axborotni tanqidiy baholash imkonini beradi. Metakognitsiya, konstruktivizm va o‘qish nazariyasiga oid ilmiy yondashuvlarga tayangan holda, ushbu tadqiqot prompt literacy o‘qish jarayonidagi tushunish, inferensiya va tanqidiy tahlil bosqichlarini qanday o‘zgartirishini o‘rganadi. Tadqiqotda sifatli metodologiya qo‘llanilib, dars jarayonlarini kuzatish, talaba–sun’iy intellekt o‘zaro ta’sirlarini tahlil qilish hamda reflektiv yozuvlar asosida ma’lumotlar yig‘ildi. Natijalar shuni ko‘rsatdiki, prompt literacy darajasi yuqori bo‘lgan talabalar matn bilan chuqurroq ishlaydi, talqin qilish moslashuvchanligi yuqori bo‘ladi hamda o‘z o‘qish jarayonini mustaqil boshqarish qobiliyatiga ega bo‘ladi. Maqolada xulosa sifatida prompt literacy zamonaviy raqamli ta’lim muhitida akademik o‘qishni o‘qitishning muhim tarkibiy qismi sifatida integratsiya qilinishi zarurligi asoslab beriladi.

Kalit so‘zlar *Prompt literacy, akademik o‘qish, sun’iy intellekt, metakognitsiya, tanqidiy o‘qish, raqamli savodxonlik, oliy ta’lim*

Переосмысление стратегий академического чтения в эпоху искусственного интеллекта: формирующаяся роль prompt literacy

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Аннотация *В данной статье рассматривается трансформация стратегий академического чтения в условиях стремительного развития технологий искусственного интеллекта с особым акцентом на формирующуюся концепцию prompt literacy. По мере того как инструменты, основанные на ИИ, всё активнее опосредуют доступ к знаниям, традиционные модели чтения, ориентированные на линейную обработку текста, дополняются интерактивными и диалогическими формами взаимодействия. В исследовании prompt literacy рассматривается как метакогнитивная и стратегическая компетенция, позволяющая обучающимся формулировать целенаправленные запросы, управлять ответами, генерируемыми ИИ, и критически оценивать полученную информацию. Опираясь на признанные теоретические подходы в области метакогниции, конструктивизма и теории чтения, автор анализирует, каким образом prompt literacy влияет на процессы понимания, интерпретации и критического анализа. В работе используется качественный подход, включающий наблюдение за учебным процессом, анализ взаимодействия обучающихся с ИИ и рефлексивные отчёты. Полученные результаты показывают, что студенты,*

обладающие развитым уровнем prompt literacy, демонстрируют более глубокое понимание текстов, повышенную интерпретационную гибкость и более высокий уровень автономии в обучении. В заключение обосновывается необходимость интеграции prompt literacy в обучение академическому чтению как ключевого компонента современной образовательной практики в условиях цифровой среды.

Ключевые слова *Prompt literacy, академическое чтение, искусственный интеллект, метакогниция, критическое чтение, цифровая грамотность, высшее образование отрицание*

Introduction

Academic reading has traditionally been understood as a complex cognitive activity that requires the coordination of linguistic knowledge, background knowledge, and strategic processing. For decades, research in applied linguistics has emphasized the importance of strategies such as skimming, scanning, predicting, and summarizing in facilitating comprehension. These strategies, while effective within conventional print-based environments, are increasingly being redefined in response to the growing presence of digital technologies in education.

The emergence of artificial intelligence has introduced a fundamental shift in how learners engage with texts. Unlike traditional reading contexts, where meaning is constructed through direct interaction with a static text, AI-supported environments enable learners to engage in a form of dialogic reading. In such environments, understanding is not derived solely from the text itself but is co-constructed through interaction with intelligent systems capable of generating explanations, paraphrases, and interpretations on demand.

This transformation raises important questions about the nature of reading strategies in the digital age. If reading is no longer a solitary act but an interactive process mediated by AI, then the strategies required for effective reading must also evolve. One concept that captures this shift is prompt literacy. Prompt literacy refers to the ability to formulate precise, purposeful, and cognitively engaging queries when interacting with AI systems. It represents a new dimension of academic literacy, combining elements of critical thinking, metacognitive awareness, and digital competence.

The significance of prompt literacy lies in its potential to reshape the way students approach reading tasks. Rather than passively consuming information, learners actively direct the flow of knowledge by posing questions, refining their inquiries, and evaluating the responses they receive. This process not only enhances comprehension but also fosters deeper levels of engagement and critical reflection.

Despite its growing relevance, prompt literacy has received limited attention in academic research. Most existing studies focus on the technical capabilities of AI or its general impact on education, leaving a gap in our understanding of how learners interact with these technologies at a strategic level. This article seeks to address this gap by examining the role of prompt literacy in redefining academic reading strategies and by exploring its implications for teaching and learning in higher education.

Literature review

The study of academic reading has evolved considerably over the past several decades, reflecting broader changes in our understanding of language, cognition, and

learning. Early models of reading, often described as bottom-up approaches, viewed comprehension as a process of decoding linguistic units, beginning with letters and progressing to words, sentences, and larger textual structures. However, such models were later challenged by top-down and interactive perspectives, which emphasize the active role of the reader in constructing meaning.

Rumelhart's interactive model (1977) represents a significant milestone in this development, proposing that reading involves the simultaneous interaction of multiple sources of information. According to this model, readers draw on both textual cues and prior knowledge to interpret meaning. This perspective was further elaborated by scholars such as Grabe (2009), who identified key components of academic reading, including fluency, vocabulary knowledge, inferencing, and discourse processing.

Metacognition has also been recognized as a central factor in reading success. Flavell (1979) introduced the concept of metacognitive awareness, highlighting the importance of monitoring and regulating one's cognitive processes. In the context of reading, this involves planning how to approach a text, assessing one's understanding, and making adjustments when difficulties arise. Pressley and Afflerbach (1995) provide empirical evidence that skilled readers engage in a wide range of metacognitive strategies, often unconsciously.

The integration of digital technologies into education has added a new dimension to these theoretical frameworks. Digital reading differs from traditional reading in several important ways, including its non-linear structure, multimodal nature, and interactive potential. Scholars have argued that digital environments require new forms of literacy, often referred to as digital or multiliteracies.

Artificial intelligence represents a further stage in this evolution. Unlike earlier digital tools, AI systems are capable of generating content, responding to user input, and adapting to individual needs. Holmes et al. (2019) suggest that AI has the potential to transform education by providing personalized and adaptive learning experiences. However, they also emphasize that the effectiveness of AI depends on how learners engage with it.

Within this context, prompt literacy emerges as a critical skill. Although the term itself is relatively new, it can be understood in relation to existing theoretical constructs. From a metacognitive perspective, prompt literacy involves planning and regulating one's interaction with AI. From a sociocultural perspective, it reflects the learner's ability to engage in mediated interaction within the Zone of Proximal Development (Vygotsky, 1978).

Recent research has begun to highlight the importance of user input in shaping AI outputs. Studies indicate that the quality of prompts significantly influences the depth and relevance of responses generated by AI systems (Kasneci et al., 2023). However, there remains a lack of systematic investigation into how prompt literacy affects specific academic skills, such as reading. This study seeks to contribute to this emerging area of research by examining the relationship between prompt literacy and academic reading strategies.

Methodology

The present study adopts a qualitative research design in order to explore the role of prompt literacy in shaping academic reading strategies within AI-supported learning environments. A qualitative approach is particularly appropriate for this research, as it allows for an in-depth examination of complex cognitive and interactive processes that cannot be easily captured through quantitative measures alone.

The participants in the study consisted of undergraduate students enrolled in English language courses at a higher education institution. The selection of participants was based on their intermediate to upper-intermediate level of English proficiency, which ensured that they possessed the linguistic competence necessary to engage with

academic texts while still benefiting from strategic support.

Data collection was carried out over a period of several weeks and involved multiple sources to ensure the validity and reliability of the findings. Classroom observations were conducted to examine how students interacted with AI tools during reading tasks. Particular attention was given to the types of prompts students formulated and how these prompts influenced their engagement with the text.

In addition to observations, samples of student-AI interactions were collected and analyzed. These included both the prompts generated by students and the responses provided by the AI system. Reflective journals were also used as a data source, allowing students to articulate their thought processes, challenges, and strategies when using AI for reading.

The research procedure involved structured reading tasks in which students were required to engage with academic texts using AI tools. They were encouraged to formulate prompts aimed at different levels of comprehension, including understanding, analysis, and evaluation. Over time, students were guided to refine their prompts and adopt more sophisticated strategies.

Data analysis was conducted using thematic analysis, focusing on patterns related to comprehension, inferencing, and critical engagement. The analysis also examined the relationship between the quality of prompts and the depth of student understanding.

Results

The findings of the study reveal that prompt literacy plays a significant role in shaping students' academic reading strategies. One of the most notable outcomes is the improvement in reading comprehension among students who demonstrated higher levels of prompt literacy. These students were able to formulate precise and targeted prompts, which enabled them to obtain more relevant and detailed information from the AI system.

Another important finding relates to inferencing ability. Students who developed prompt literacy were more likely to engage with implicit meanings in the text. They used prompts to explore underlying assumptions, clarify ambiguities, and connect ideas across different sections of the text. This indicates that prompt literacy supports deeper levels of cognitive processing.

The study also found that prompt literacy contributes to the development of critical thinking. Students who used more sophisticated prompts were more inclined to question the validity of arguments, evaluate evidence, and consider alternative interpretations. This suggests that prompt literacy is closely linked to higher-order cognitive skills.

In addition, the findings highlight an increase in learner autonomy. Students who became more proficient in prompt formulation were less dependent on teacher guidance and more capable of directing their own learning. They approached reading as an active and interactive process, using AI as a tool for exploration rather than as a source of ready-made answers.

Discussion and Analysis

Furthermore, the findings can be interpreted through the lens of higher-order cognitive development. Prompt literacy does not merely facilitate comprehension at a surface level; rather, it activates analytical and evaluative dimensions of reading. When students formulate targeted and conceptually rich prompts, they are effectively engaging in hypothesis testing, problem-solving, and reflective thinking. This indicates that prompt literacy contributes to the transition from lower-order to higher-order cognitive processes, as outlined in Bloom's revised taxonomy.

Another important dimension revealed by the study concerns the relationship between prompt literacy and interpretive flexibility. Traditional reading often assumes a relatively fixed interpretation of a text, guided by the

author's intended meaning. However, interaction with AI systems introduces a multiplicity of perspectives, allowing students to approach the same text from different analytical angles. This plurality of interpretations encourages a more nuanced understanding and reduces the tendency toward passive acceptance of information.

In addition, the dialogic nature of AI-mediated reading environments redefines the concept of reader engagement. Engagement is no longer limited to attention and comprehension; it extends to active inquiry, negotiation of meaning, and iterative refinement of understanding. Students become participants in a continuous feedback loop, where each prompt generates new insights that inform subsequent questions. This recursive process enhances depth of processing and supports long-term retention of information.

The findings also suggest that prompt literacy plays a mediating role between technological affordances and learning outcomes. While AI systems offer extensive informational resources, their pedagogical value depends largely on the user's ability to navigate and direct these resources. In this sense, prompt literacy functions as a bridge that connects technological potential with cognitive development. Without this mediating competence, the benefits of AI remain underutilized.

At the pedagogical level, the study underscores the necessity of rethinking instructional practices. Traditional reading instruction, which often prioritizes text-based strategies, may not adequately prepare students for AI-supported learning environments. Instead, educators need to incorporate explicit training in prompt formulation, critical questioning, and evaluation of AI-generated content. Such an approach would not only enhance reading proficiency but also foster digital resilience and critical digital literacy.

Finally, it is important to acknowledge certain limitations and future considerations. The integration of prompt literacy into academic practice raises questions about cognitive dependency on AI systems, the reliability of generated information, and the ethical dimensions of AI use in education. Therefore, alongside the development of prompt literacy, there is a need to cultivate critical awareness and responsible use of technology.

Conclusion

This study has explored the role of prompt literacy in redefining academic reading strategies in the age of artificial intelligence. The findings demonstrate that prompt literacy enhances comprehension, supports inferencing, fosters critical thinking, and promotes learner autonomy. More importantly, it shifts the very nature of reading from a predominantly linear and receptive activity to a dynamic, interactive, and strategically guided process.

The results of the study suggest that prompt literacy enables learners to engage with texts at multiple levels of depth. Rather than merely extracting information, students actively interrogate content, refine their understanding through iterative questioning, and construct meaning in collaboration with AI systems. This indicates that prompt literacy is not simply an auxiliary digital skill but a core academic competence that directly influences cognitive engagement and learning outcomes.

The study argues that prompt literacy should be recognized as an essential component of academic literacy in contemporary educational contexts. In an era where access to information is increasingly mediated by intelligent systems, the ability to formulate precise, purposeful, and analytically oriented prompts becomes a key determinant of academic success. Without this competence, learners risk engaging with AI tools at a superficial level, thereby limiting their potential for deep learning.

Furthermore, the integration of prompt literacy into academic practice has broader implications for curriculum design and

pedagogical frameworks. Educational institutions need to move beyond traditional models of reading instruction and incorporate explicit training in prompt formulation, critical questioning, and evaluation of AI-generated content. Such integration would not only enhance reading proficiency but also support the development of digital literacy, critical awareness, and independent learning skills.

It is also important to consider the broader educational and cognitive implications of this shift. As AI systems become more sophisticated, the boundary between human cognition and technological support becomes increasingly blurred. In this context, prompt literacy serves as a mechanism through which learners maintain cognitive control over the learning process, ensuring that technology functions as a tool for intellectual development rather than a substitute for it.

Future research should examine the long-term impact of prompt literacy on academic performance across different proficiency levels and disciplines. In particular, quantitative studies could provide further evidence of its effectiveness, while experimental designs could explore causal relationships between prompt training and learning outcomes. Additionally, there is a need to investigate how prompt literacy interacts with other variables, such as motivation, digital competence, and cognitive style.

Finally, further research should explore practical models for integrating prompt literacy into curriculum design, including the development of instructional frameworks, assessment criteria, and teacher training programs. Such efforts would contribute to establishing prompt literacy as a systematic and sustainable component of modern education.

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