

Literacy Specialists Use Notebook LM to Enhance Student Comprehension by Presenting Information in Diverse Formats

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ABSTRACT: The research delves into the innovative pedagogical strategies employed in a midwestern university's graduate reading practicum course, specifically focusing on how it effectively prepares literacy specialists to incorporate AI-generated literacy instruction into their teaching practices. Central to this approach is the use of Google Notebook LM, a dynamic tool that not only enhances the teaching and learning experience but also prioritizes the cultivation of a genuine passion for complex texts among P-12 students. This innovative approach has been shown to significantly boost student engagement, catering to individual learning styles and needs while aligning with the foundational principles of research-based literacy instruction (Kong, Cheung, & Zhang, 2023).

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The integration of AI-generated literacy instruction by educators in the field of literacy is transforming traditional teaching methodologies (Lammert, et al. 2024). This innovative approach enhances instructional strategies, allowing teachers to provide tailored learning experiences that cater to the diverse needs of their students (Volante, DeLuca, & Klinger, 2023). By leveraging advanced technology, literacy teachers can create dynamic and engaging literacy programs that foster improved reading and writing skills, ultimately leading to better outcomes for all learners (Murphy, 2019).

Recent research conducted by Karagoz (2025) highlights that AI proves to be particularly adept at addressing surface-level aspects of writing, including elements such as grammar, vocabulary, and overall structure. Many students and educators appreciate AI's ability to provide quick feedback and comprehensive evaluations, which can significantly streamline the writing process. However, both groups underscore the essential role of human feedback in fostering a deeper understanding of the subject matter. The researcher (Karagoz, 2025) also calls for further investigation into the long-term effects of AI use in education, the implementation of scaffolding strategies to support student learning, and the ethical considerations that must accompany the integration of AI technologies in academic settings (Kong, et al. 2023).

Additional investigation is essential to validate the proposition that humans can enhance and build upon the capabilities of artificial intelligence in meaningful and genuine ways. This enhancement should showcase not only critical thinking skills but also creative abilities in literacy and higher-order cognitive processes that go beyond mere data analysis and rote memorization. According to Volante, DeLuca, and Klinger (2023), such research should focus on exploring innovative methods through which human intellect interacts with AI systems, leading to outcomes that reflect deep understanding, original thought, and sophisticated problem-solving.

Notebook LM is gaining recognition as an innovative and effective resource in the realm of literacy instruction. This platform provides a range of features designed to enhance the processes of research, writing, and overall educational experiences. By centralizing various documents in one accessible location, it simplifies the organization of information, making it easier for both teachers and students to engage with their materials. Additionally, Notebook LM facilitates in-depth analysis by allowing users to annotate texts, compare different sources, and extract relevant information (Johnson, 2025). Its summarization tools enable learners to distill complex information into concise and comprehensible formats, which is particularly beneficial for comprehending and retaining essential concepts. Despite its relatively recent introduction to the educational landscape, there is a noticeable lack of extensive research examining the practical applications of Notebook LM (Martin, 2023). This gap presents an opportunity for educators to explore how Notebook LM can transform traditional approaches to literacy instruction. As more educators experiment with this tool, it holds the potential to significantly enrich the ways in which students interact with learning materials, ultimately fostering deeper engagement and understanding in literacy learning.

Due to the limited research examining the impact of Notebook LM on literacy instruction, this study aimed to investigate how literacy specialists enrolled in a reading practicum course addressed their students' reading challenges by incorporating

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generative artificial intelligence, specifically Notebook LM. The primary objective of implementing AI-generated literacy instruction was to tackle the specific reading difficulties faced by their students. By integrating advanced technology into the educational framework, literacy specialists sought to create engaging and interactive reading experiences that effectively addressed knowledge gaps and boosted overall literacy skills among all learners.

THE RESEARCH

Research has indicated that artificial intelligence (AI) applications can effectively tackle three fundamental challenges commonly faced in educational settings: (1) delivering tailored instruction and feedback to accommodate diverse learning abilities within mixed-ability classrooms, (2) offering students prompt and constructive feedback on their writing assignments, and (3) identifying learners who may be at risk of falling behind and need additional support to achieve their educational goals and graduate successfully (Murphy, 2019).

Notebook LM is a powerful tool exclusively designed for educators aiming to develop tailored materials across various learning levels, enabling them to adjust text complexity and create customized vocabulary lists that cater to individual student needs. This feature is particularly advantageous in diverse classroom settings where students might have varying levels of understanding (Johnson, 2025). Teachers can harness Notebook LM to generate insightful pre-learning questions and thought-provoking discussion prompts that encourage reluctant readers to engage with the material, both before and during lessons. This encourages active participation and critical thinking, helping students to express their thoughts and ideas more freely. Additionally, the platform's Audio Overview feature allows teachers to produce concise audio summaries that function similarly to mini-podcasts. These audio resources are especially beneficial for at-risk students, as they help clarify and reinforce essential concepts in a digestible format. Furthermore, Notebook LM provides opportunities to create interactive content, such as dynamic dialogues or role-play scenarios. These engaging activities offer struggling readers a more immersive experience, allowing them to connect with the material on a deeper level and improve their reading skills in a fun and approachable way. This multimodal approach fosters a richer learning environment where all students can thrive (Martin, 2023).

Since the advent of ChatGPT in 2022, teachers and school administrators have encountered the complex challenge of harnessing the potential of generative artificial intelligence while simultaneously managing its implications and potential drawbacks in the school environment (Lammert, et al. 2024). A proactive approach recommended by experts involves engaging educational stakeholders—such as teachers, parents, and policymakers—in the early stages of any shift prompted by technological advancements. According to Linden, Yuan & Mendoza (2025), it is crucial to exercise caution in the use of these AI tools; therefore, it falls upon instructors to guide their students in understanding and practicing the responsible utilization of generative AI technologies. This underscores the urgent need to explore and gain insights into the perspectives of teaching staff regarding the integration of generative AI into educational practices. Such understanding is vital for maximizing the pedagogical benefits of these innovative tools while effectively addressing and mitigating any challenges that may arise from their implementation in the classroom (Karagoz, 2025).

While there are certainly significant exceptions, the majority of artificial intelligence applications in the field of education have been developed—with varying degrees of intention—with the primary goal of substituting certain responsibilities traditionally held by teachers (Linden, Yuan, & Mendoza, 2025). This approach often overlooks the potential for AI to serve as a powerful tool that enhances teachers' ability to deliver more effective instruction and engage students in meaningful ways (Miao et al., 2021). Instead of simply automating tasks, AI could be leveraged to support teachers in personalizing learning experiences, providing real-time feedback, and fostering collaborative environments that allow for deeper student understanding and participation. Educators can implement this comprehensive framework to assist students in navigating the intricate process of analyzing and enhancing writing produced by artificial intelligence. This approach mirrors the evaluative skills used in formative assessments of student-authored texts, allowing for a more holistic understanding of writing as a craft. As noted by Beck and Levine (2023), engaging in structured exercises like these provides students with the opportunity to delve into stages of the writing process that are often overlooked in traditional classroom settings, where the emphasis typically lies on producing initial drafts only (Wang, 2024).

By actively participating in this analytical process, students can develop the skills to critically assess both their own writing and that of their peers (Beck & Levine, 2023). They can utilize tailored rubrics and insightful peer feedback to facilitate improvements at every stage of the writing process. Teachers can enhance this experience by introducing self- and peer-review activities, where students calculate their own perplexity and burstiness scores for AI-generated compositions. The aim is to subsequently revise these pieces with the objective of elevating those scores, thereby reflecting a deeper engagement with the text (Wang, 2024).

Incorporating co-constructed rubrics and carefully selected exemplars (Bacchus et al., 2019) can further empower students. This collaborative approach allows them to learn how to effectively connect ideas within and between paragraphs, ultimately resulting in writing that feels more dynamic and engaging, while significantly reducing the mechanical quality often attributed to AI-generated texts. Such an approach not only fosters creativity and individuality in student writing but also cultivates a more

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sophisticated understanding of narrative structure and coherence. Notebook LM provides a powerful tool for educators to develop customized learning materials tailored to various student abilities. It allows teachers to modify text complexity, ensuring that all students, regardless of their proficiency levels, can engage with the content meaningfully. Additionally, the platform can generate targeted vocabulary lists that cater to the specific needs of students, making it an invaluable resource for diverse classrooms where students may have varying backgrounds and learning requirements (Johnson, 2025).

However, integrating such advanced AI tools into the fundamental systems of education—specifically instruction, curriculum design, and assessment methods—poses significant challenges. Educators will face the demanding task of revising their teaching practices and professional methodologies to effectively incorporate AI technologies. This transition is not merely about using new tools but also involves a deep and comprehensive shift in how education is approached, necessitating a thoughtful investment of time and effort by teachers to ensure successful implementation (Williamson, Molnar, & Boninger, 2025).

Despite the excitement surrounding the potential of artificial intelligence in P–12 education, there remains a significant lack of empirical evidence to demonstrate the effectiveness of these innovative tools for schools, districts, and educators. This paper aims to fill that gap by investigating how literacy specialists participating in a reading methods course utilized generative artificial intelligence, specifically the Notebook LM, to overcome the reading challenges faced by their students. By analyzing the integration of advanced technology in literacy instruction, this paper aims to provide valuable insights into the evolving role of AI in educational settings and its potential to enhance teaching practices.

An Online Practicum Course for Literacy Specialists (with Supervision)

The supervised practicum in reading is a crucial and mandatory course for literacy specialists who are currently active classroom teachers within public school environments. This course places significant emphasis on the effective management and supervision of a comprehensive reading program situated in a public educational setting. Additionally, it explores collaborative approaches designed to foster partnerships with fellow educators, aiming to enhance the quality of teaching and literacy instruction throughout the school (Sassone & Lambert, 2020).

The primary objective of this practicum is to equip literacy specialists with a deep understanding of their pivotal roles in supporting literacy education. Participants engage in hands-on experiences that demonstrate practical applications of reading pedagogy. The course curriculum is thoughtfully crafted to introduce candidates to a diverse range of evidence-based strategies and techniques that have been proven effective through both research and practical application in the field (Vokatis, 2018). Central to the philosophy of this course is the opportunity for candidates to actively implement a variety of research-backed literacy strategies, which are essential for cultivating and enhancing the literacy skills of students in grades P-12. By immersing themselves in these methodologies, candidates not only refine their instructional practices but also contribute meaningfully to the literacy development of their students, ultimately fostering a more literate and engaged school community (Vokatis, 2018).

Participants of this course engage in a variety of hands-on activities designed to highlight the importance of using technology to differentiate instruction and scaffold learning for diverse student populations (Hutchison & Woodward, 2018). The course emphasizes the role of technology in fostering creativity and innovation, enabling their students to express their ideas and thoughts in new and engaging ways (Kong, et al. 2023). Additionally, attention is given to the enhancement of communication and collaboration among students, utilizing digital platforms that facilitate peer interaction and teamwork. Among the specific objectives of the course, participants learn to identify and implement evidence-based practices for teaching reading and writing using technological resources.

The course materials are made accessible to participants through an asynchronous format, systematically organized within the CANVAS platform's module tools. To enhance the learning experience, web conferencing lectures are meticulously designed to replicate the dynamics of a traditional face-to-face classroom environment (Chaw & Tang, 2018). Utilizing the interactive features of Zoom, the sessions transformed into lively virtual classrooms, fostering real-time engagement among participants. The researcher leveraged two-way audio for clear communication, utilized webcams to foster a sense of connection among participants, and incorporated breakout rooms to encourage collaboration in smaller groups (Mansfield, 2019). Additionally, the chat window allowed for instant messaging, enabling participants to ask questions and interact without interrupting the flow of the lecture. Application sharing further enriched the experience, allowing the researcher to present materials and tools dynamically, thereby enhancing the overall learning process (Mansfield, 2019).

Collaboration among professionals and the use of Notebook LM

The practicum course is designed to empower candidates in enhancing their school's reading programs through the integration of advanced AI-powered tools (Kong, et al. 2023). To effectively address and dismantle reading barriers, the candidates employ generative AI technologies, such as Notebook LM, which revolutionizes conventional reading assignments into interactive and personalized learning experiences (Johnson, 2025). The strategies are specifically crafted to support students facing challenges in reading by promoting meaningful discussions and boosting both comprehension and fluency. Rather than presenting information in a rigid and unchanging format, Notebook LM enables literacy specialists to engage with their students using dynamic, AI-

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generated materials that are both captivating and relevant. For example, candidates are encouraged to utilize Notebook LM to create succinct summaries that distill lengthy texts into essential points, reframing complex ideas into more accessible language that promotes understanding (Martin, 2023). Additionally, they generate audio representations of texts to support auditory learners, as well as develop interactive study aids such as quizzes and visual maps to enhance scaffolding and facilitate deeper comprehension. By harnessing these innovative tools, the candidates foster a more inclusive and effective reading environment for all students.

The Notebook LM tool effectively streamlines the processing of educational materials, transforming them into interactive resources that enhance student engagement. The candidates utilize this tool to encourage students to engage in meaningful discussions about various topics (Martin, 2023). Following these discussions, the material are converted into a video, allowing students to absorb the content through visual comprehension. This multifaceted approach not only aids students in grasping the deeper meanings of the subjects but also prompts them to articulate their thoughts through reflective writing exercises, thereby solidifying their understanding (Johnson, 2025).

To enhance the experience of the reading assignment, the candidates introduce the engaging practice of reader's theater following discussions on Notebook LM. This interactive and collaborative activity allows students to immerse themselves in the text, transforming the written word into a lively performance. By taking on different roles, students not only improve their reading fluency and comprehension but also foster teamwork and creativity as they interpret the dialogue and emotions of the characters. The candidates play a crucial role in articulating the objectives of the assignment, ensuring that students grasp the significance of engaging deeply with complex material. They emphasize the advantages of embracing challenging concepts and the learning that stems from overcoming difficulties, thus cultivating a resilient mindset.

The candidates developed comprehensive glossaries aimed at elucidating key concepts and specialized vocabulary tailored to align with each student's unique learning style. To facilitate this process, they utilized the Sources Panel, conveniently located on the left-hand side of their interface (Kong, et al. 2023). This feature empowered them to efficiently upload and organize their source documents, providing a transparent, organized view of all the materials employed in their instructional strategies. As a result, students gained the ability to engage actively with the content, allowing them to pose questions and derive meaningful insights from the learning materials. The candidates were able to dynamically add or remove sources as needed, ensuring that the Notebook LM system consistently contains the most pertinent and up-to-date information required for their students' assignments and tasks. This flexibility in approach ensured that the content remained pertinent to each student's individual needs and interests, and significantly enriched the overall learning experience (Kong, et al. 2023).

METHODS

In this study, the researcher skillfully combined both quantitative and qualitative analysis to gain a deeper understanding of the complex relationships among the various variables at play (Crossman, 2019). Qualitative research designs were employed to facilitate a comprehensive examination of changes over time. This approach allowed for the observation of the complexities involved in language acquisition among all learners, as well as the evolving dynamics of literacy coaching and professional development for candidates (Crossman, 2019). The quantitative component involved careful observation and measurement of diverse data sets, which aimed to uncover significant insights about the literacy methods course. The primary objective of this quantitative research was to deliver precise and actionable answers regarding the frequency and intensity of various educational phenomena encountered throughout the course (Creswell, 2013).

Throughout the fall academic term, data collection was carried out in a systematic and structured manner. This approach facilitated an in-depth exploration of various instructional methods employed during the course. Additionally, it provided insights into how literacy specialists interacted with the researcher, showcasing the collaborative dynamics involved. The meticulous gathering of information allowed for a comprehensive analysis of the overall learning outcomes linked to the course, highlighting the effectiveness of different teaching strategies and the impact on student learning trajectories.

By incorporating open-ended questions and inviting comments from participants, the researcher was able to probe into their lived experiences and unique perspectives, providing a rich narrative that quantitative data alone could not capture. During the analysis phase, the researcher exercised meticulous care to reduce personal biases that might influence interpretation. This commitment to objectivity was paramount, ensuring that the findings truly reflected the participants' insights and experiences rather than the researcher's preconceived notions. This thoughtful and rigorous approach not only enhanced the reliability of the results but also increased the overall credibility of the research process. Such diligence in maintaining objectivity ultimately paves the way for drawing significant conclusions and offering well-founded recommendations that can have a meaningful impact in the relevant field.

This research study focused on a group of 15 literacy specialists who participated in a reading methods course during the fall semester. The candidates, aged between 25 and 50, brought a range of experiences to the program. Among the group, 12 specialists had less than a decade of teaching experience, while the remaining 3 had each spent more than ten years in the classroom. The settings in which they worked were heavily influenced by socioeconomic factors, as many of their young students faced

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significant poverty-related challenges that adversely impacted their academic performance and limited their access to quality educational resources and opportunities.

In a comprehensive evaluation of course feedback, the researcher aimed to assess how the incorporation of AI-generated literacy instruction affected the performance of literacy specialists. Participants were encouraged to share their insights on multiple elements of the course, particularly focusing on the ways in which the integration of Generative AI tools could enhance student achievement. This analysis included various dimensions such as engagement levels, instructional strategies, and student outcomes, providing a thorough understanding of the potential benefits of these innovative technologies in literacy education (Karagoz, 2025).

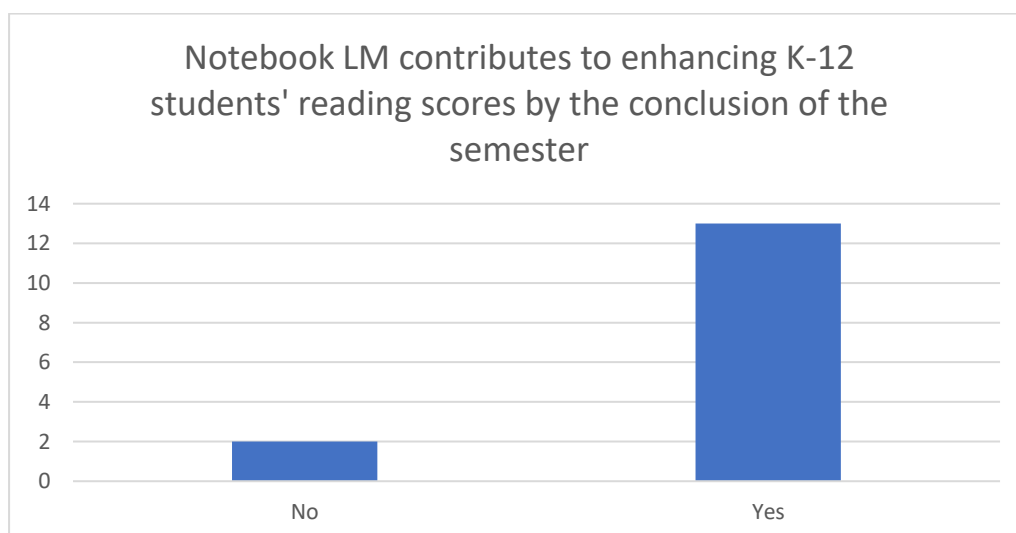
Literacy specialists provided their evaluations anonymously, ensuring that their responses remained confidential and did not impact their grades. In addition to these evaluations, the study included participants' exit reflections regarding their integration of generative AI tools, such as Notebook LM, which serve as valuable supplements to conventional teaching methods. The dynamic group discussions conducted on the CANVAS platform aimed to assess the impact of the class while identifying participants' progress in integrating Notebook LM and addressing their students' ongoing needs. Furthermore, a thorough analysis of the depth of the literacy specialists' academic and professional expertise was conducted through their contributions to the discussion board, highlighting their proficiency in the integration of AI tools and the overall effectiveness of the class on their students' literacy development.

RESULTS AND DISCUSSIONS

The research highlights how a midwestern university's reading practicum course prepares literacy specialists to integrate AI-generated literacy instruction (Hutchison & Woodward, 2018). By utilizing Google Notebook LM, the course highlights the importance of helping P-12 students develop a love for complex texts while equipping diverse learners with strategies to tackle challenges, build resilience, and enhance critical thinking skills. Instead of presenting information in a rigid, one-size-fits-all format, this tool empowered both literacy specialists and students to interact with the material in varied and impactful ways ((Kong, et al. 2023). The integration of Notebook LM facilitated a remarkable shift in traditional reading assignments, transforming them into dynamic, personalized learning experiences grounded in evidence-based instructional principles (Johnson, 2025).

Additionally, the tool helped rephrase challenging concepts using simpler, more relatable language, which made difficult subjects more approachable for all learners (Johnson, 2025). It also offers audio representations of texts, catering to auditory learners and providing varied modes of engagement (Ditch That Textbook, 2025). Moreover, the literacy specialists developed interactive study aids, such as flashcards or quizzes, which supported their students' learning and reinforced their understanding of the materials. Through these diverse applications, Notebook LM not only made reading assignments more accessible but also fostered a more engaging and meaningful learning environment, ultimately improving literacy outcomes (Johnson, 2025).

Chart 1: NotebookLM has created a more engaging learning environment, positively impacting K-12 students' literacy outcomes



Assessment of literacy specialists' performance through discussions

Literacy specialists have found an innovative approach using Notebook LM that enhances student engagement and learning. By incorporating a range of resources—such as URLs, articles, and YouTube videos—they initiate in-depth discussions with their students ((Kong, et al. 2023). This method allows them to craft thought-provoking questions that encourage critical thinking. The Notebook LM not only assists in posing these questions but also provides clear answers, further enriching the learning experience. Literacy specialists who were coaching upper-grade educators expressed strong support for Notebook LM, emphasizing its potential

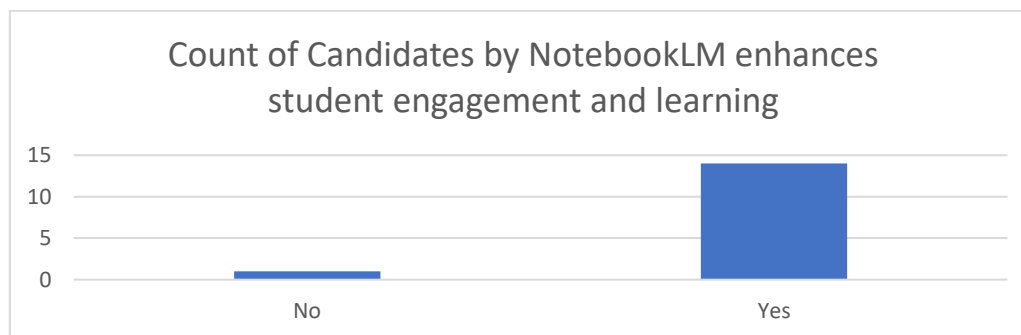
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as an invaluable tool for research projects (Martin, 2023). It empowered students to synthesize information from diverse sources and fostered insightful discussions through effective questioning. This transformative approach significantly elevated students' research skills and overall academic success ((Kong, et al. 2023).

A literacy specialist offered valuable insights on the assessment crafted to measure her students' understanding:

With NotebookLM, I have the ability to swiftly generate various educational materials, including detailed reading comprehension questions, comprehensive study guides, and quizzes. I created engaging flashcards and comprehensive glossaries to reinforce spelling and key concepts, empowering students with diverse and accessible methods to connect with the material. This approach not only enhanced their learning experience but also gave me valuable insights into each student's comprehension level.

Chart 2: The utilization of Notebook LM significantly improves student engagement and facilitates enhanced learning outcomes.



A significant majority of literacy specialists, specifically fourteen out of fifteen candidates identified NotebookLM as an effective tool for enhancing student engagement. By utilizing their report cards, it empowered them to seamlessly share valuable data analysis combined with effective teaching strategies with fellow teachers across schools (Martin, 2023). This not only facilitated resource sharing for co-planning but also significantly enhanced their efforts in program alignment and curriculum mapping, making the process more efficient and effective.

Exit Reflections

Out of a group of fifteen literacy specialists, nine shared that they exclusively utilize Notebook LM during times when teachers were present in the classroom. They believed this approach fostered a more supportive environment for students, allowing them to engage in deeper reflections on the topics at hand. For instance, after listening to a podcast presented through Notebook LM, students were encouraged to articulate their thoughts and perspectives by writing personal reflections on their learning experiences (Martin, 2023). This method not only enhanced comprehension but also empowered students to make meaningful connections to the material discussed ((Kong, et al. 2023).

Assessment of Course Content by Participants:

The majority of candidates expressed a strong belief that NotebookLM serves as an invaluable resource for classroom literacy teachers, significantly aiding in the development of deeper reading, writing, and critical thinking skills among students. They highlighted how the platform effectively assists both their students and fellow educators by enhancing the overall educational experience. Many candidates noted that their students were able to organize, analyze, and engage with a variety of learning materials more effectively. A noteworthy number of respondents reported that they could seamlessly upload a wide range of texts onto the platform, including articles, literary stories, and various class resources. Once uploaded, NotebookLM demonstrated its robust capabilities by generating detailed summaries that distilled essential points of the texts (Martin, 2023). This feature not only provided clarity but also formulated thought-provoking discussion questions designed to provoke thoughtful dialogue among students. Additionally, the platform's ability to highlight connections between different themes and ideas in the texts facilitated a richer understanding of the material.

Out of fifteen candidates, 12 indicated that the collective features of NotebookLM significantly support and enhance comprehension, ensuring that students grasped the material more thoroughly. Each candidate acknowledged its effectiveness in differentiating instruction, which is crucial for addressing the diverse learning needs within the classroom. For students who struggle with complex texts, the tool offered targeted support that made challenging concepts and vocabulary more accessible (Martin, 2023). Conversely, for advanced learners, the platform provided opportunities to delve deeper into subjects, encouraging analytical exploration and critical engagement with the materials at hand. Furthermore, candidates described how NotebookLM streamlined lesson planning and text analysis for educators, allowing them to create more tailored and impactful literacy experiences (Martin, 2023). This efficiency enabled teachers to focus on delivering quality instruction that meets the varied needs of their students.

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Ultimately, all candidates agreed on one crucial aspect: by promoting active learning and heightened student engagement, NotebookLM empowers educators to transform their classrooms into dynamic environments (Martin, 2023). In these settings, students are not merely passive recipients of information; rather, they become active participants in their own learning journeys. The platform fosters a culture of inquiry, exploration, and collaboration, helping to cultivate a more immersive and enriching educational experience for all (Lammert, C. et al. 2024).

CONCLUSIONS AND LIMITATIONS

The findings of this research indicated that through the innovative use of Google Notebook LM, the candidates effectively guided P-12 students in cultivating a passion for engaging with complex texts. This approach not only encouraged students to appreciate the richness of literature but also provided diverse learners with a toolbox of effective strategies to navigate various challenges (Volante, DeLuca, & Klinger, 2023). By promoting resilience and enhancing critical thinking skills, these specialists fostered an environment where students could overcome difficulties in reading and analysis, ultimately empowering them to become more confident and capable independent thinkers (Hutchison & Woodward, 2018).

Recent research has revealed a variety of innovative applications of artificial intelligence that hold considerable promise for assisting educators in addressing pressing challenges encountered in the classroom setting (Williamson, Molnar, & Boninger, 2025). These applications not only underscore the remarkable advancements in AI technology but also offer inventive approaches to bolster the effectiveness of literacy specialists (Sassone & Lambert, 2020). The Notebook LM, an AI-driven application designed to support all students, with a special emphasis on those facing learning difficulties or challenges related to reading comprehension (Ditch That Textbook, 2025). Notebook LM provides a range of diverse and flexible methods that allowed these students to effectively access, engage with, and process educational material tailored to their individual needs (Martin, 2023). For instance, it includes features such as text-to-podcast capabilities, interactive content formats, and personalized learning pathways that make complex material more meaningful. By implementing such cutting-edge technologies, literacy specialists can significantly enhance their capacity to accommodate the diverse learning styles and requirements of their students. This shift not only promotes a more inclusive and supportive educational environment but also empowers teachers to better facilitate meaningful learning experiences for every learner in their classroom (Murphy, 2019).

The researcher believes that AI applications like Notebook LM will support teachers rather than replace them, particularly in specific content areas. The main use case will be blended instruction, where AI is integrated into teacher-led activities (Murphy, 2019). However, it's important to note that robust evidence supporting these possibilities is still lacking. As the field of AI continues to evolve, it is essential for product developers and publishers in education to proactively tackle key challenges. They must secure access to crucial training data sets, navigate complex data privacy regulations, combat algorithmic bias, and enhance model transparency. These efforts are vital for building user confidence and trust in these innovative educational tools (Miao, Holmes, Huang, & Zhang, 2021).

The researcher emphatically urges educational leaders to engage in ethical discussions regarding the integration of artificial intelligence applications within school settings. Such dialogues are essential for equipping educators with a deep understanding of the intricate nature of AI technology (UNESCO, 2024). By prioritizing these conversations, we can ensure that the implementation of AI in education is thoughtful and responsible, ultimately benefiting both educators and students alike. Additionally, it is essential for them to develop comprehensive legislation and policy that guarantees robust public oversight and control regarding the utilization of AI in educational settings. Furthermore, any initiatives aimed at developing AI tools tailored for schools must adhere to established "responsible AI" frameworks. This approach should be collaborative, involving direct partnerships with schools to ensure that the needs and concerns of educators, students, and parents are adequately addressed throughout the development process (Williamson, Molnar, & Boninger, 2025). Such a strategy will help to ensure that AI technologies are implemented thoughtfully and ethically, prioritizing the best interests of the educational community.

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