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HOW CAN BEHAVIOURAL AND PSYCHOLOGICAL THEORIES EXPLAIN PATTERNS OF ARTIFICIAL INTELLIGENCE (AI) USE AMONG 15-YEAR-OLD STUDENTS, AND HOW ARE THESE PATTERNS ASSOCIATED WITH LEARNING OUTCOMES AND ACADEMIC PERFORMANCE?

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Abstract. Generative artificial intelligence (AI) provides students with rapid access to explanations, summaries, and suggested answers. For 15-year-old learners, this accessibility raises an important educational and behavioural question: under what circumstances does AI support meaningful engagement with challenging learning materials, and when might it reduce opportunities for independent cognitive effort? This paper reviews published research in behavioural science and selected findings from the OECD's *PISA 2025 Results (Volume I)*, with particular emphasis on Uzbekistan. Cognitive-demand avoidance and cognitive offloading are employed as theoretical frameworks for interpreting patterns of AI use, while a clear distinction is maintained between these concepts and the variables directly measured by PISA.

According to the OECD, 48.6% of students in Uzbekistan use AI chatbots at least once a week to support their learning, compared with the OECD average of 45.5%. Furthermore, 80.6% of students in Uzbekistan report learning at school how to evaluate AI-generated information, compared with an OECD average of 62.6% (OECD, 2026).

These findings indicate that AI-assisted learning is already widespread among students. However, the reported figures do not establish how frequently students substitute AI-generated summaries for assigned reading materials or identify the motivations underlying individual decisions to use AI in this way. The paper argues that the educational implications of AI use depend on the nature of the cognitive tasks delegated to AI, the learner's objectives, and the extent to which AI-generated information is critically evaluated and integrated into independent learning.

As the study relies on secondary sources and does not involve the analysis of individual-level student records or the collection of primary empirical data, the proposed explanations should be understood as theoretically informed interpretations rather than established causal relationships. The paper concludes that educational institutions should develop students' ability not only to use AI tools effectively but also to recognise when independent reading, source verification, and critical reasoning remain essential for meaningful learning.

Keywords: artificial intelligence, adolescents, PISA 2025, cognitive effort, cognitive offloading, behavioural science, reading, self-regulated learning, Uzbekistan.

Аннотация. Генеративный искусственный интеллект (ИИ) обеспечивает учащимся быстрый доступ к объяснениям, кратким изложениям и предлагаемым вариантам ответов. Для 15-летних школьников доступность таких инструментов ставит важный вопрос образовательного и поведенческого характера: в каких условиях использование ИИ способствует осмысленному освоению сложного учебного материала, а в каких случаях может сокращать возможности для самостоятельных когнитивных усилий? В статье рассматриваются опубликованные исследования в области поведенческих наук и отдельные результаты исследования ОЭСР *PISA 2025 Results (Volume I)* с особым акцентом на Узбекистан. В качестве теоретических основ интерпретации особенностей использования ИИ применяются концепции избегания когнитивных усилий и когнитивной разгрузки. При этом проводится чёткое разграничение между данными теоретическими понятиями и показателями, непосредственно измеряемыми в рамках PISA.

Согласно данным ОЭСР, 48,6% учащихся в Узбекистане используют чат-боты на основе ИИ для поддержки обучения не реже одного раза в неделю, тогда как средний показатель по странам ОЭСР составляет 45,5%. Кроме того, 80,6% учащихся в Узбекистане сообщают, что в школе их обучают оценивать информацию, созданную с помощью ИИ, по сравнению со средним показателем 62,6% по странам ОЭСР (OECD, 2026).

Полученные данные свидетельствуют о широком распространении использования ИИ в образовательных целях. Вместе с тем представленные показатели не позволяют установить, насколько часто учащиеся заменяют самостоятельное чтение заданных материалов краткими изложениями, подготовленными с помощью ИИ, а также определить мотивы принятия подобных решений отдельными учащимися. В статье обосновывается положение о том, что образовательные последствия использования ИИ зависят от характера передаваемых ему когнитивных задач, учебных целей школьника и степени критической оценки и осмысленного включения полученной информации в процесс самостоятельного обучения.

Поскольку исследование основано на вторичных источниках и не предусматривает анализа индивидуальных данных учащихся или сбора первичных эмпирических данных, предложенные объяснения следует рассматривать как теоретически обоснованные интерпретации, а не как установленные причинно-следственные связи. В заключение подчёркивается необходимость формирования у учащихся не только навыков эффективного использования инструментов ИИ, но и способности определять ситуации, в которых самостоятельное чтение, проверка источников и критическое мышление сохраняют принципиальное значение для полноценного усвоения знаний.

Ключевые слова: искусственный интеллект, подростки, PISA 2025, когнитивные усилия, когнитивная разгрузка, поведенческие науки, чтение, саморегулируемое обучение, Узбекистан.

INTRODUCTION

When students encounter a challenging academic text, they can adopt several strategies to support their understanding. They may reread a difficult paragraph, clarify unfamiliar terminology, seek guidance from a teacher, or use an artificial intelligence (AI) chatbot to explain a particular passage. Alternatively, they may request an AI-generated summary of the entire text and rely on that summary rather than engaging directly with the original material. Although these approaches may enable students to complete the same assignment, they can result in substantially different learning experiences.

This distinction is important because access to information does not necessarily imply a comprehensive understanding of its content. While a summary can communicate the main arguments of a text efficiently, it may omit qualifications, supporting evidence, or competing perspectives that are essential to the author's reasoning. Conversely, an AI-generated explanation may help students overcome conceptual difficulties and return to the original material with a clearer understanding. Accordingly, the educational value of AI cannot be determined solely by whether the technology is used; it also depends on the nature of the task assigned to AI and how students subsequently engage with its output.

The growing adoption of AI in education makes this issue particularly relevant. According to the published PISA 2025 findings, 48.6% of students in Uzbekistan reported using AI chatbots at least once a week to support their learning, compared with an OECD average of 45.5%. Furthermore, 80.6% of students in Uzbekistan reported receiving school-based instruction on evaluating AI-generated information, compared with 62.6% across OECD countries (OECD, 2026). These indicators provide insights into the prevalence of AI-assisted learning and students' exposure to AI literacy instruction. However, they should not be interpreted as direct measures of students' preferences for AI-generated content over independent reading.

Against this background, the study addresses the following overarching research question: How can behavioural science research and published PISA findings help explain the relationship between AI use for schoolwork, reading engagement, and learning outcomes among 15-year-old students?

To address this question, the study examines three interrelated issues:

1. What do the published PISA findings reveal about students' use of AI, particularly in Uzbekistan?
2. How can cognitive-demand avoidance and cognitive offloading provide theoretical explanations for students' choices between AI-assisted learning and independent reading?
3. What educational strategies can schools adopt to encourage AI use that complements, rather than replaces, meaningful learning?

The scope of the study is deliberately defined. It does not seek to identify the motivations of individual students, establish a causal relationship between AI use and academic achievement, or estimate new statistical

associations. Instead, it integrates published empirical findings with established behavioural theories to develop a conceptual interpretation of AI-assisted learning and identify areas in which further empirical evidence is needed. This distinction is methodologically important because a theoretically plausible explanation should not be regarded as an empirically demonstrated mechanism without appropriate supporting evidence.

LITERATURE REVIEW

Kool et al. (2010) investigated how individuals make decisions when available options differ in their cognitive demands. Their research provides a theoretical foundation for understanding why individuals may sometimes prefer activities requiring less mental effort. When applied cautiously to educational contexts, this framework suggests that students may find AI-generated explanations particularly appealing when reading assignments are perceived as challenging, time-consuming, or associated with uncertainty. However, the framework does not imply that all students who use AI seek to avoid cognitive effort. Rather, it identifies a potential behavioural mechanism that warrants further empirical investigation.

Consider a student who is required to read a complex scientific article shortly before an assignment deadline. Understanding the article involves identifying its central argument, interpreting unfamiliar terminology, and evaluating the evidence supporting its conclusions. Requesting an AI-generated summary may reduce the immediate time required to identify the main points. If the student's primary objective is to complete the assignment within the available time, this option may appear particularly efficient. However, when the educational objective is to develop close-reading skills or the ability to evaluate evidence, relying exclusively on a summary may limit opportunities to practise these competencies. Thus, a strategy that is efficient for achieving an immediate task-related objective may not necessarily be optimal for developing longer-term learning outcomes.

This example serves as a theoretical illustration rather than an empirically observed case derived from PISA data. The published PISA indicators considered in this study do not directly measure students' perceptions of the cognitive effort saved through AI use. Consequently, perceived efficiency should be understood as a proposed explanatory mechanism rather than an empirically established finding of the present study.

Risko and Gilbert (2016) conceptualise cognitive offloading as the use of physical actions or external tools to reduce the cognitive demands associated with performing a task. Common examples include note-taking, calculators, search engines, and digital reminders. Cognitive offloading is not inherently detrimental to learning; under appropriate conditions, it can free cognitive resources for more complex activities. The key consideration is which aspects of a task are delegated to an external tool and whether learners continue to engage in the cognitive processes necessary for understanding, evaluating, and applying the resulting information.

Generative AI introduces a distinctive form of cognitive offloading because it can produce not only retrieved or stored information but also explanations, summaries, structured outlines, and draft arguments. For example, when a student uses AI to clarify an unfamiliar concept and subsequently returns to the original text, the technology may facilitate continued engagement with the learning material. Conversely, when a student relies entirely on an AI-generated summary without consulting the original source, the tool may substitute for the reading and analytical processes that the assignment is intended to develop. This distinction is conceptual, and the present study does not suggest that the published PISA findings directly capture students' subsequent behaviour after receiving AI-generated responses.

This perspective also supports a more nuanced interpretation of students' motivations. Some learners may seek AI assistance because they are genuinely interested in understanding a topic but require additional guidance. Others may face considerable time constraints, while some may use AI to explore unfamiliar subjects independently. Therefore, the act of using AI does not, in itself, provide sufficient evidence of a student's underlying motivation. A comprehensive understanding of AI-assisted learning requires consideration of learners' objectives, educational contexts, and subsequent engagement with learning materials rather than assumptions based solely on the frequency of AI use.

Reading is a multidimensional cognitive activity involving the identification of relevant information, construction of meaning, evaluation of arguments, and reflection on the evidence supporting a text's conclusions. The OECD's work on reading literacy emphasises the importance of evaluating information in digital environments rather than focusing exclusively on information retrieval (OECD, 2021). Although summaries can help readers develop an initial understanding of a text, they may not fully preserve the qualifications, inconsistencies, or supporting evidence contained in the original material. When educational assignments require students to compare arguments, evaluate evidence, or identify an author's underlying assumptions, these details constitute essential elements of the learning process.

This perspective does not imply that students must engage with every source without technological assistance. On the contrary, accessible explanations can make challenging texts more manageable, particularly when unfamiliar vocabulary or limited background knowledge creates barriers to comprehension. The central

distinction concerns whether AI assistance facilitates meaningful engagement with the original material or substitutes for the cognitive activities that the learning task is designed to develop.

For analytical purposes, this study distinguishes between two patterns of AI use: AI as a scaffold, in which AI-generated assistance supports students' engagement with learning materials, and AI as a substitute, in which AI-generated content replaces direct engagement with the original source or the intended learning activity. These categories are introduced as conceptual tools for interpreting educational practices and are not presented as formally defined or directly measured variables in the PISA findings examined in this study.

RESEARCH METHODOLOGY

This study adopts a secondary research design based on a focused narrative synthesis of published academic and institutional sources. It integrates three principal categories of evidence: (a) OECD publications reporting the findings of PISA 2025; (b) established behavioural science literature addressing cognitive demand and cognitive offloading; and (c) OECD research on reading literacy and information evaluation in digital environments.

The study does not involve the collection of primary data through surveys, experiments, or interviews, nor does it include an independent analysis of individual-level PISA records. Instead, it synthesises previously published findings and develops a theoretically informed interpretation of students' AI use in educational contexts. Accordingly, the study does not generate original statistical estimates or claim to establish causal relationships between AI use and academic performance.

The primary source of descriptive evidence is the OECD's *PISA 2025 Results (Volume I)* (OECD, 2026), including the Uzbekistan country note and the report's discussion of digitalisation and artificial intelligence in education. The analysis draws specifically on published indicators concerning the proportion of students who report using AI chatbots at least once a week to support their learning and the proportion who report receiving school-based instruction on evaluating AI-generated information.

The theoretical framework is informed by Kool et al. (2010), whose research examines decision-making under varying levels of cognitive demand, and Risko and Gilbert (2016), who investigate cognitive offloading through the use of external tools. In addition, OECD (2021) provides a conceptual foundation for understanding the cognitive competencies associated with reading literacy, information evaluation, and critical engagement with digital content.

Together, these sources provide a basis for examining the educational implications of AI-assisted learning while maintaining a clear distinction between directly reported empirical findings and theoretical interpretations.

The analytical approach distinguishes three categories of statements to ensure methodological clarity and consistency.

First, descriptive findings refer to information directly reported in the cited publications, such as the proportion of students who indicate that they use AI chatbots weekly to support their learning.

Second, theoretical interpretations draw on established behavioural concepts, including cognitive-demand avoidance and cognitive offloading, to explain potential mechanisms underlying students' choices when engaging with AI-assisted learning tools.

Third, research hypotheses identify relationships and mechanisms that could be examined through future empirical investigations.

Maintaining these distinctions helps ensure that theoretically plausible explanations are not presented as directly observed empirical relationships or established causal effects.

The analysis is intentionally restricted to published findings. Although the PISA 2025 public-use database is available, the present study does not independently calculate estimates using individual student records. Furthermore, it does not directly measure students' preferences for AI-generated content over independent reading.

The available indicators provide a foundation for discussing the prevalence of AI-assisted learning and students' reported exposure to AI-literacy instruction. However, they do not independently establish the motivations underlying individual decisions to use AI or the extent to which such use complements or substitutes for independent reading activities.

ANALYSIS AND RESULTS

According to the OECD's published PISA 2025 findings, 48.6% of students in Uzbekistan reported using AI chatbots at least once a week to support their learning, compared with an OECD average of 45.5% (OECD, 2026). The difference between these figures is relatively modest, suggesting that weekly AI-assisted learning is widespread in both Uzbekistan and OECD countries rather than representing an exceptional pattern specific

to Uzbekistan.

Importantly, these percentages describe the general use of AI tools for learning-related purposes. They do not indicate that 48.6% of students in Uzbekistan use AI as a substitute for reading, nor should they be interpreted as a measure of reading avoidance.

This distinction is particularly relevant to the central research question. The reported use of AI to support learning may encompass various educational activities, including requesting explanations, obtaining feedback, generating discussion questions, or seeking simplified descriptions of unfamiliar concepts. Such activities do not necessarily replace independent reading.

For example, students may consult AI-generated explanations before engaging with a text, while reading it, or after completing the reading assignment. These patterns may serve different educational purposes and have different implications for learning. Without task-specific evidence concerning how students interact with AI-generated responses, the overall frequency of AI use cannot reliably distinguish between these forms of engagement.

AI-Literacy Instruction Is Widely Reported, but Educational Exposure Does Not Necessarily Demonstrate Proficiency

In Uzbekistan, 80.6% of students reported that they had received instruction during school lessons on how to evaluate AI-generated information, compared with an OECD average of 62.6% (OECD, 2026). This difference represents a notable indicator of students' reported exposure to AI-literacy education and suggests that opportunities to develop AI-evaluation skills are widely reported in Uzbekistan.

Nevertheless, participation in instructional activities does not necessarily demonstrate mastery of the competencies being taught. The reported percentage does not independently establish that all students can consistently identify inaccurate AI-generated responses, verify factual claims, or recognise potentially misleading summaries.

Similarly, the available indicator does not determine whether exposure to AI-literacy instruction influences students' subsequent AI-use practices or their reading-related learning outcomes. Establishing such relationships would require more direct assessments of students' competencies, learning behaviours, and educational performance.

Consequently, the findings should be interpreted as evidence of reported instructional exposure rather than direct evidence of demonstrated AI-literacy proficiency.

The OECD's summary of PISA 2025 findings describes a complex relationship between students' use of AI and their academic performance. According to the published results, students who do not use AI for certain specific schoolwork tasks tend to demonstrate higher performance than those who do. At the same time, students who report using AI at least weekly for general learning purposes perform, on average, at levels comparable to those of non-users.

The OECD also reports that frequent AI use, when accompanied by opportunities to develop AI-literacy competencies, is associated with slightly more favourable performance patterns (OECD, 2026). These findings highlight the importance of distinguishing between different purposes and contexts of AI use. However, the reported relationships should be interpreted as statistical associations rather than evidence that AI use itself causes improvements or reductions in academic achievement.

Several alternative explanations may account for the observed patterns. For instance, students who experience greater academic difficulties may be more inclined to seek AI assistance. This could generate an association between AI use and lower academic scores even if the assistance provides some benefit relative to the outcomes those students might otherwise achieve.

Alternatively, certain forms of AI use may substitute for learning activities that would otherwise provide valuable opportunities for independent practice and cognitive development. Students may also differ in their prior knowledge, instructional environments, access to educational support, and ability to critically evaluate AI-generated information.

Without a research design capable of distinguishing among these potential explanations, the direction and nature of any causal relationships remain uncertain.

Therefore, the available evidence does not justify a general conclusion that AI use necessarily undermines learning, nor does it establish that AI use consistently improves educational outcomes. A more balanced interpretation is that the educational implications of AI depend on the purposes for which it is used, the context in which it is applied, and the extent to which students remain actively engaged in the learning process. Frequency of use alone is therefore an insufficient indicator of the educational value of AI-assisted learning.

Behavioural science provides a theoretical framework for understanding why AI-generated summaries may be attractive to students. Such summaries can reduce the immediate cognitive effort required to obtain a condensed account of a text. This reduction may be particularly relevant when students experience fatigue, face time constraints, or encounter uncertainty about how to approach a challenging assignment. From the learner's

short-term perspective, choosing an AI-generated summary may therefore represent an understandable strategy, even when it does not fully align with longer-term educational objectives.

Consider a history assignment requiring students to explain how an author supports a particular claim and evaluate the persuasiveness of the supporting evidence. An AI-generated summary may communicate the author's principal conclusion but omit important elements of the argument's structure or limitations in the available evidence. If a student prepares a response based exclusively on such a summary, the assignment may be completed without fully engaging in the analytical processes that it is intended to assess.

Conversely, a student who uses AI to clarify unfamiliar terminology and subsequently returns to the original article may employ the same technology to facilitate close reading and deeper comprehension. The educational distinction therefore lies not simply in whether AI is used, but in which intellectual activities remain the responsibility of the learner.

This example illustrates a potential mechanism consistent with research on cognitive-demand avoidance and cognitive offloading. However, it does not constitute empirical evidence regarding the prevalence of either pattern among students. In particular, the overall frequency of AI use reported in PISA cannot be used to determine how many students rely on AI-generated summaries as substitutes for independent reading.

AI can fulfil several functions within a single academic assignment. It may explain unfamiliar vocabulary, generate questions for self-assessment, suggest counterarguments, summarise source materials, or assist in drafting written responses. These applications differ in the extent to which they transfer the intended cognitive demands of a learning activity from the student to the technological tool.

For example, requesting the definition of an unfamiliar term may help students overcome a specific comprehension barrier while preserving their responsibility for interpreting the broader text. In contrast, requesting a complete argument or fully developed response may transfer a substantially greater proportion of the reasoning and composition processes to AI.

The distinction between AI as a scaffold and AI as a substitute provides a useful conceptual framework for examining these differences. When AI functions as a scaffold, it offers temporary assistance while students retain responsibility for reading, verifying information, interpreting evidence, and developing independent judgements. When AI functions as a substitute, the generated response may become the final product, with limited engagement in verifying its accuracy or reconstructing the underlying reasoning.

Nevertheless, actual patterns of AI use may not fit neatly into these two categories. Students may use AI constructively for certain activities while relying more extensively on automated assistance for others. Consequently, the educational implications of AI use should be evaluated in relation to the specific task, the learner's objectives, and the cognitive processes involved rather than through a rigid distinction between AI users and non-users.

Self-regulated learning involves planning learning activities, monitoring comprehension, evaluating progress, and selecting appropriate strategies when difficulties arise. In AI-assisted educational environments, these processes may influence whether students regard AI-generated responses as preliminary guidance or as definitive answers.

For instance, a student who recognises that an AI-generated explanation is incomplete or unclear may consult the original source, compare alternative explanations, or seek clarification from a teacher. Such actions may promote more active engagement with learning materials. Conversely, accepting AI-generated information without verification may increase the likelihood that inaccuracies, omissions, or oversimplifications remain unidentified.

The published PISA finding that AI use accompanied by opportunities to develop AI-literacy competencies is associated with somewhat more favourable academic performance patterns is consistent with the potential importance of information evaluation. However, this association does not establish that AI-literacy instruction or verification skills directly cause improved educational outcomes.

Students who receive AI-literacy instruction may also benefit from other educational advantages, including differences in instructional quality, learning resources, and institutional support. These factors may contribute to the observed relationships.

Accordingly, strengthening students' information-evaluation skills represents a reasonable educational strategy, while the magnitude and causal effects of such interventions require further empirical investigation.

Interpreting the Evidence from Uzbekistan: Opportunities and Limitations

Uzbekistan provides a relevant context for examining AI-assisted learning because the reported prevalence of weekly AI use is relatively close to the OECD average, while the proportion of students reporting exposure to AI-evaluation instruction is higher than the corresponding OECD average (OECD, 2026).

Taken together, these findings raise an important research question: when students have access to AI tools and report receiving instruction on evaluating AI-generated information, to what extent do they verify the explanations provided and continue engaging with original reading materials?

The published percentages alone cannot answer this question. They do not establish whether students reporting AI-literacy instruction are the same individuals who use AI weekly, how effectively those students evaluate AI-generated responses, or whether they subsequently consult the original texts.

Furthermore, the two aggregate indicators do not demonstrate that AI-literacy instruction explains differences in academic performance. Establishing such relationships would require more detailed individual-level evidence linking the purposes of AI use, information-verification practices, reading behaviours, and educational achievement.

A future empirical study incorporating these variables could provide a more comprehensive understanding of how AI-assisted learning interacts with students' reading engagement and academic development.

The theoretical discussion and published empirical findings suggest several practical directions for educational institutions and future research. These recommendations focus on promoting the responsible integration of AI into learning activities while preserving students' opportunities to develop independent reading, critical thinking, and analytical skills.

First, educational institutions should differentiate between the purposes and forms of AI use rather than categorising students solely as AI users or non-users. Educational policies that treat all AI-assisted activities as equivalent may overlook important differences between using AI to clarify a difficult passage and relying on AI-generated responses to complete tasks intended to develop independent reasoning. A more differentiated approach would enable teachers to identify forms of AI assistance that complement educational objectives and those that may require additional guidance or instructional safeguards.

Second, AI-literacy instruction should place particular emphasis on information verification and critical evaluation. Students could be encouraged to compare AI-generated summaries with original source materials, identify claims requiring supporting evidence, and explain which important details or qualifications have been omitted. Such activities would provide opportunities to demonstrate information-evaluation competencies in practice rather than assuming that exposure to instruction necessarily results in proficiency.

Third, academic assignments should explicitly communicate their intended learning objectives and the appropriate role of AI assistance. When an assignment is designed to develop close-reading skills, students could be required to reference specific passages, explain how evidence supports an author's argument, or compare an original source with an AI-generated summary. Where AI use is permitted, students could also document the prompts they submitted, the information they verified, and the revisions they made after consulting the original material. These practices would help integrate independent engagement, transparency, and critical reflection into the learning process.

Fourth, future empirical research should investigate students' AI-use behaviours through more direct and task-specific measures. One possible research design would compare students' performance under clearly defined learning conditions: independent reading of an original text, AI-assisted clarification during reading, and reliance on an AI-generated summary. Such research should assess reading comprehension, delayed recall, and the ability to evaluate evidence rather than relying exclusively on assignment completion time.

Where individual-level survey data are available, researchers should distinguish among different purposes of AI use, including explanation, summarisation, drafting, and source evaluation. Analyses should also account for prior academic achievement and relevant individual, educational, and contextual characteristics. Any conclusions concerning causal effects should be supported by an appropriate research design capable of distinguishing the influence of AI use from alternative explanations.

Overall, these recommendations emphasise the importance of integrating AI into educational practice in ways that support students' cognitive engagement, strengthen information-evaluation skills, and encourage independent learning. They also highlight the need for further empirical research to establish which forms of AI assistance are most beneficial under different educational conditions.

CONCLUSION AND RECOMMENDATIONS

The choice between artificial intelligence (AI) assistance and independent reading should not be viewed merely as a distinction between emerging technologies and traditional learning practices. Rather, it reflects how students distribute cognitive responsibilities between their own intellectual efforts and external technological tools. Behavioural science research on cognitive demand and cognitive offloading provides a theoretical foundation for understanding why AI-generated responses may be particularly appealing when learning tasks are perceived as challenging or when students face time constraints. Nevertheless, these theoretical perspectives do not establish that students necessarily use AI to avoid cognitive effort, nor does the convenience of AI-assisted learning automatically imply a reduction in learning quality or educational outcomes.

The published PISA 2025 findings indicate that AI-assisted learning is relatively common among 15-year-old

students. In Uzbekistan, 48.6% of students reported using AI chatbots at least once a week to support their learning, compared with an OECD average of 45.5%. Furthermore, 80.6% of students in Uzbekistan reported receiving school-based instruction on evaluating AI-generated information, compared with 62.6% across OECD countries (OECD, 2026). The OECD also identifies differences in academic performance patterns across various forms of AI use, highlighting the complexity of the relationship between AI-assisted learning and educational achievement rather than suggesting a uniform positive or negative effect.

The findings support a cautious and context-sensitive interpretation of AI's educational role. Its potential contribution to learning depends on the purpose for which it is used, the nature of the cognitive tasks delegated to the technology, and the extent to which students continue to engage in independent reading, critical evaluation, and reasoning. Although the present study does not establish the motivations underlying individual students' decisions to use AI instead of reading, it offers a theoretically informed framework for interpreting these choices and identifies directions for future empirical investigation.

Accordingly, the primary educational objective should not be to maximise or restrict AI use indiscriminately, but to promote its purposeful and responsible integration into learning activities. Educational institutions should encourage approaches that make challenging academic materials more accessible while preserving students' opportunities to develop independent comprehension, analytical reasoning, and critical thinking skills. Such an approach can help position AI as a complementary educational resource that supports meaningful learning without replacing the essential cognitive processes through which knowledge and understanding are developed.

Based on the theoretical analysis and published findings, the following recommendations are proposed:

1. Strengthen AI literacy and critical information-evaluation skills in secondary education. Educational institutions should integrate practical AI-literacy activities into existing curricula, particularly for 15-year-old students. These activities should encourage learners to verify AI-generated information, compare automated summaries with original sources, and critically evaluate the accuracy and completeness of generated responses. Particular attention should be given to developing students' ability to distinguish between AI assistance that supports understanding and AI use that substitutes for independent cognitive engagement.

2. Promote the balanced integration of AI-assisted learning and independent reading. Teachers should design learning activities that encourage students to use AI as a supplementary educational tool rather than as a replacement for reading, reasoning, and analytical tasks. Assignments could require students to identify evidence from original texts, evaluate AI-generated explanations, and demonstrate their own understanding of the material. This approach may help strengthen reading comprehension, self-regulated learning, and critical thinking while maintaining the educational benefits of AI-assisted support.

3. Conduct further empirical research on the relationship between AI use, reading engagement, and academic performance. Future studies, particularly in Uzbekistan, should investigate how different purposes of AI use are associated with students' reading behaviours and learning outcomes. Research designs incorporating individual-level data, task-specific measures, and appropriate comparison groups could provide more reliable evidence regarding the educational implications of AI-assisted learning. Where feasible, longitudinal or experimental approaches should be employed to assess potential causal relationships and identify effective strategies for integrating AI into educational practice.

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