



*An Investigation on the Impact of AI in Enhancing the Academic Achievement of Students with Attention and Focus issues: Teachers' and Students' Perceptions and Perspectives: The Case of*

*Master One Students at the Institute of Electrical and Electronic Engineering at Boumerdes University*

*Une étude sur l'impact de l'intelligence artificielle dans l'amélioration de la réussite académique des étudiants souffrant de difficultés d'attention et de concentration : perceptions et perspectives des enseignants et des étudiants.*

*Cas des étudiants de Master 1 à l'Institut de Génie Électrique et Électronique de l'Université de Boumerdès.*

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# *An Investigation on the Impact of AI in Enhancing the Academic Achievement of Students with Focus and Attention Issues.*

<b>Abstract :</b>	<b>Article info</b>
<p><i>Artificial Intelligence has firmly established itself as an integral part in various fields, and the education context is no exception. Most students are rapidly and increasingly using AI-driven tools, abandoning traditional learning methods. Hence, teachers are raising the alarm against AI over-reliance and the potential negative impact on students' engagement and motivation. To evaluate the actual impact of AI generative tools on the learning experience and outcomes of students who struggle with focus and attention issues, a mixed-methods research design is employed. A Questionnaire was delivered to 59 students at the Institute of Electric and Electronic Engineering, Mohammed Bouguerra University, Boumerdes, while five teachers were interviewed to obtain a comprehensive picture of the topic. The results revealed that AI tools can positively impact the quality of learning among students with such disabilities as they assist with personal feedback, self-pacing, and personalized learning. Therefore, policymakers, educators, and curriculum designers must place greater emphasis on AI inclusion in classroom activities to benefit learners with special needs</i></p>	<p><i>Received</i> 17./10./2025</p>
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	<p><b><u>Keyword:</u></b></p> <ul style="list-style-type: none"><li>✓ <i>AI-driven tools</i></li><li>✓ <i>attention and focus issues</i></li><li>✓ <i>learning outcomes</i></li><li>✓ <i>special needs</i></li><li>✓ <i>personalized learning</i></li></ul>

## **1. Introduction**

Maintaining the right level of concentration and engagement throughout the learning experience is crucial. However, due to the modern pace of life, the speed age, and the fragmented nature of modern learning environments, many students find it difficult to sustain attention for long periods. Moreover, the incessant stream of digital distractions, easy access to information, and pressure to multitask have all contributed to the erosion of students' focus and, consequently, their capacity to engage deeply with academic material. This poses a significant challenge in the academic landscape, as students struggle to absorb and retain new information, participate actively in class, or complete complex tasks, which can hinder the development of critical thinking, problem-solving skills, and deep understanding.

Yet, with the advent of AI tools, learners can now navigate their own learning pathways. Despite the ethical issues (overreliance, cheating, plagiarism, etc.) raised by educators regarding the use of artificial intelligence among students and their fear that over-reliance may undermine critical thinking abilities and deep understanding, learners continue to leverage these technologies more and more.

To delve into the topic, this study aims to investigate the perceptions of teachers and students regarding the potential impact of AI generative tools on the academic performance of learners with attention and focus issues.

## **2. Literature Review**

Attention and focus are significant cognitive abilities that enable learners to concentrate on one task to process information while ignoring irrelevant distractions. Enhanced focus and attention can improve performance, productivity, and learning outcomes (Olney & Risko, 2015). James (1890) defined attention as “the taking possession by the mind, in clear and vivid form, of one out of what seem several simultaneously possible objects or trains of thought; localization, concentration, of consciousness are of its essence. It implies withdrawal from some things to deal effectively with others and is a condition that has a real opposite in the confused, dazed, scatter-brained state” (p. 404). He stressed that attention is not merely passive reception but involves a deliberate focusing of mental energy on a specific object or idea.

A distinction has been made between sensorial attention, i.e., attending to sensory input (like a sound or sight), and intellectual attention, i.e., attending to mental representations (like a memory or idea). Three types of attention exist:

1. **Selective attention:** “The most obvious characteristic of attention is that it is selective—for example, we choose to attend to certain people or objects in the environment and more or less ignore everything else. It has been argued that visual attention is like a spotlight or a zoom lens that focuses on a given area within the visual field” (Eysenck, 2009, p. 133).
2. **Sustained attention:** Maintaining focus over a prolonged period.
3. **Divided attention:** Attending to multiple tasks or stimuli simultaneously.

Addressing attention-related issues is necessary to improve educational experiences and outcomes for students. Shah and Saleem (2015) point out that attention significantly impacts academic outcomes among secondary school students. Their conclusions indicate that teachers and educational practitioners must consider attention levels in their teaching and learning environments and provide necessary support to enhance academic achievement. Attention was positively linked to high academic achievement on targeted assessments (math fluency and reading comprehension), as well as broad academic measures (statewide standardized test scores; Gallen et al., 2023). Moreover, Gordon et al. (1994) found that learners with attention deficit had significantly lower scores than those who were trained to sustain their attention on a computerized continuous performance task.

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Research indicates that several factors contribute to focus and attention issues among today's learners: technology use, social media, and smartphones may impede attention and lead to distractibility (Hinkley et al., 2019; Madigan et al., 2019). In the same respect, Rioja et al. (2023) found evidence for a relatively robust negative link between media multitasking and attention issues. Individuals who reported greater multitasking also tended to report higher levels of self-reported attention problems, motor impulsiveness, and sensation seeking.

On the other hand, despite their ability to raise alertness, combat feelings of fatigue, and improve performance in tasks requiring sustained attention, it was found that sugar and energy drinks may contribute to mood swings, anxiety, and attention problems as they can disrupt sleep patterns, making it hard to sleep and hence affecting sleep quality (Ishak et al., 2012). Conclusively, lack of sufficient sleep can worsen such problems (Stepan et al., 2019).

Moreover, Anxiety increases sensitivity to threats and stress-related cues, disturbing the normal balance between intentional (top-down) and automatic (bottom-up) attention control. The result is deficits in attentional capacity. Worry and fear are components of state anxiety. They interfere with cognitive processes by consuming working memory resources, leading to decreased cognitive performance; the ability to suppress irrelevant information or responses, the ability to flexibly switch attention between different tasks or mental sets, and the ability to update and monitor information in working memory are all affected (Eysenck et al., 2007).

Despite that, some learners can capture and maintain attention during learning if certain factors are available: novelty, relevance, challenge, and feedback, which can be leveraged to design engaging tasks and topics that enhance learning and performance (Hidi & Renninger, 2006). They suggest that tasks or topics that are perceived as meaningful, enjoyable, or challenging can increase focused attention and engagement. Berridge and Kringelbach (2008) argue that engaging stimuli can activate the brain's reward system, enhance dopamine release and promote motivation.

Indeed, no one has failed to observe the growing trend among learners to use AI generative technologies. Bester and Brand (2013) assert that technology significantly enhances learner attention and achievement. In the same field of inquiry, research points out that while AI raises concerns about over-reliance, diminished critical thinking, data privacy risks, and academic dishonesty, it also improves personalized learning, academic outcomes, and student engagement (Vieriu & Petrea, 2025). This means that AI can improve academic outcomes and align educational practices with the digital age that today's learners are accustomed to.

The argument for using AI-driven tools has always been to enhance accuracy, efficiency, decision-making, and time-saving. Holmes et al. (2023) state that artificial intelligence

includes everything from AI-driven, step-by-step personalized instructional and dialogue systems, through AI-supported exploratory learning, the analysis of student writing, intelligent agents in game-based environments, and student-support chatbots, to AI-facilitated student/tutor matching that puts students firmly in control of their own learning. Luckin et al. (2016) confirm the same claim; however, they raise new concerns that over-reliance on these tools will diminish learners' critical thinking abilities.

Critical thinkers are those who engage in higher-order learning, such as synthesis, evaluation, and creativity. Research suggests that AI may negatively impact students' problem-solving abilities, as its systems often limit opportunities for analysis and reflection. Findings revealed that AI-driven educational methods promote passive learning and hinder interest and involvement with the learning process (Carr, 2020; Kerma, 2025).

Personalized learning is one of the core objectives of 21st-century educational settings. Aliouche and Mezghich (2022), by adopting a needs analysis questionnaire, argue that AI can personalize the teaching-learning experience, strengthen language skills, and improve learning outcomes. In the same respect, Alkinani (2021) asserts that AI can improve language speaking skills through developing pronunciation, while Nazari et al. (2021) highlighted the role of AI in enhancing writing skills.

Many studies claim the benefits of AI in supporting students with mixed abilities. Students with mixed abilities refer to a group of learners with different learning styles, varying levels of proficiency, and diverse capabilities within the same classroom or educational setting (Tomlinson, 2001). Vieriu et al. (2025) have found that AI-powered tools can improve retention rates and conceptual mastery, increase student engagement, and reduce cognitive overload among learners with mixed abilities.

Moreover, AI has positively supported special education by providing personalized support, structure, and accommodation. Garg and Sharma (2020) assert that technology can enhance creativity among individuals with and without disabilities. People with disabilities are referred to as individuals with special needs who have a restriction or lack (resulting from an impairment) of the ability to perform an activity in the manner that is typical for most individuals.

The World Health Organization (WHO) reports that more than one billion people in the world suffer from some form of disability. Such individuals often lack healthcare, education, and job opportunities. Without convenient assistive devices, they frequently lack the means to engage in education for a living, which is essential for leading an independent and better life. Additionally, Sharma et al. (2023) found that individuals with sensory and/or physical impairments, learners with autistic spectrum disorders, learners with reading, writing, and spelling difficulties, learners with dyslexia, learners with difficulties in mathematics, and those with attention deficit hyperactivity disorder (ADHD) have shown improvements in academic achievement thanks to AI applications.

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In the Algerian context, higher education teachers express concerns about the ethical issues of AI use (Achili and Zerrouki, 2024). However, they still emphasize the necessity of integrating AI in classrooms, following serious training and sophisticated technological infrastructure.

There is a lack of research specifically targeting how AI tools can be tailored to meet the needs of students with attention deficits and how we could explore personalized AI solutions that cater to these students' learning styles. Moreover, the role of AI in enhancing the learning experience and providing feedback to students with attention deficits is underexplored. Investigating how AI can offer timely and constructive feedback could enhance learning outcomes.

The following study is intended to investigate teachers' and students' perceptions regarding the potential impact of the use of AI generative tools on the academic performance of learners with attention and focus issues.

### **3. Research Questions**

To delve into the aforementioned aims, we aim to answer the following research questions:

- To what extent do learners suffer from focus and attention issues?
- To what extent can learners with attention and focus issues leverage AI tools to enhance their learning outcomes?
- What are the teachers' and students' perceptions of the impact of AI on the learning experience of learners with attention and focus issues?

### **4. Research Methodology**

#### **4.1. Research Design**

The main purpose of this paper is to investigate the teachers' and students' perceptions of the impact of AI generative applications on the academic achievement of learners with focus and attention issues. So, we opted for a mixed-methods research design because it is the best way to get a complete picture in the human sciences.

#### **4.2. Data Collection Instruments**

According to Venkatesh et al. (2016), "quantitative surveys are good for measuring attitudes and eliciting other content from participants. Quick turnaround. The questions are standardized. All respondents are asked the same questions in the same order. Thus, the study can be replicated easily" (p. 117). Moreover, interviews can provide in-depth

information, helping participants to describe what is important to them in their own words (p. 114).

### 4.3. Participants:

A convenience sampling method was used, where participants were chosen based on their availability and prior experience with AI technologies. This method was selected because of the exploratory nature of the study, which aimed to collect initial insights from individuals interested in AI.

The participants who were selected to take part in the study were first-year master's students at the Institute of Electrical and Electronics Engineering at Boumerdes University. The number of randomly selected participants who were asked to answer was 59 students. Additionally, five (05) teachers from the same institution took part in the interview.

## 4.4. Results

### 4.4.1. Focus and Attention Issues

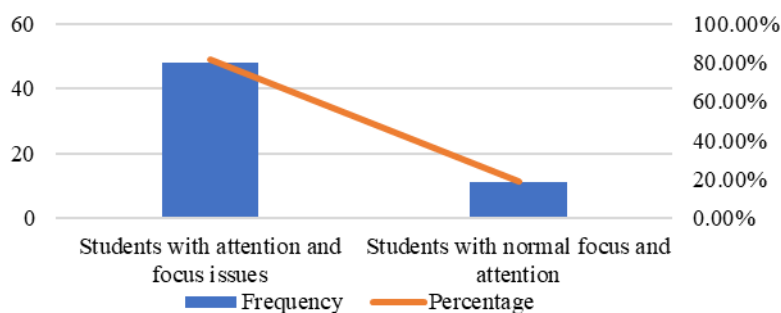
**Table 1**

*Attention and Focus among Students*

Options	Frequency	Percentage
Students with attention and focus issues	48	81.40%
Students with normal focus and attention	11	18.60%

**Figure 1**

*Attention and Focus among Students*



**Figure 1:** Attention and Focus among Students

The results displayed in Table 1 and Figure 1 indicate that the majority of respondents (81.4 %) view themselves as having issues with focus and attention, while

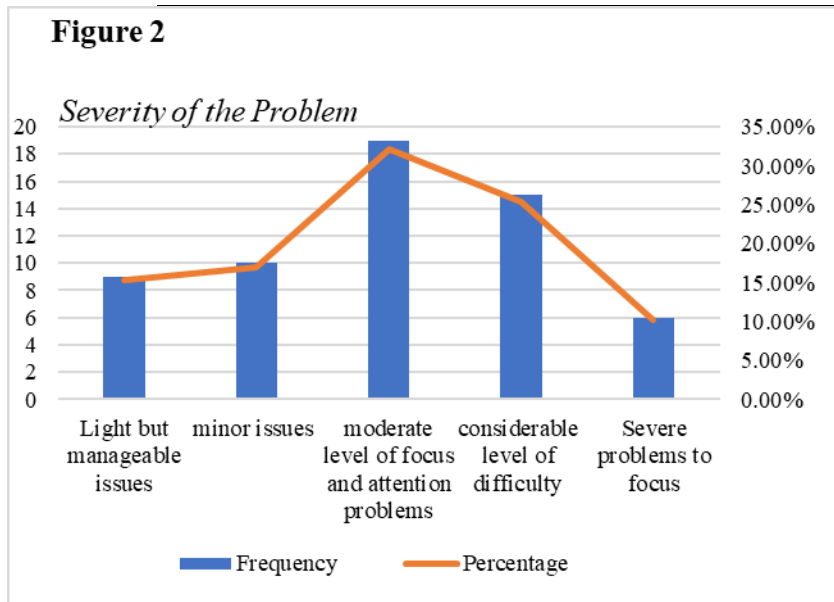
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18.6% deny having such issues. The results suggest a prevalent problem with focus and attention among the majority of respondents.

**Table 2**

*Severity of the Problem*

Options	Frequency	Percentage
Light but manageable issues	09	15.3%
minor issues	10	16.9%
moderate level of focus and attention problems	19	32.2%
considerable level of difficulty	15	25.4%
Severe problems focusing	06	10.2%



**Figure 2:** Severity of the Problem

As reported in Table 2 and Figure 2, a significant proportion of students (32.2%) reported experiencing moderate levels of focus and attention problems. (15.3 %) of students point out that they encounter light but manageable friction with focus and attention. (16.9 %) of the samples indicate that they have minor issues that are noticeable and have a slight impact, but are still manageable. The results showed that (35.6%) of respondents (ratings 4-5) experienced severe problems with focus and attention on their studies. The results suggest a considerable level of difficulty with focus and attention among most students

**Table 3**

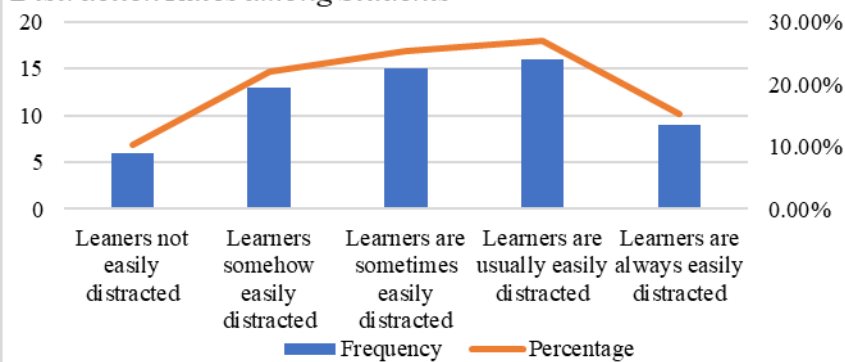
*Distraction Rates among Students*

Options	Frequency	Percentage
Leaners are not easily distracted	06	10.2%
Learners are somehow easily	13	22%

distracted			
Learners are sometimes easily	15	25.4%	
distracted			
Learners are usually easily	16	27.1%	
distracted			
Learners are always easily	09	15.3%	
distracted			

**Figure 03**

*Distraction Rates among Students*



**Figure 3:** Distraction Rates among Students

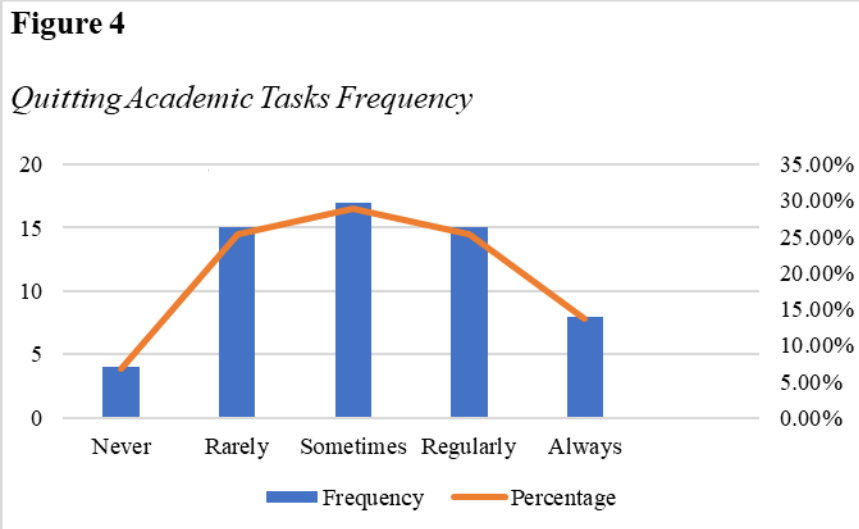
The results from Table 3 and Figure 3 showed that (10.2%) of the respondents rating 1-2 on the Likert scale markedly disagreed with the fact that they are easily distracted, while a significant proportion (27.1%) and (15.3%) rating 4-5 indicate they either usually or always have distraction issues. ( 25.4%) Generally agreed that they sometimes have distraction issues.

**Table 4**

*Quitting Academic Tasks Frequency Frequency*

Options	Frequency	Percentage
Never	04	6.8%
Rarely	15	25.4%
Sometimes	17	28.8%
Regularly	15	25.4%
Always	08	13.6%

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**Figure 4:** Quitting Academic Tasks

The distribution of results from Table 4 and Figure 4 indicates that ( 6.8%) of respondents rarely quit tasks before completion. (25.4%) Of the sample stated that they do it to a certain extent, while 28.8% reported that it occurred moderately. ( 39%) reported that they regularly or consistently quit tasks. The results indicate a significant number of respondents regularly quit tasks, which may be attributed to underlying issues such as motivation, focused attention, engagement, or task difficulty.

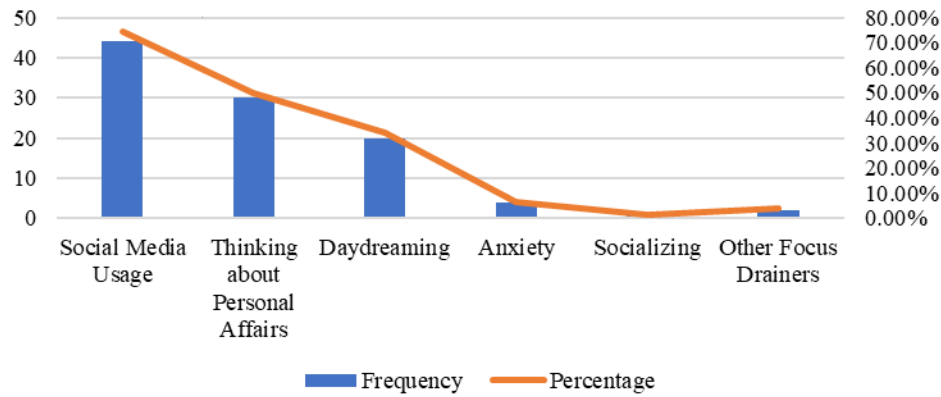
**Table 05**

*Focus Drainers*

Options	Frequency	Percentage
Social Media Usage	44	74.6%
Thinking about Personal Affairs	30	50%
Daydreaming	20	33.9%
Anxiety	4	6.8%
Socializing	1	1.7%
Other Focus Drainers	2	3.8%

**Figure 5**

*Focus Drainers*



**Figure 5:** Focus Drainers

The distribution of results from Table 5 and Figure 5 showed a skew towards social media usage being the major cause of draining students' energy to focus (74.6%). (50.8%) reported thinking about personal affairs being the main problem to distract their attention, while (33.9%) stated daydreaming as the main cause. (13.6%) reported different issues such as anxiety, social matters, or different daily drainers. The analysis reveals that social media is a predominant distraction for students, followed by personal affairs and daydreaming.

**Table 6**

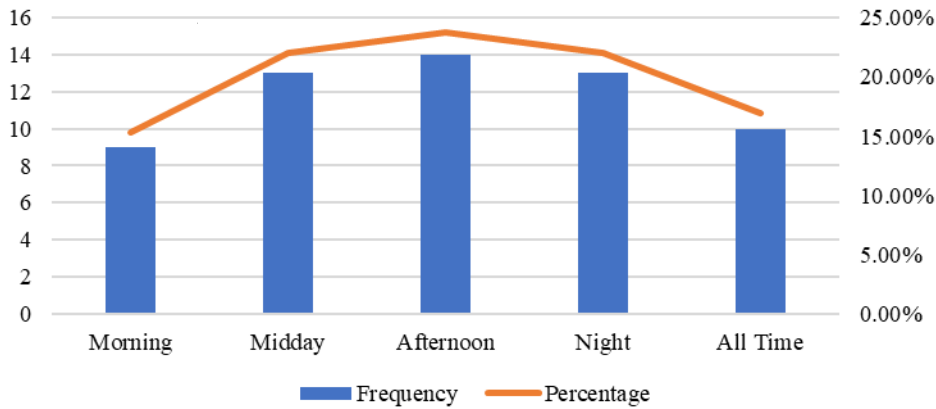
*Distraction Times*

Options	Frequency	Percentage
Morning	9	15.30%
Midday	13	22%
Afternoon	14	23.70%
Night	13	22%
All Time	10	16.90%

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**Figure 6**

*Distraction Times*



**Figure 6: Distraction Times**

From the illustrating Table 6 and Figure 6, ( 23.7%) of students reported being unable to concentrate during the afternoon, (22%) during night, another (22%) of the respondents reported they could not concentrate during midday, (15.3%) during morning, (16.9%) at all times. The results indicate that focus and attention deficit are prevalent throughout different parts of the day, invariably

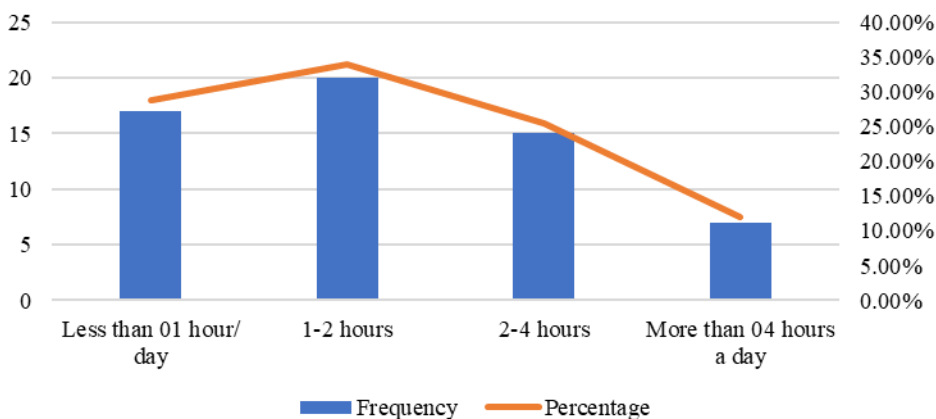
**Table 7**

*Average Study Time / Day*

Options	Number of Students	Percentage
Less than 01 hour/ day	17	28.8%
1-2 hours	20	33.9%
2-4 hours	15	25.4%
More than 04 hours a day	07	11.9%

**Figure 7**

*Average Time Study / Day*

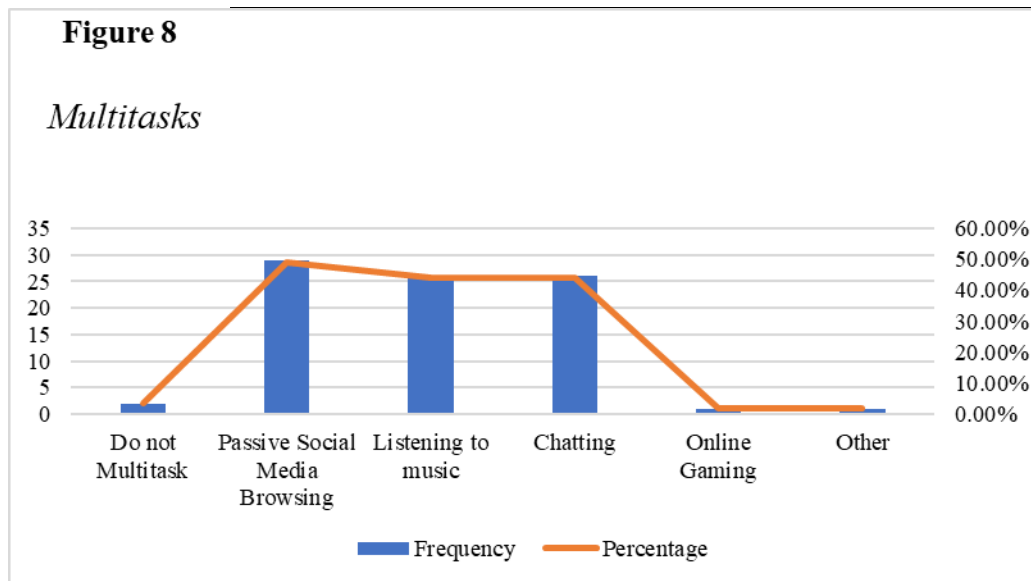


**Figure 7: Average Time Study /Day**

In Table 7 and Figure 7, we see a good number of students, 28.8% who state that they study less than an hour per day. 33.9% Study for 1-2 hours. 25.4% can study for 2 to 4 hours per day, while only 11.9% can study for more than 4 hours a day. The distribution is skewed toward lower study time, which could be attributed to learners' difficulties in concentration

**Table 8**  
*Multitasks*

Options	Frequency	Percentage
Do not Multitask	02	03.4%
Passive Social Media Browsing	29	49.2%
Listening to music	26	44.1%
Chatting	26	44.1%
Online Gaming	1	1.7%
Other	1	1.7%



**Figure 8: Multitasks**

Data from Table 8 and Figure 8 suggest that scrolling through social media is the most predominant multitasking activity among learners, at 44.1%. Listening to music and chatting come in second place with a percentage of 44.1% each. Other multitasks include playing online games, watching football matches (1.7%). Only a small portion (1.7%) denies multitasking,

**AI Usage**

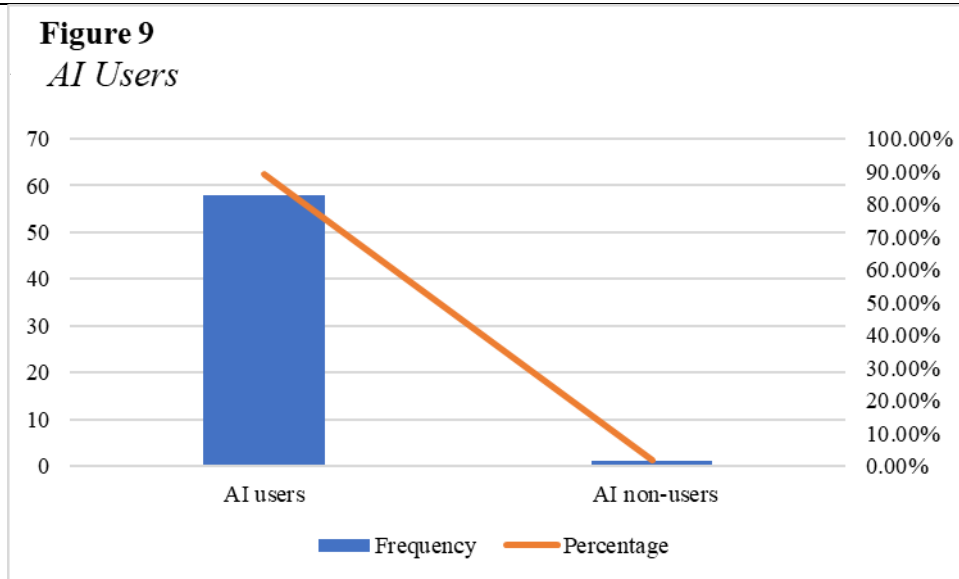
**Table 9**

*AI Usage*

Options	Frequency	Percentage
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*An Investigation on the Impact of AI in Enhancing the Academic Achievement of Students with Focus and Attention Issues.*

AI users	58	89.35%
AI non-users	01	01.75%



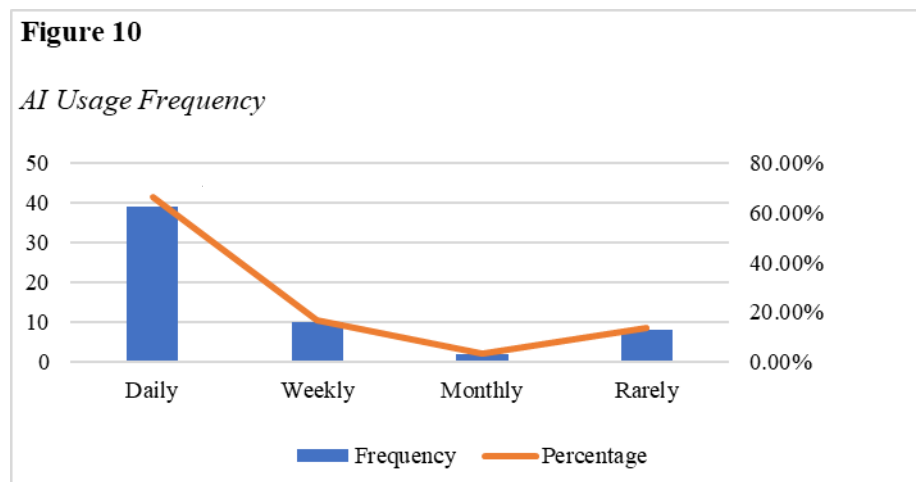
**Figure 9:** AI Users

According to Table 9 and Figure 9, the majority of learners (98.3% ) report using AI applications, while only (01.75%) report never using them.

**Table 10**

*AI Usage Frequency*

Options	Frequency	Percentage
Daily	39	66.10%
Weekly	10	16.90%
Monthly	2	3.40%
Rarely	8	13.60%



**Figure10:** AI Usage Frequency

The results obtained demonstrated that 66.1% use AI tools daily, 16.9% of respondents use them weekly, while 13.6% use them monthly, but only 3.4% state that they rarely use them

**Table 11**

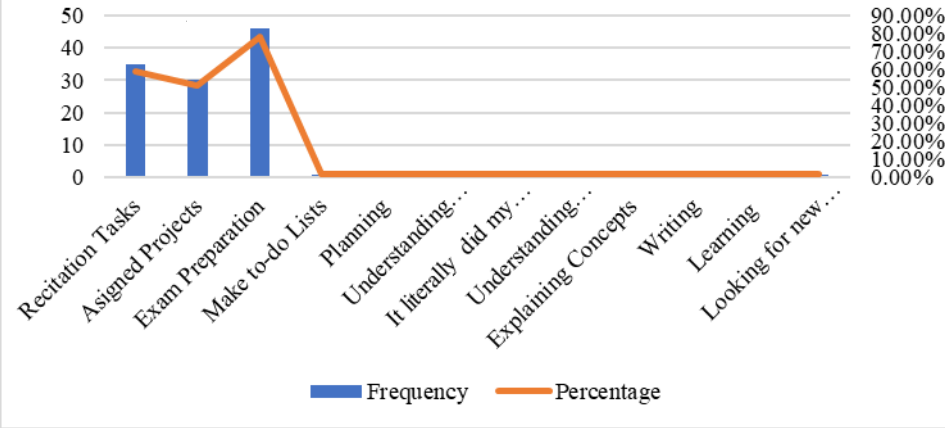
*Academic Tasks*

Options	Frequency	Percentage
Recitation Tasks	35	59.3%
Assigned Projects	30	50.8%
Exam Preparation	46	78%
Make to-do Lists	1	1.7%
Planning	1	1.7%
Understanding Concepts	1	1.7%
It literally did my bachelor's project	1	1.7%
Understanding Lectures	1	1.7%
Explaining Concepts	1	1.7%
Writing	1	1.7%
Learning	1	1.7%
Looking for new information	1	1.7%

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**Figure 11**

### *Academic Tasks*



**Figure 11: Academic Tasks**

Data displayed in Table 11 and Figure 11 report that students generally used AI. ( 78% ) Informants use AI tools to prepare for exams, while 59.3% of respondents use AI generative tools to accomplish recitations.50.8% report they use AI applications to accomplish assigned projects. One student reports accomplishing his bachelor's project thanks to AI. Other proportions report using AI for different tasks such as understanding concepts, lectures, and different information.

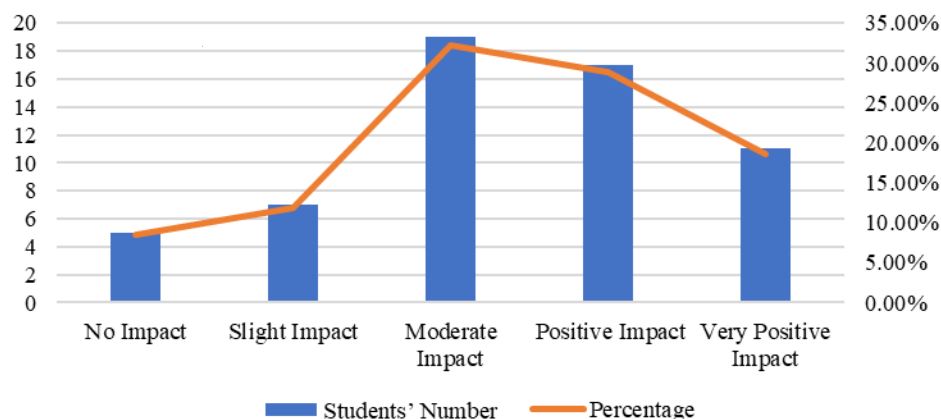
**Table 12**

### *AI Impact Evaluation on Focus and Attention*

Options	Students' Number	Percentage
No Impact	5	8.5%
Slight Impact	7	11.9%
Moderate Impact	19	32.2%
Positive Impact	17	28.8%
Very Positive Impact	11	18.6%

**Figure 12**

*AI Impact on Focus and Attention*



**Figure 12: AI Impact Evaluation on Focus and Attention**

From the illustrating Table 12 and Figure 12, 8.5% and 11.9% (13) of the learners point out on a linear scale rating between 1-2 that AI had no impact on their ability to keep focused attention. However, 32.2% view that it has a moderate impact, while the majority of respondents selected ratings 4-5 on the positive side of the scale to indicate AI's potential to enhance focus and attention on course material and academic tasks among learners.

### **Learning Outcomes**

**Table 13**

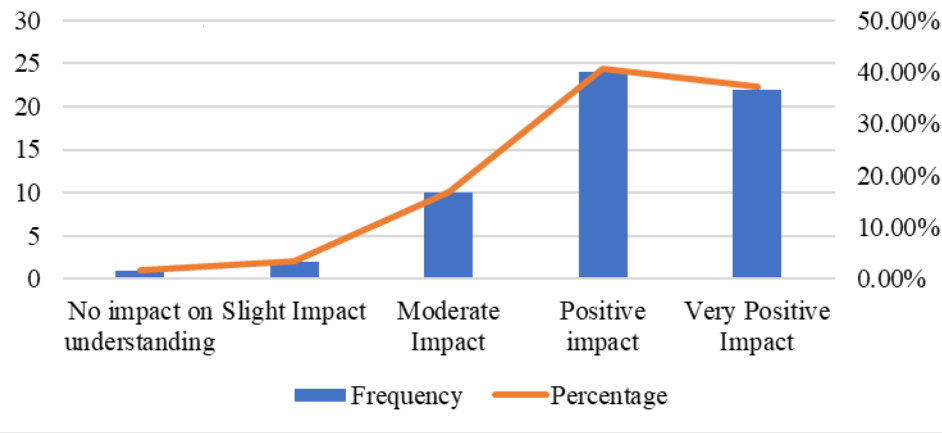
*AI Impact on Students 'Understanding of Course Material*

Options	Frequency	Percentage
No impact on understanding	1	1.7%
Slight Impact	2	3.4%
Moderate Impact	10	16.9%
Positive impact	24	40.7%
Very Positive Impact	22	37.3%

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**Figure 13**

*Impact on Understanding Course Material*



**Figure 13: Impact on Understanding Course Material**

The results in Table 13 and Figure 13 indicate a strong leaning towards positive opinions, with 40.7% and 37.3% of respondents selecting ratings 4 -5. 16.9% seem neutral, while only 1.7% + 3.4% (03 learners) chose that AI has not enhanced their understanding of course material.

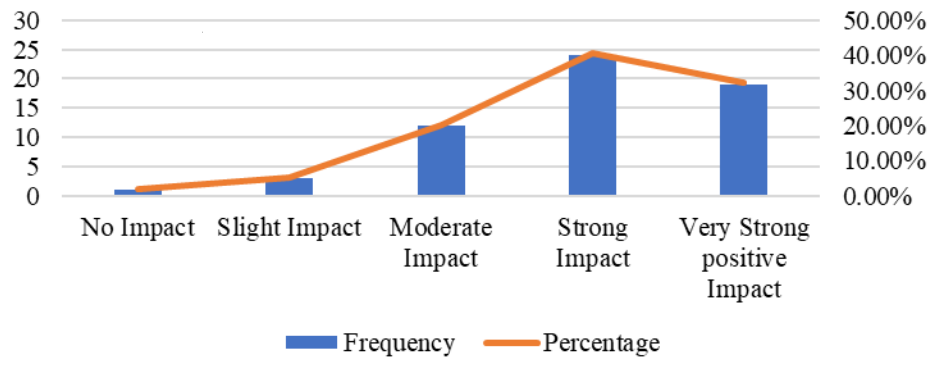
**Table 14**

*AI Impact on Learners' Time Pacing*

Options	Frequency	Percentage
No Impact	1	1.7%
Slight Impact	3	5.1%
Moderate Impact	12	20.3%
Strong Impact	24	40.7%
Very Strong positive Impact	19	32.2%

**Figure 14**

*AI Impact on Time Pacing*



**Figure 14: AI Impact on Time Pacing**

Throughout Table 14 and Figure 14, most students agree that AI tools have helped them study at their own pace ( 40.7% ). (32.2%) strongly agree with the same idea.20.3% state AI moderately impacts them, while 6.8% of respondents disagree with the same opinion on rating scales 1-2. This indicates that a significant portion leverage AI tools to study at their own pace.

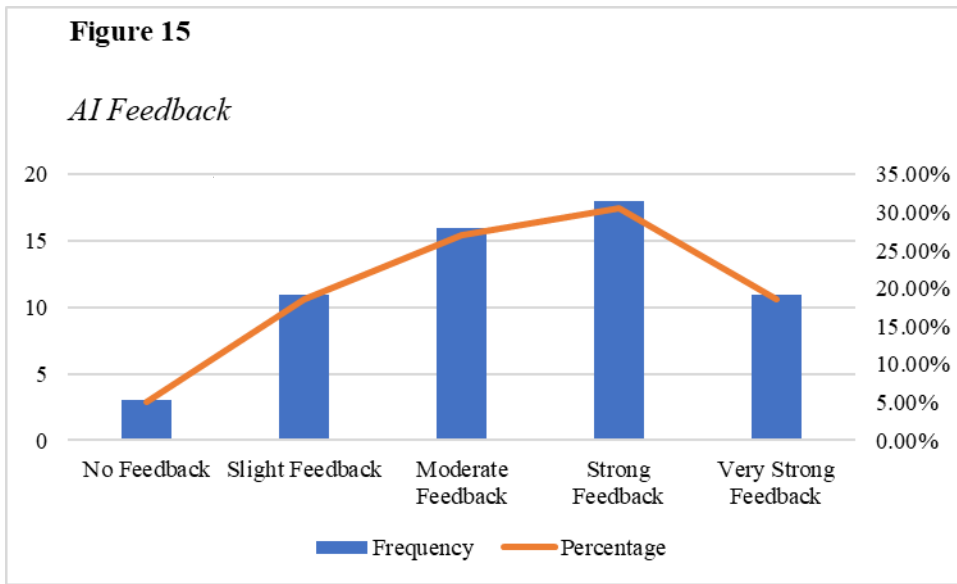
Table 16:

**Table 15**

*AI Feedback*

Options	Frequency	Percentage
No Feedback	3	5.1%
Slight Feedback	11	18.6%
Moderate Feedback	16	27.1%
Strong Feedback	18	30.5%
Very Strong Feedback	11	18.6%

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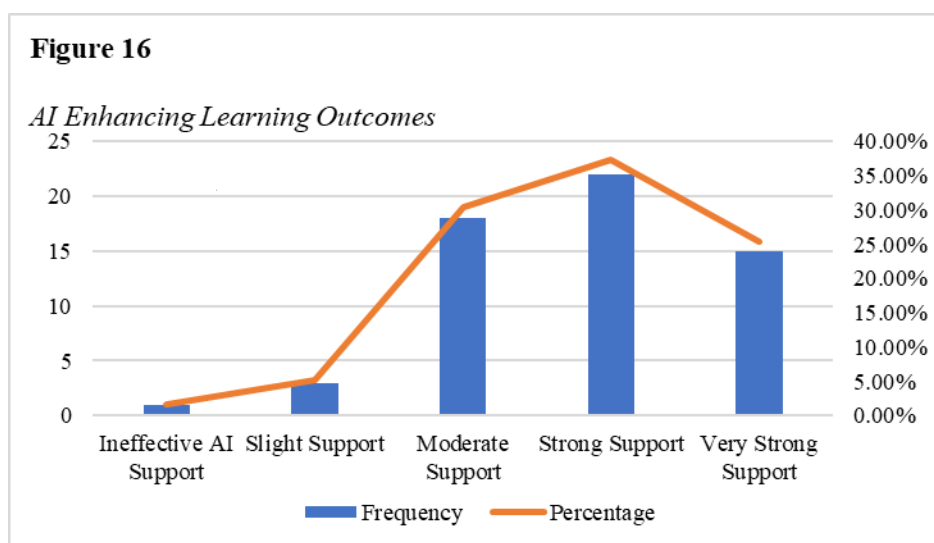
**Figure 15:** AI Feedback

Results from Table 15 and Figure 15 demonstrate that the majority of respondents (57.6%) rated the AI feedback positively, with a rating of 4 . 5. 27.1% of participants remained neutral with a rating of 3. 23.7% of participants rated the AI feedback negatively, with a rating of 1 or 2. The data suggests that the majority find AI feedback on their performance beneficial

**Table 16**

*AI Enhancing Learning Outcomes*

Options	Frequency	Percentage
Ineffective AI Support	1	1.7%
Slight Support	3	5.1%
Moderate Support	18	30.5%
Strong Support	22	37.3%
Very Strong Support	15	25.4%



**Figure16:** AI Enhancing Learning Tasks

In response to the statement “AI tools have helped me achieve better results, 37.3% indicate AI has enhanced learning outcomes, while 25.4% state AI has provided very effective support. 30.5% report moderate AI help. This suggests that a sizable group has received support to enhance their learning outcomes thanks to AI tools. Only 3.2% disagree with the point. This suggests that most learners are in favour of AI tools and see their positive impact on their performance.

**Table 17**

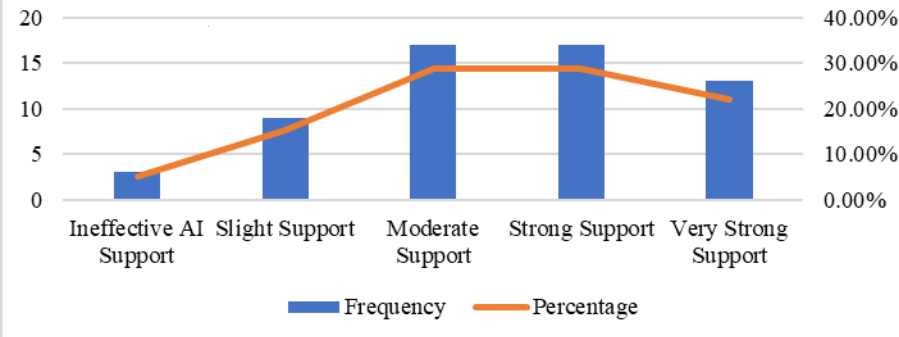
*AI and Students’ Engagement*

Options	Frequency	Percentage
Ineffective AI Support	3	5.1%
Slight Support	9	15.3%
Moderate Support	17	28.8%
Strong Support	17	28.8%
Very Strong Support	13	22%

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**Figure 17**

*AI and Students' Engagement*



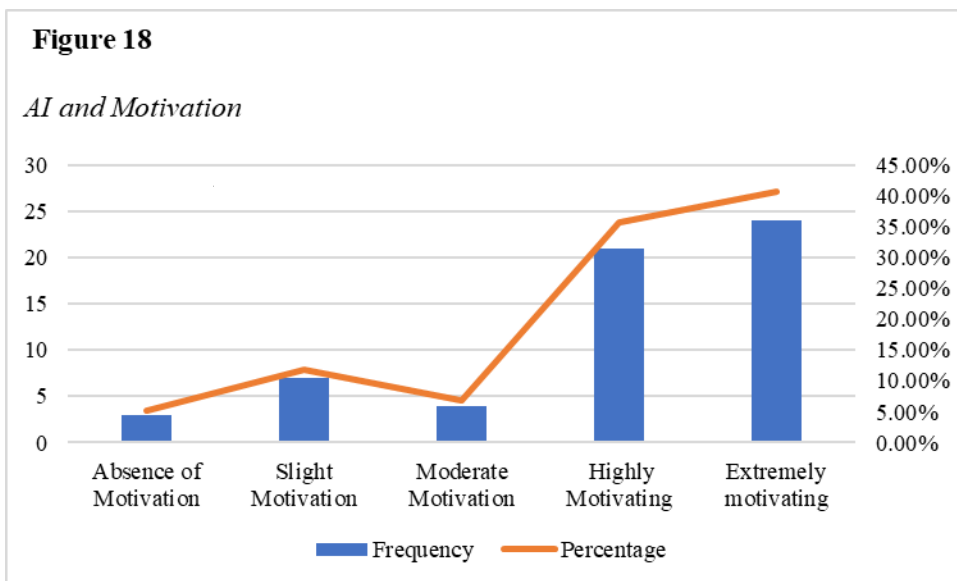
**Figure 17: AI and Students' Engagement**

Results from Table 17 and Figure 17 demonstrate that most respondents 51% on scales 4-5, view that AI has increased their engagement with course material, 28.8% see its moderate help, while 15.3% disagree with the point that AI has supported learner engagement with course material, and only 5.1% strongly disagree with the idea. The majority then see AI as having a positive impact on their engagement.

**Table 18**

*AI and Motivation*

Options	Frequency	Percentage
Absence of Motivation	3	5.1%
Slight Motivation	7	11.9%
Moderate Motivation	4	6.8%
Highly Motivating	21	35.6%
Extremely motivating	24	40.7%



**Figure 18: AI and Motivation**

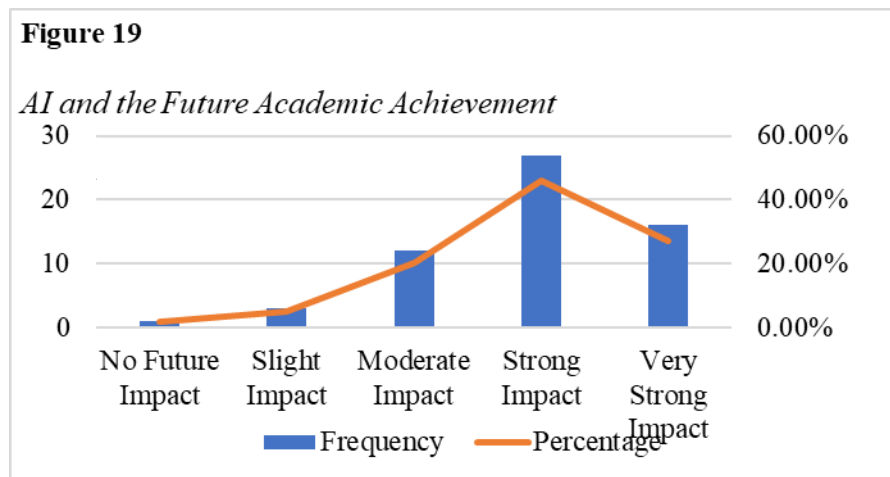
In response to the statement " AI tools have reduced my motivation, (40.7%) of learners strongly disagreed. 35.6% disagreed. While only 6.8% are neutral, 11.9% agree, and 5.1% strongly agree. The skew towards strong disagreement indicates how strongly learners view AI as a motivating tool

**Table 19**

*AI and Future Academic Achievement*

Options	Students' Number	Percentage
No Future Impact	1	1.7%
Slight Impact	3	5.1%
Moderate Impact	12	20.3%
Strong Impact	27	45.8%
Very Strong Impact	16	27.1%

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**Figure 19:** AI and Future Academic Achievement

Data displayed in Table 19 and Figure 19 report students' views regarding the fact that AI can enhance their academic experience to achieve better results in the future. 45.8% of respondents agree positively, and 27.1% strongly agree with the idea. Only 6.8% ratings on scales 1-2 disagree, while 20.3% report a possible moderate impact. Most earners believe AI will have positive effects on their academic careers

#### **4.4.5. Results of the teachers' interview**

Regarding teachers' responses, when they were asked about whether students focus during lectures, the five (05) teachers reported remarks about nowadays students' lack of concentration during lecture time, with attendance issues. They justify such issues by the constant influx of notifications and the different digital distractions, and by the fact that most students stay up late at night while staying connected to social media. Two teachers stated that sometimes, they remarked some students either daydreaming, connecting, or falling asleep during lectures.

Concerning students' use of AI tools, all the interviewed teachers are quite certain that all students use AI applications nowadays. They assert the fact that AI tools are leveraged to accomplish recitations, projects, and exam revision. One teacher asserted that one of his supervised students had used AI to accomplish the whole licence project, after which the student was asked to redo the whole work.

Subsequent to the point about the impact of AI tools on learners' outcomes, three teachers (03) assert that learners may leverage these tools if they organize and plan their work. In that way, only learning outcomes are enhanced with them. They suggest ways to teach students strategies for managing digital distractions and using technology effectively. They also insist on preparing structured learning environments by providing clear learning objectives, structured lessons, and regular breaks to promote engagement and retention.

Two teachers (02) still raise the alarm against students' over-reliance and speak only about their negative effects on understanding, retention, critical thinking, and productivity. They report that AI may help in short-term engagement but harm long-term deep learning.

Lastly, in response to the question which seeks to investigate the teachers' views about the potential impact of AI on learners with focus and attention deficit, 01 teacher preferred that academic practitioners had better find deep life and psychological solutions to the issue of focus and attention rather than depending on AI. 04 teachers claimed that students need more training on AI tools in order to be able to use them responsibly and positively. They see that we cannot and we should not stop learning, using, or leveraging AI tools in the AI era.

## **5 . Discussion**

Based upon the results elicited by the questionnaire and the interview to get insightful understanding of students' as well as teachers perceptions regarding the impact of AI on the academic achievement of learners who have difficulties to maintain sustained attention, it is educed – through a Likert scale (1-5) - that a high proportion of students are suffering from attention and focus issues at the institute of electrical and electronic engineering at M'hammed Bouguerra university, Boumerdes. The findings obtained showed that respondents have a tendency to be easily distracted, which would negatively impact their academic outcomes

Regarding the reasons behind distraction issues, many students reported quitting academic tasks before completion due to interfering elements, such as social media, daydreaming, personal affairs, or multitasking. Time spent on studying and the tendency to multitask were evaluated, indicating a correlation with attention issues. In support of this view, Rioja et al. (2023) reported a negative link between media multitasking and attention issues.

Learners evaluated the effect of AI on a Likert scale, showing a skewness towards positive views. Responses indicated that AI has enhanced students' learning experiences by allowing them to learn at their own pace, improving their understanding of course material, boosting motivation and engagement, and providing timely feedback. In support of this view, Holmes et al. (2019) argue that AI will have a significant impact on the education industry and society more broadly, enabling novel and powerful methods of teaching and learning. Moreover, Vieriu et al. (2025) assert that AI tools can improve retention rates, enhance conceptual mastery, increase student engagement, and reduce cognitive overload.

Positive views can be attributed to the fact that students perceive technology as relevant and exciting. The innovative nature of AI tools can captivate students' attention and

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stimulate their intrinsic motivation by offering novel and interactive experiences that make learning more enjoyable and engaging. This view is corroborated by Bester and Brand (2013), who assume a high positive relationship between motivation and concentration, as well as moderate to high positive correlations between attention, concentration, and motivation. When leveraging new technologies, students may have more time to focus on higher-level thinking, analysis, and creativity.

Despite indicating the potential of AI to enhance the learning experience of students with attention and focus deficits, teachers still fear over-reliance and other ethical issues. Teachers' fear of students' AI overreliance can be attributed either to being stuck in traditional teacher-centered approaches or to human nature's tendency to fear the unknown. This aligns with the view of Giannini (2023), who states that AI applications that generate human-like language raise fundamental questions that concern education but spread far beyond: How will this technology change notions of who we are as humans? How will it reframe our understanding of human intelligence? How will it impact our relationships with each other?

Teachers urge finding deep social, psychological, and lifelong solutions to the issues of focus and attention. They advocate for organizing and planning AI applications through reasonable integration in institutions to tailor learning experiences to meet individual needs. Moreover, teachers state that AI may help in short-term engagement but harm long-term deep learning. They share the same worry expressed by Giannini (2023), as generative AI tools have been integrated into education in the absence of checks, rules, or regulations.

Indeed, the inclusion of AI tools within the educational landscape has become inevitable. UNESCO encourages countries to prioritize the principles of inclusion, equity, quality, and, most vitally, safety when utilizing AI tools for education. This is in line with the commitments countries have made as part of the Sustainable Development Agenda and, more recently, during the 2022 Transforming Education Summit, the largest gathering of the international education community in a decade.

### **Conclusion**

The current study attempts to investigate teachers' and students' perceptions regarding the role of AI in enhancing the learning experience of learners with focus and attention problems. The study is premised that a good number of students are suffering from a lack of concentration during study time and that AI tools may constitute a good solution for them to study at their own pace.

The study has been carried out through a mixed-methods approach to data collection and data analysis. The results obtained revealed that students face various challenges when trying to keep focused attention. Teachers attribute these difficulties to social media and lack

of sleep. The results have provided valuable insights into how AI tools are perceived and utilized by students with attention and focus issues. By analyzing learners' responses, educators and researchers can better understand the role of AI in supporting academic achievement and address specific challenges faced by these students.

Both teachers and learners must be trained to use these tools effectively. What is even more important is to train learners to report honestly all AI tools used to accomplish tasks, to ensure academic integrity. Moreover, educational practitioners must address learners' focus and attention to help them achieve better results. They must encourage students to engage in physical exercise, to set SMART goals, and to implement strategies such as mindfulness and meditation, or to engage in learning following the Pomodoro technique, i.e., study in focused 25-minute intervals, followed by 5-minute breaks to enhance focus and attention. This will provide support for learners to develop effective time management skills and foster a learning environment that encourages students to stay disconnected from the digital world.

Furthermore, educators must seek ways to integrate technology more intentionally and in a balanced manner into teaching and learning environments to enhance the learning experience. For instance, to ensure effective AI integration in the classroom, teachers must learn the basics of AI and establish clear guidelines for its use. Meanwhile, they have to encourage critical thinking by evaluating AI-generated content and assessing AI tools for accuracy, bias, and suitability. For people with focus and attention deficit, assistive technologies such as text-to-speech and speech-to-text tools, as well as mind-mapping tools, can help.

However, despite the possible contributions of the current study to understanding focus and attention issues among university students and the potential impact of AI tools on them, the study still has limitations. While the sample provided a valuable starting point for understanding the experiences and perceptions of individuals actively engaging with AI, it may not be representative of the broader population. To understand in depth how AI affects students with focus and attention issues, long-term, multi-institutional studies must be conducted. These could provide insights into the potential benefits and drawbacks of AI use for the academic performance of people with attention and focus deficits.

## References

1. Achili, N., & Zerrouki, N. (2024). Using artificial intelligence in Algerian higher education: Opportunities and challenges from teachers' perspectives. *Atras Journal*, 5(Special Issue), 541-556. <https://doi.org/10.70091/atras/AI.34>

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2. Aliouche, M., & Mezghich, D. (2022). Meeting students' needs via artificial intelligence: Case of third-year English students at Barika University Center, Si El Haoues, Barika, Algeria.
3. Alkinani, E. A. (2021). Factors affecting the use of information communication technology in teaching and learning in Saudi Arabia universities. *Psychology and Education Journal*, 58(1), 1012-1022. doi:10.17762/pae.v58il.849.
4. Berridge, K. C., & Kringelbach, M. L. (2008). *Affective neuroscience of pleasure: Reward in humans and animals*. *Psychopharmacology*, 199(3), 457–480. <https://doi.org/10.1007/s00213-008-1099-6>
5. Bester, G., & Brand, L. (2013). The Effect of Technology on learner Attention and Achievement in the classroom. *South African Journal of Education*, 33(2), 1-15.  
<http://www.sajournalofeducation.co.za>
6. Carr, N. (2020). *The shallows: What the internet is doing to our brains*. W.W. Norton & Company.
7. Eysenck, M. W., Derakshan, N., Santos, R., & Calvo, M. G. (2007). Anxiety and cognitive performance: attentional control theory. *Emotion (Washington, D.C.)*, 7(2), 336–353.  
<https://doi.org/10.1037/1528-3542.7.2.336>.
8. Eysenck, M. W. (2009). *Fundamentals of psychology*. Psychology Press.
9. Hidi, S., & Renninger, K. A. (2006). The four-phase model of interest development. *Educational Psychologist*, 41(2), 111-127. [https://doi.org/10.1207/s15326985ep4102\\_4](https://doi.org/10.1207/s15326985ep4102_4)
10. Hinkley, T., Brown, H., Carson, V., & Teychenne, M. (2018). Cross-sectional associations of screen time and outdoor play with social skills in preschool children. *PLoS one*, 13(4), e0193700.  
<https://doi.org/10.1371/journal.pone.0193700>
11. Gallen, C. L., Schaerlaeken, S., Younger, J. W., Anguera, J. A., & Gazzaley, A. (2023). Contribution of sustained attention abilities to real-world academic skills in children. *Scientific Reports*, 13(1), 2673. <https://doi.org/10.1038/s41598-023-29427-w>
12. Garg, S., & Sharma, S. (2020). Impact of artificial intelligence in special needs education to promote inclusive pedagogy. *International Journal of Information and Education Technology (IJJET)*, 10(7), 523–527. <https://doi.org/10.18178/ijiet.2020.10.7.1418>
13. Giannini, S. (2023). AI and the future of learning: Promises and perils. UNESCO Global Education Meeting. <https://unesco.org/example-url>

14. Gordon, M., Mettelman, B. B., & Irwin, M. (1994). Sustained attention and grade retention. *Perceptual and Motor Skills*, 78(2), 555–560. <https://doi.org/10.2466/pms.1994.78.2.555>
15. Holmes, W., Bialik, M., & Fadel, C. (2019). Artificial intelligence: Promises and implications for teaching and learning. Center for Curriculum Design.
16. Ishak, W. W., Ugochukwu, C., Bagot, K., Khalili, D., & Zaky, C. (2012). Energy drinks: psychological effects and impact on well-being and quality of life-a literature review. *Innovations in clinical neuroscience*, 9(1), 25–34.
17. James, W. (1890). *The principles of psychology* (Vol. 1). Harvard University Press.
18. Kerma, M. (2024). The impact of artificial intelligence on learners' critical thinking. *ATRAS*, 6(1), 125-136.
19. Luckin, R., et al. (2016). *Intelligence unleashed: An argument for AI in education*. Pearson.
20. Madigan, S., Browne, D., Racine, N., Mori, C., & Tough, S. (2019). Association between screen time and children's performance on a developmental screening test. *JAMA Pediatrics*, 173(3), 244–250. <https://doi.org/10.1001/jamapediatrics.2018.5056>
21. Nazari, N., Shabbir, M. S., & Setiawan, R. (2021). Application of artificial intelligence-powered digital writing assistant in higher education: Randomized controlled trial. *Heliyon*, 7(5). <https://doi.org/10.1016/j.heliyon.2021.e0701>.
22. Olney, A. M., Risko, E. F., D'Mello, S. K., & Graesser, A. C. (2015). Attention in educational contexts: The role of the learning task in guiding attention. In J. Fawcett, E. F. Risko, & A. Kingstone (Eds.), *The handbook of attention* (pp. 623–642). MIT Press.
23. Rioja, K., Cekic, S., Bavelier, D., & Baumgartner, S. E. (2023). Unraveling the Link Between Media Multitasking and Attention Across Three Samples. *Technology, Mind, and Behavior*, 4(2: Summer 2023). <https://doi.org/10.1037/tmb0000106>
24. Shah, S. M. H., & Saleem, S. (2015). Level of attention of secondary school students and its relationship with their academic achievement. *Journal of Arts & Humanities*, 4(5), 92-106. <http://www.theartsjournal.org/index.php/site/index106>
25. Sharma, S., Tomar, V., Yadav, N., & Aggarwal, M. (2023). The impact of AI-based special education on educators and students. *Journal of Special Education Technology* DOI: 10.4018/979-8-3693-0378-8.ch003

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of Students with Focus and Attention Issues.*

26. Stepan, M. E., Fenn, K. M., & Altmann, E. M. (2019). Effects of sleep deprivation on procedural errors. *Journal of Experimental Psychology: General*, 148(10), 1828-1833.  
<https://doi.org/10.1037/xge0000495>
27. Tomlinson, C. A. (2001). *How to differentiate instruction in mixed-ability classrooms* (2nd ed.).
28. Venkatesh, V., Brown, S.A., and Sullivan, Y.W. "Guidelines for Conducting Mixed-methods Research: An Extension and Illustration," *Journal of the AIS* (17:7), 2016, 435-495.  
<https://doi.org/10.17705/ljais.00433>
29. Vieriu, A. M., & Petrea, G. (2025). The impact of AI on students' academic development. *Education Sciences*, 15(3), 343. <https://doi.org/10.3390/educsci15030343>
30. **World Health Organization. (2011).** *World report on disability*.  
<https://www.who.int/publications/i/item/9789241564182>