The Impact of Artificial Intelligence on the Quality of Saudi Translators' Performance

أثر استخدام الذكاء الصناعي في تحسين جودة الترجمة لدى المترجمين السعوديين

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Abstract:

The current research aims to investigate the impact of artificial intellgance on the translation quality of Saudi learners' performance in Saudi Universities. It also seeks to explore the Saudi translators' attitudes towards using artificial intelligence in the translation process. Therefore, the study will use a mixed approach: quantitative and qualitative. A closed ended questionnaire was used to explore the Saudi students' attitudes towards using artificial intelligence tools in translating texts. On the other hand, a translation test was utilized to evaluate the impact of AI on students' translation performance. Both the quantitative and qualitative data of the questionnaire and the testhave been investigated by descriptive statistics. The results indicated that AI-based translation tools had increased the experimental group's proficiency and their translation performance surpassed that of the control group .

Keywords: Artificial intelligence;quality in translation performance; human translators;ChatGPT;translators' attitudes

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أثر استخدام الذكاء الصناعي في تحسين جودة الترجمة لدى المترجمين السعوديين

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الملخص

تهدف الدراسة الحالية إلى التحقيق في أثر استخدام الذكاء الصناعي في تحسين جودة الترجمة لدى المترجمين السعوديين. كما تسعى إلى استكشاف مواقف المترجمين السعوديين تجاه استخدام الذكاء الصناعي في عملية الترجمة؛ لذا، استخدمت هذه الدراسة نهجاً مختلطاً: كمياً ونوعياً، ولهذا الغرض تم تطبيق استبيان مغلق لدراسة توجه الطلبة السعوديين في استخدام أدوات الذكاء الصناعي في ترجمة النصوص. ومن ناحية أخرى، أجري امتحان في الترجمة لتقييم تأثير الذكاء الصناعي على أداء عملية الترجمة لدى الطلبة. وقد خضعت البيانات الكمية والنوعية التي تم جمعها من الاستبانة والامتحان للتحليل والدراسة. وقد أشارت النتائج إلى أن أدوات الترجمة القائمة على الذكاء الصناعي زادت من كفاءة المجموعة التجريبية على حساب أداء المجموعة الضابطة.

الكلمات الرئيسية: الذكاء الصناعي؛ الجودة في أداء الترجمة؛ المترجمين البشريين؛ تشات جي بي تي؛ مواقف المترجمين

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1. Introduction

Global firms are competing hard for leadership in the field of artificial intelligence in the third millennium, believing that one day a machine will take the position of a human being to rule the future of humankind. Since various firms have attempted to produce artificial intelligence-operated robots to replace human labour in the medical, engineering, technological, and financial fields, such dreams have become a seemingly realistic prospect. The new boom in the artificial intelligence industry, which the "OpenAI" company brought about by releasing the "ChatGPT" chatbot, has sparked widespread controversy about its enormous capabilities in generating accurate and correct information. It makes it worthwhile to mention that the influence of these companies extended to written texts and scientific research. Numerous researchers invested their time in studying strange human behaviour over a long period. Under the slogan,our vision determines our world, our dreams will bring our future in the context of a contradictory world and the height of a dramatic technological revolution that significantly changed our perception of the universe. One of the forthcoming future revolutions that are strongly emerging is

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artificial intelligence. Since the phrase "artificial intelligence" was first used in the 1950s, in the summer of 1956, at the Dartworth University artificial intelligence conference (Cordeschi, 2007).Since then, according to data from the World Intellectual Property Organization (WIPO), academics and developers have published about 1.6 million papers on AI and submitted nearly 340,000 patent applications(Castelluccio, 2019).

From a technical perspective, the evolution of machine translation and computer-assisted translation tools have played a crucial role in enhancing service quality over time, leading to considerable time and effort savings. In a recent development, ChatGPT, an artificial intelligence tool focused on text, has been launched to replicate human behavior. This release marks the latest advancement in the ongoing effort to emulate human actions. It serves as a genuine assessment of human capability and poses a challenge for humanity.

ChatGPT stands out as one of the most significant applications of artificial intelligence. Over the past couple of years, numerous studies have delved into its utilization in language learning. Some of these investigations took a general approach to the topic. For instance, Farrokhnia et al (2023) delineated the strengths and weaknesses of ChatGPT in educational contexts. Their findings highlighted its robust natural language processing capabilities, capacity for self-improvement, and ability to deliver personalized, real-time responses as strengths. However, they also identified weaknesses such as a lack of profound comprehension, challenges in assessing response quality, potential biases and discriminatory tendencies, and limitations in fostering higher-order thinking skills.

Ali et al. (2023) endeavored to examine the impact of ChatGPT on English language learning. Their results suggested that ChatGPT generally serves as a motivating factor for learners, particularly in enhancing reading and writing proficiencies. Meanwhile, Bin-Hady et al. (2023) explored various dimensions through which ChatGPT supports students in their English language learning journey. Their key discovery emphasized ChatGPT's role in fostering language skills development and furnishing students with feedback on their language usage.

In another study, Kohnke et al. (2023) tested the significance of ChatGPT in language education. They concluded that ChatGPT emerges as a valuable tool with substantial potential for facilitating language learning experiences. Additionally, they proposed preliminary concepts on how ChatGPT could improve language instruction and support language learning, providing examples of learning tasks suitable for teachers and learners new to ChatGPT.

Other research delved into the impact of ChatGPT on specific aspects of language learning. For example, Yan (2023) conducted a study to observe how students engaged with ChatGPT in writing classrooms and reflected on their experiences. The results highlighted the benefits and potential usefulness of integrating this tool into second language (L2) writing instruction. In another study,

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Qasem et al. (2023) investigated the effects of using a chatbot for learning English for Specific Purposes (ESP) in online classrooms during the COVID-19 pandemic. They explored how the Dialogflow chatbot could serve as an effective and interactive platform to aid ESP learners in vocabulary acquisition. Their findings demonstrated the significant role chatbots can play in improving ESP vocabulary learning. Additionally, Zhou and Li (2023) examined how incorporating ChatGPT as a supplementary learning tool affected university students' motivation to learn. Although the study revealed a certain influence of ChatGPT on motivation, it also highlighted that students' usage frequency and proficiency were relatively low, indicating a need for further training.

Due to the fact that employing artificial intelligence in translation is still new, researchers have not treated it in much detail. In the last two decades, a number of researchers have reported on using CAT tools in the translation process. However, artificial intelligence, in general, and ChatGpt, in particular, is something different. Additionally, very few researchers have been conducted to examine the students' perceptions on using AI-based tools in translating texts. And here comes the need for such a study.

The present study investigates the practical implications of artificial intelligence by assessing its efficacy in producing high-quality written content. Specifically, it aims to explore students' perspectives on utilizing AI for translation purposes. Additionally, the study explres the Saudi students' perceptions towards using artificial intelligence tools in their translation tasks. Consequently, the study aims to answer the following questions:

1) How do Saudi students feel about employing artificial intelligence in translation tasks?
2) How does the use of artificial intelligence tools affect the translation proficiency of Saudi students?

2. Literature Review

The continual advancements in artificial intelligence have had a profound impact on translation quality. Through sophisticated algorithms and machine learning, AI has revolutionized the way translations are performed, resulting in unparalleled accuracy and speed. This has signi|cantly reduced human errors and improve overall translation quality, leading to more ezcient cross-culturalcommunication and global understanding.With news of developments in speech recognition, computer vision, and text understanding making their way into a variety of regularly used products and services, artificial intelligence has emerged as a hot topic in the media (Beam &Kohane 2016). The usage of machine translation as artificial intelligence (AI) is growing, and Google Translate is the most widely used translation service worldwide (GT). The use of translation machine applications has grown as a result of their capabilities matching human translation (Hasyim et al 2021).

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3. Artificial Intelligence

The use of artificial intelligence (AI) and algorithmic decision making are significantly influencing our everyday existence.These systems are extensively used in several critical applications such as healthcare, business, government, education, and justice, propelling us towards a more algorithmic society. Nevertheless, despite the many benefits of these systems, they may sometimes result in damage to both users and society, as noted by Kaur et al. (2022) and Eyüp and Kayhan (2023).

Artificial Intelligence (AI) refers to the simulation of human intelligence in machines that can perform tasks that typically require human intelligence. In the context of translation, AI utilizes machine learning algorithms to analyze and understand linguistic patterns, improve translation accuracy, and reduce human errors. By harnessing the power of AI, translation quality has been signicantly enhanced, ensuring more precise and effective cross-cultural communication.

Artificial Intelligence (AI) refers to the use of computers to simulate intelligent behavior with minimum human interaction. The advent of robots is often regarded as the point at which AI began.The phrase originates from the Czech word "robota," which refers to biosynthetic machines used for compulsory work (Hamet & Tremblay, 2017).

Artificial intelligence (AI) plays a crucial role in enhancing translation quality. AI technologies like machine learning and neural networks enable automated translation systems to learn from vast amounts of data, resulting in more accurate and contextually appropriate translations.These AI-powered tools can analyze patterns, idiomatic expressions, and cultural nuances, ensuring a higher level of precision and fluency in translated texts.

Therefore, Artificial Intelligence surpasses human intelligence and is capable of managing tasks just as well as humans.Regardless, any program might encounter a sufficiently complex environment that it is unable to handle (Dobrev, 2012).

3.1. Machine Translation (MT)

The acronym MT stands for machine translation, which is automated translation. It should not be confused with computer-aided translation (CAT), machine-aided human translation (MAHT), or interactive translation. It is the process of translating a text from one natural language like English to another using a computer software (Okpor, 2014). Machine translation relies on inputs, data that has already been stored, and data that grows daily as a result of program users. As a result, it is noted that machine translation's daily advancement and improvement. MT, or automated text translation from one human language to another, was among the earliest non-numerical uses of contemporary digital computers. A period of naive hope and eventual disillusionment characterized its early years in the wake of World War II, MT's widespread usage by the first decade of the new century(Kenny, 2018).

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Machine translation is the process of constantly generating interconnected, similar, and evolving data that keep pace with new terminology and improves over time. In order to generate an internal representation, a machine translation (MT) system must first analyze the input in the source language. The target language-appropriate version of this representation is altered and transmitted. Finally, the target language output is produced. At its most basic, machine translation (MT) replaces words in one natural language with words in another (Okpor, 2014).

3.2. *Neural Machine Translation (NMT)*

Typically, an Neural Machine Translation (NMT) model consists of two parts: A decoder network generates the translation after an encoder network translates the original phrase into a real-valued vector. This procedure is comparable to human translation. The NMT model "reads" the entire source sentence first. Then, it creates the target sentence word for word based on its comprehension of the language. In contrast to earlier techniques like Rule-based machine translation (RBMT) and Statistical Machine Translation (SMT), NMT does not require features and rules that were created by humans. NMT is an end-to-end system that uses the training corpora to directly learn translation and semantic representation skills. NMT has become the most popular approach in the MT community because of these benefits (Wang, et al., 2022).Neural machine translation (NMT), which tackles translation with a single neural network (Stahlberg, 2020).

It is an approach to machine translation that utilizes a large neural network. Unlike traditional methods, which often rely on rule-based or statistical approaches, NMT revolutionizes translation by employing a single neural network to directly transform a source sentence into its target language counterpart. This paradigm change has been extensively embraced by industry titans like Google, Microsoft, and Facebook and has resulted in notable advancements in automated translation services. In essence, NMT represents a departure from the log-linear model combination and embraces the power of deep learning to achieve more accurate and context-aware translations(Stahlberg, 2020).

Neural Machine Translation (NMT) has made significant strides in recent years. Notably, the NMT model demonstrates the ability to reconstruct the input source sentence from the hidden layer of the output target sentence. This breakthrough represents a remarkable advancement in the field of machine translation, enabling more accurate and context-aware language conversion (Tu, et al., 2017).

3.3. Human Translation and AI-based Translation

Although machine translation is efficient and fast, human translation remains superior in terms of accuracy and comprehension of cultural subtleties. Human translators excel in grasping context, cultural nuances, and idiomatic expressions, resulting in translations that are more precise and contextually fitting

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(Pym, 2010). The interpretative skills of human translators enable them to accurately discern meaning and context, guaranteeing translations that are not only linguistically correct but also culturally considerate. Consequently, a blend of both machine and human translation is the ideal strategy for attaining translations of the highest quality.

Despite the advantages of human translation, Artificial Intelligence (AI) can significantly enhance the translation process. AI-powered translation tools can improve productivity, reduce costs, and handle large volumes of content. Additionally, AI algorithms can continually learn and improve, resulting in more accurate translations overtime. With the right balance of AI and human expertise, we can achieve high-quality translations efficiently and effectively.

While AI has revolutionized translation, it also presents challenges. AI translation can struggle with context, nuanced meanings, and cultural references, leading to inaccuracies. Language-specific challenges such as idioms and dialects can be difficult for AI to understand. Additionally, ethical concerns arise, as AI may replace human translators. Balancing the benefits and limitations of AI in translation requires continuous investment in research and development. Besides, the future prospects of artificial intelligence are both exciting and concerning. On one hand, AI can enhance translation speed and accuracy, enabling real-time translation in various industries. On the other hand, concerns arise about potential job displacement and the loss of nuanced linguistic understanding. Finding a balance between AI's capabilities and human expertise will determine the future quality and accessibility of translation services, Moneus and Sahari (2023).

As we embrace the possibilities of AI-aided translation, it is important to address the ethical considerations. The rise of automation threatens job security for human translators. We must carefully consider the consequences and ways to ensure the fair treatment of both human translators and the quality of translation. Striking a balance between efficiency and maintaining the human touch is essential for the future of translation.

Over the recent years, numerous studies have been undertaken to juxtapose human translation and AI-driven translation. Alowedi and Al-Ahdal (2023) delve into the disparities between machine translation and human translation, specifically in the context of translating Arabic poems into English. Through a critical linguistic analysis that compares human translation to machine translation, it is highlighted that the latter falls short in capturing the subtleties of the poem, such as figurative language, historical allusions, and the poem's genre. Wang (2023) conducts an experiment aimed at delineating the pros and cons of AI translations versus human translations. The findings underscore the profound impact of AI development on the translation industry.

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3.4. Quality of Translation (QT)

Translation quality is of utmost importance in today's globalized world. Accurate and culturally sensitive translations are essential for effective communication across international boundaries. A high-quality translation ensures that the original meaning and intent of the message are preserved, fostering understanding and building trust between different language speakers. With the help of artificial intelligence, translation quality can be further improved, leading to more successful cross-cultural interactions. Therefore, Translation quality assessment (TQA) is a complex and demanding activity that involves evaluating correctness, dependability, repetition, and cost. Translation quality encompasses the acquisition of high-quality texts, the ability to anticipate the quality of an unseen translated text, the elimination of phrases that do not meet the required standards for further processing, and the selection of the most superior translation among many systems, Han et al. (2021).

AI plays a pivotal role in the improvement of the Quality of Translation (QT) in shaping the effectiveness of automated language conversion systems. As artificial intelligence (AI) continues to advance, the quest for more accurate, context-aware translations intensifies. NMT models, with their ability to reconstruct input sentences from hidden layers, exemplify this progress. The impact of AI-driven translation extends beyond mere communication—it bridges cultures, facilitates global collaboration, and empowers individuals and businesses alike. As we navigate this linguistic frontier, the pursuit of higher QT remains a driving force, propelling us toward a more interconnected and harmonious world.

4. Methods

4.1. Research Design

This research employs a mixed approach; it combines both qualitative and quantitative research techniques to collect and analyze data. Whereas the quantitative approach is found in the application and analysis of questionnaire, the qualitative approach is represented by the analysis of the translation test. The questionnaire covered many Saudi universities to gather more various data about attitude of Saudi students and impact of Artificial intelliegence on Translation quality. Meanwhile, the quantitative component involves the collection of numerical data using a closed questionnaire. The qualitative approach is obvious in the comparison between the responses of both control and experimtnal groups.

4.2. Participants

The participants in this study consisted of (94) translation students, randomly selected, under their consent, from level 8 students at theTranslation or English Departments in (9) Saudi universities: King Khalid University, Jazan University, Imam Mohammad Ibn Saud Islamic University, Al Qassim University,

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Arab Open University, King Saud University, Princess Norah bint Abdurhman University, Najran University, Taibah University, and others. The 94 students effectively participated in the questionnaire, which was designed to nswer the first research question. Out of the 94 students, 40 students were randomly selected for thesecond research tool, the translation test. The 40 students have been divided into two groups: control (20 students) and experimental (20 students). Both the test and the questionnairetook place during the second semester of the academic year 2023/2024. The adoption of level 8 was due to the students' completion of severaltranslation courses. Therefore, it was assumed that they would be more familiar with the different translation techniques, including the AI-based ones.Every participantwas anticipated to have completed seven semesters of English coursework either in the English or translation department, along with six years of English education at intermediate and secondary schools.

4.3. Measures

In the current research, two research tools were used to collect data: a questionnaire and a translation test. The questionnaire was designed to explore the Saudi learners' attitudes towards using artificial intelligence tools in their translation tasks. The questionnaire contained 15 statements and it was directed to level 8 students at theTranslation or English Departments in (9) Saudi universities. The 15 statements of the questionnaire were taken from the scale of general attitudes towards artificial intelligence data, developed by Schepman and Rodway (2020). The statements were also modified and adopted to coincide with the focus of this research in AI-based translation.The translation test, on the other hand, was built to investigate the impact of AI translation tools on the students' translation performance. The test consisted of one translation task in which students should translate a legal text from English into Arabic. The test was submitted to both to the control and experimental group students.

4.4. Procedure and Data Analysis

To answer the first research question, the questionnaire was sent to the 94 translation students in the nine universities. The students' responses to the questionnaire were treated statistically by using descriptive analysis, which covered the main features of a dataset, such as means, standard deviations, frequencies, and percentiles. To answer the second question, the translation test has been submitted to the control group students; they were instructed to translate the English text into Arabic manually, without using any technological tool, including Google translate or any of the artificial intelligence tools. Then the same test has been formulated in a Google form and sent to the experimental group students, and they were instructed to use ChatGPT when translating the text into Arabic. The descriptive analysis was used to compare the data collected from the two groups. This analysis included means, standard deviation, and the paired samples T-Test. The analysis was based on five criteria: accuracy performance, competency performance, content

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performance, language performance, and style performance. The analysis ends with comparing the total performance of the two groups.

5. Results

This section provides the findings of the study that were generated from data analysis and its interpretation. This section started with data screening which focuses on the way of coding and checking the missing data on SPSS, sample profile which is data about the respondents or subjects' characteristics (in tabular and/or graphical forms), and descriptive statistics of the items of each variable used in the study (means, and standard deviations).

5.1. Results of the First Question:How do Saudi students feel about employing artificial intelligence in translation tasks?

To answer the first question, the students' reponses to the questionnaire were analyzed by using the decriptive analysis.This section provides the findings of the study that were generated from data analysis and its interpretation.

5.2. Sample Profile (Gender Frequency)

Gender was the once demographic variable that describes the gender of participants responding to the survey instrument as it is shown in Table (1) and Figure (1). The frequency distribution–Gender of respondents shows that the greatest numbers of the respondents were females, as the study indicates that 64.5% of the respondents (60) were females while the remaining of 35.5% with (34) respondents were males.

Table (1) Frequency Distribution–Gender of Respondents

Gender	Frequency	Percent
Male	34	35.5%
Female	60	64.5%
Total	**94**	**100.0%**

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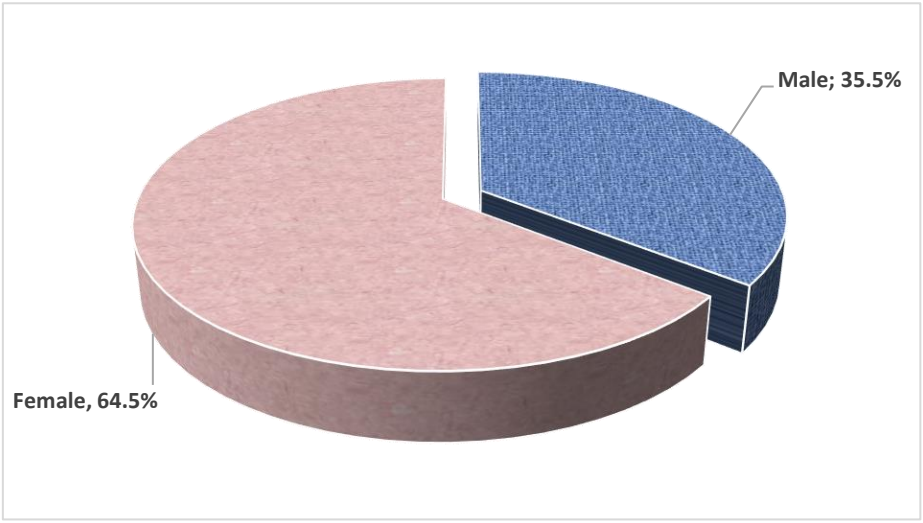

Figure (1) Frequency Distribution–Gender of Respondents

5.2.1. Sample Profile (University Frequency):

University was the second demographic variable which describes the respondents university to the survey instrument. These data are presented in following Table (2) and Figure (2).

The result of the university distribution illustrated that the greatest number of the respondents was in (Jazan University) with a total number of (21) respondents and represent (22.6%) of the total respondents. Then another university group followed by respondents (Imam Mohammad Ibn Saud Islamic University) with a total number of (18) respondents and represent (19.4%) of the total respondents. A total number of (12) respondents or 12.9% have (Al Qassim University) and (Others), Arab Open University with total number (9) respondents and represent (9.7%). The last group was with (King Saud University), (Princess Norah bintAbdurhman University), (Najran University) and (Taibah University) with (4) respondents for each University and represents (3.2%) of the total respondents.

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Table (2) Frequency Distribution–University of Respondents

University	Frequency	Percent
King Khalid University	6	6.5%
Jazan University	21	22.6%
Imam Mohammad Ibn Saud Islamic University	18	19.4%
Al Qassim University	12	12.9%
Arab Open University	9	9.7%
King Saud University	4	6.5%
Princess Norah bintAbdurhman	4	3.2%
Najran University	4	3.2%
Taibah University	4	3.2%
Others	12	12.9%
Total	**94**	**100%**

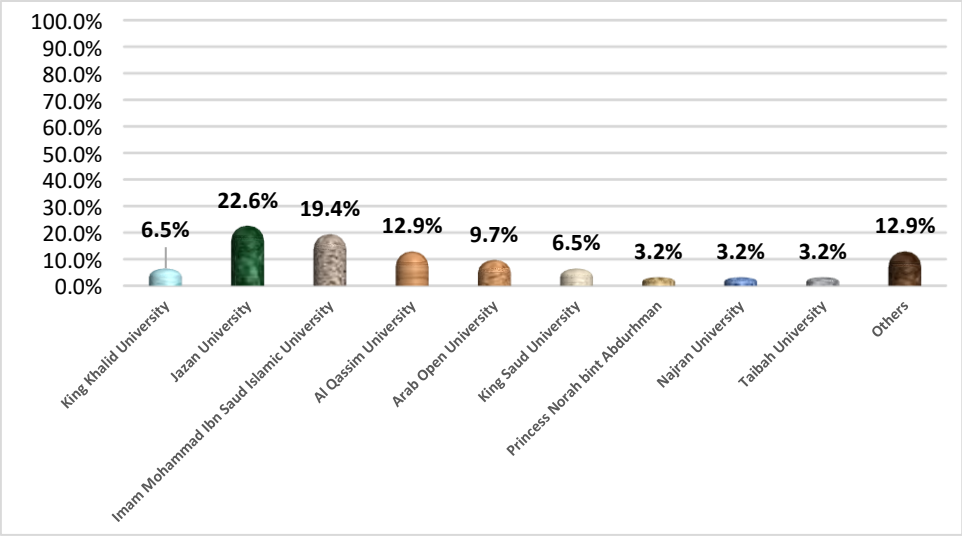

Figure (2) Frequency Distribution–Universityof Respondents

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5.2.2. Reliability:

The reliability test is conducted for measuring the reliabilities of the different variables, either dependents or independents, included in this study. Reliability analysis measures the internal consistency of a group of items which accordingly reflects the goodness of the measure used in this study. Cronbach's alpha coefficient (α) is the most frequently used index of reliability which reflects the average correlation among the items that constitute a scale. The results obtained from performing the reliability analysis can be shown in Table (3).

Table(3) Reliability Analysis for Variables

Number of Items	Variable	Alpha	Alpha½
5	General Attitudes	85.5	92.5
5	Expected Benefits	70.4	83.9
5	Expected Drawbacks	72.2%	85.0
15	**All items**	**83.7**	**91.5**

The above table shows the stability of the data collection tool and the credibility of answers, that the values of the Cronbach's alpha coefficient (α) for data collecting scale stability is 83.7% and the credibility of the answers Alpha ½is 91.5% which means a high degree of the credibility of the answers, and this means that the sample is homogeneous in responding to the questionnaire and greatly can depend on the results and generalize it to the research community.

5.2.3. Descriptive Statistics

The Descriptive measurable analysis is concerned about numerical illustration of a specific observed gathering and any similitude to those out of the gathering can't be underestimated. The data depict one gathering and that one gathering only (Singh, 2006). Table 4.4 shows how the verbal interpretation for SPSS output calculated results of the Mean values in the descriptive statistics.

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Table (4) Verbal Interpretation

How to calculate the verbal interpretation		
If the average verbal interpretation	**Verbal appreciation**	**If the ratio**
Less than 1.8	Completely disagree	Less than 36%
From 1.8 and less than 2.6	Disagree	From 36% and less than 52%
From 2.6 and less than 3.4	Neutral	From 52% and less than 68%
From 3.4 and less than 4.2	Agree	From 68%and less than 84%
From 4.20 to 5	Completely agree	From 84% to 100%

5.2.3.1. General Attitudes:

General Attitudes were measured by 5 items. The results of the descriptive statistics of the General Attitudes are presented in Table (5). The results show that the (GA2) paragraph (The applications of AI-based translation are so beneficial) got the first rank with a mean of 3.68, and standard deviation of (0.909). The highest percentage (73.6%) of respondents is agree. The (GA4) item (The translation of an artificially intelligent agent would be better than that of a human translator) ranked last with a mean of (2.52) and standard deviation of (0.996) with the degree 50.4%. The overall average of the variable is (3.32) and standard deviation is (0.801) with the degree 66.4% (Neutral).

Table (5) Descriptive Statistics General Attitudes

Rank	N	Items	Mean	Std. Deviation	Percent	Verbal Result
1	GA2	The applications of AI-based translation are so beneficial.	3.68	.909	73.6%	Agree
2	GA1	Students of translation should use Artificial Intelligence in their translation tasks.	3.61	.989	72.2%	Agree
3	GA3	Using Artificial Intelligence applications is exciting.	3.52	1.061	70.4%	Agree
4	GA5	I am impressed by what Artificial Intelligence can do in translation.	3.29	1.071	65.8%	Neutral
5	GA4	The translation of an artificially intelligent agent would be better than that of a human translator.	2.52	.996	50.4%	Disagree
General Attitudes			**3.32**	**.801**	**66.4%**	**Neutral**

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5.2.3.2. Expected Benefits

The "Expected Benefits" was measured by 5 items. The results of the descriptive statistics of the expected benefits are presented in Table (6). The results show that the (EB4) item (Many translators will benefit from a future full of Artificial Intelligence) got the first rank with a mean of 3.45, and standard deviation of (0.888). The highest percentage (69%) of respondents is agreed. The (EB5) paragraph (AI-based translation can be dangerous) ranked last with a mean of (3.16) and standard deviation of (0.898) with the degree 63.2%. The overall average of the variable is (3.32) and standard deviation is (0.602) with the degree 66.4% (Neutral).

Table (6) Descriptive Statistics Expected Benefits

Rank	N	Items	Mean	Std. Deviation	Percent	Verbal Result
1	EB4	Many translators will benefit from a future full of Artificial Intelligence.	3.45	.888	69.0%	Agree
2	EB1	Artificial Intelligence can provide new economic opportunities for translators.	3.35	.915	67.0%	Neutral
3	EB3	Artificially intelligent systems can help translators feel happier	3.35	.839	67.0%	Neutral
4	EB2	Artificial Intelligence can have positive impacts on translators' wellbeing.	3.29	.902	65.8%	Neutral
5	EB5	AI-based translation can be dangerous.	3.16	.898	63.2%	Neutral
Expected Benefits			**3.32**	**.602**	**66.4%**	**Neutral**

5.2.3.3. Expected Drawbacks:

The "Expected Drawbacks" was measured by 5 items. The results of the descriptive statistics of the expected drawbacks are presented in Table (7). The results show that the (ED5) item (Depending only on Artificial Intelligence in translation will make translators suffer in the future) got the first rank with a mean of 3.61, and standard deviation of (1.022). The highest percentage (72.2%) of respondents is agreed. The (ED1) paragraph (Using Artificial Intelligence in translation is sinister) ranked last with a mean of (2.81) and standard deviation of

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(0.703) with the degree 56.2%. The overall average of the variable is (3.15) and standard deviation is (0.554) with the degree 63.0% (Neutral).

Table (7) Descriptive Statistics Expected Drawbacks

Rank	N	Items	Mean	Std. Deviation	Percent	Verbal Result
1	ED5	Depending only on Artificial Intelligence in translation will make translators suffer in the future.	3.61	1.022	72.2%	Agree
2	ED4	I think artificially intelligent systems make many translation errors.	3.55	.961	71.0%	Agree
3	ED2	Translators use Artificial Intelligence unethically.	2.90	.790	58.0%	Neutral
4	ED3	I become afraid when I think about future uses of Artificial Intelligence in translation.	2.87	.991	57.4%	Neutral
5	ED1	Using Artificial Intelligence in translation is sinister.	2.81	.703	56.2%	Neutral
Expected Drawbacks			**3.15**	**.554**	**63.0%**	**Neutral**

5.2.4. Correlation Analysis

The aim of Correlation Analysis is to examine the relationship between variables. In the article research that includes several variables, beyond knowing the means and standard deviations of the dependent and independent variables, the researcher would often like to know how one variable is related to another. Inter correlations analysis indicates the nature, direction and significance of the bi-variate relationship of the variables used in the study. Theoretically, there could be a perfect positive correlation between two variables, which is represented by 1.0 (plus 1), or a perfect negative correlation which would -1.0 (minus 1). While correlation could range between -1.0 and +1.0, the researcher need to know if any correlation found between two variables is significant or not (i.e. if it has occurred solely by chance or if there is a high probability of its real existence).

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Table 4.8 shows that the rules of thumb that need to be used in interpreting the R-value obtained from inter correlation analysis.

Table (8) Interpreting the R-value for Correlations

Relationship	R-value Relationship
Very strong relationship	Above 0.70
Strong relationship	0.50- 0.69
Moderate relationship	0.30- 0.49
Low relationship	0.10- 0.29
Very low relationship	0.01- 0.09

Table (9) shows the correlation analysis between the dependent variable and independent variables. The result of the analysis shows the following:

- There is a very strong relationship between Expected Benefits and General Attitudes (r= 0.790, P= 000) and p-value < p=0.01 level (2-tailed).
- There is not relationship between Expected Drawbacks and General Attitudes (r= 0.237, P= 199) and p-value > p=0.05 level (2-tailed)
- There is not relationship between Expected Drawbacks and Expected Benefits (r= 0.172, P= 356) and p-value > p=0.05 level (2-tailed)

Table (9) Correlation Analysis the influence factors the General Attitudes

Correlations		General Attitudes	Expected Benefits	Expected Drawbacks
General Attitudes	Pearson Correlation	1	.790**	.237
	Sig. (2-tailed)		.000	.199
	N	31	31	31
Expected Benefits	Pearson Correlation	.790**	1	.172
	Sig. (2-tailed)	.000		.356
	N	31	31	31
Expected Drawbacks	Pearson Correlation	.237	.172	1
	Sig. (2-tailed)	.199	.356	
	N	31	31	31

****. Correlation is significant at the 0.01 level (2-tailed).**

***. Correlation is significant at the 0.05 level (2-tailed).**

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The impact of Artificial Intelligence (AI) on translation quality is a subject of growing interest. Researchers have delved into this area by employing questionnaires to gauge the attitudes of various stakeholders, including students, professional translators, and language learners. Here are some key findings:

1) Improved Evaluation Accuracy Over 75% of respondents affirmed that the use of AI in translation quality assessment leads to a significant improvement** in evaluation accuracy. AI models, with their ability to process vast amounts of data, enhance the precision of assessing translated content.
2) Source Text Quality Matters: The quality of the source text significantly influences the accuracy of AI-assisted translation quality evaluation. When the input text is well-constructed and clear, AI systems perform better in producing accurate translations[1].
3) Choice of AI Evaluation Model: More than 61% of participants acknowledged that the type of AI-assisted evaluation model used significantly impacts translation quality assessment. The selection of an appropriate AI model plays a crucial role in achieving reliable evaluations[1].

In summary, while AI models remain significant in enhancing translation quality assessment, the expertise of evaluators and the quality of the source text are equally vital factors. As AI continues to evolve, understanding its impact on translation quality becomes essential for both researchers and practitioners.

5.3. Results of the Second Question: How does the use of artificial intelligence tools affect the translation proficiency of Saudi students?

The second research question dealt with the effect of using artificial intelligence tools on the proficiency of Saudi students' translated texts. To answer this question, the students' responses to the translation test have been analyzed, using the following five performance criteria: accuracy, competency, content, language, and style. The detailed analysis can be shown below:

5.4. Comparison between the control group and the experimental group based on the total performance:

Table 10: Control and experimental groups(the total performance)

Group	Controll Group A n=20		Experimental Group B n=20		Paired Differences	P-value	Sig
	Mean	SD	Mean	SD			
Performance	49.20	15.4	84.95	4.5	-35.750	0.000	***

*** Paired Samples Statistics test, * p value > 0.05, ** p value > 0.01, *** p value ≥ 0.001**

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Table 10 summarizes descriptive statistics for each group, including means, standard deviations, and Paired Samples Test.

The P-value and the significance level between the control group and the experimental group based on the total performance by Paired Samples Test. There were statistically significant differences between the control group and the experimental group based on the total performance. The average total performance of the control group was (49.2) while the average total performance of the experimental group was (84.95).

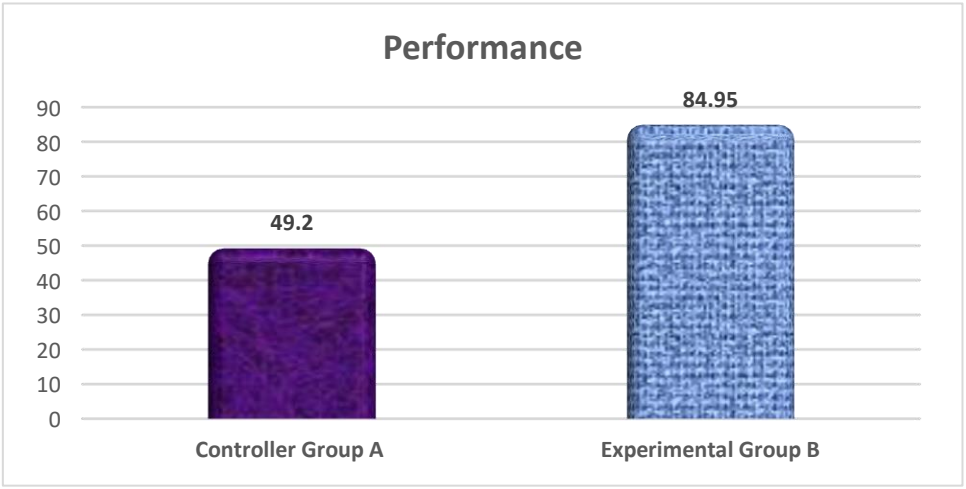

Figure 3: *Control and experimental groups(the total performance)*

5.4.1. Comparison between the control group and the experimental group based on the accuracy performance:

Table 11: Control and experimental groups(the accuracy performance)

Group	Controller Group A n=20		Experimental Group B n=20		Paired Differences	P-value	Sig
	Mean	SD	Mean	SD			
Accuracy Performance	9.45	3.3	16.50	1.96	-7.05	0.000	***

*** Paired Samples Statistics test, * p value > 0.05, ** p value > 0.01, *** p value ≥ 0.001**

Table 11 summarizes descriptive statistics for each group, including means, standard deviations, and Paired Samples Test. The P-value and the significance level between the control group and the experimental group based on the accuracy performance by Paired Samples Test. There were statistically significant differences between the control group and the experimental group based on the accuracy

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performance. The average accuracy performance of the control group was (9.45) while the average accuracy performance of the experimental group was (16.5).

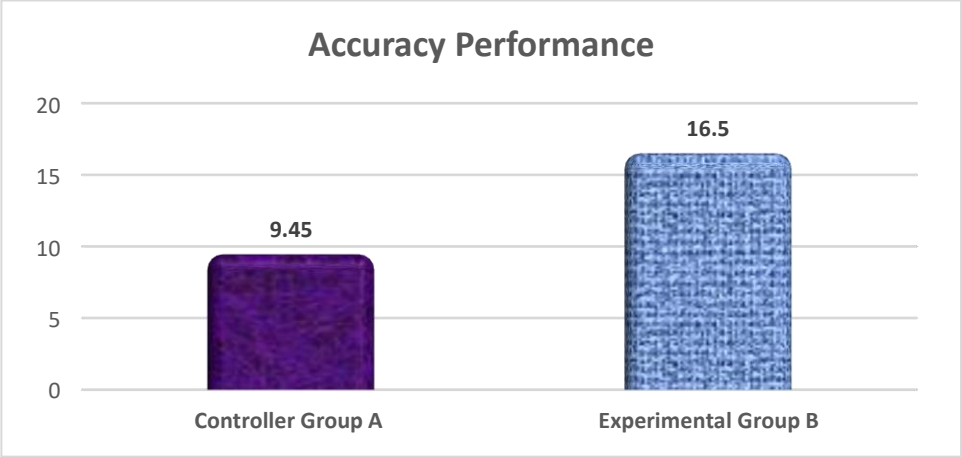

Figure 4: *Control and experimental groups(the accuracy performance)*

5.4.2. Comparison between the control group and the experimental group based on the competency performance:

Table 12: Control and experimental groups(the competency performance)

Group	Controller Group A n=20		Experimental Group B n=20		Paired Differences	P-value	Sig
	Mean	SD	Mean	SD			
Competency Performance	9.75	3.1	16.45	1.5	-6.70	0.000	***

*** Paired Samples Statistics test, * p value > 0.05, ** p value > 0.01, *** p value ≥ 0.001**

Table 12 summarizes descriptive statistics for each group, including means, standard deviations, and Paired Samples Test.

The P-value and the significance level between the control group and the experimental group based on the competency performance by Paired Samples Test. There were statistically significant differences between the control group and the experimental group based on the competency performance. The average competency performance of the control group was (9.75) while the average competency performance of the experimental group was (16.45).

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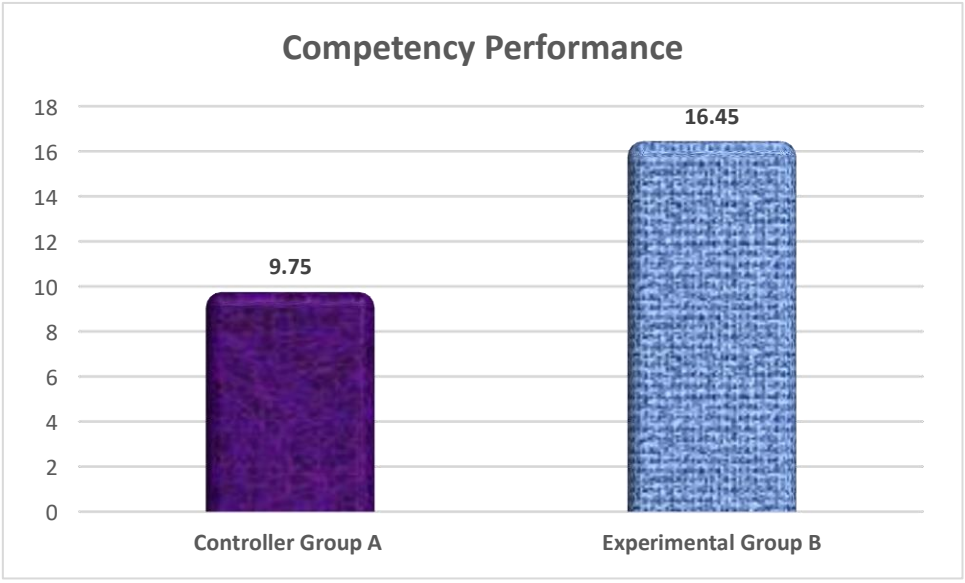

Figure 12:*Control and experimental groups(the competency performance)*

5.4.3. Comparison between the control group and the experimental group based on the content performance:

Table 13:Control and experimental groups(the content performance)

Group	Controller Group A n=20		Experimental Group B n=20		Paired Differences	P-value	Sig
	Mean	SD	Mean	SD			
Content Performance	9.95	3.4	16.25	2.1	-6.30	0.000	***

*** Paired Samples Statistics test, * p value > 0.05, ** p value > 0.01, *** p value ≥ 0.001**

Table 13 summarizes descriptive statistics for each group, including means, standard deviations, and Paired Samples Test.

The P-value and the significance level between the control group and the experimental group based on the content performance by Paired Samples Test. There were statistically significant differences between the control group and the experimental group based on the content performance. The average content performance of the control group was (9.95) while the average content performance of the experimental group was (16.25).

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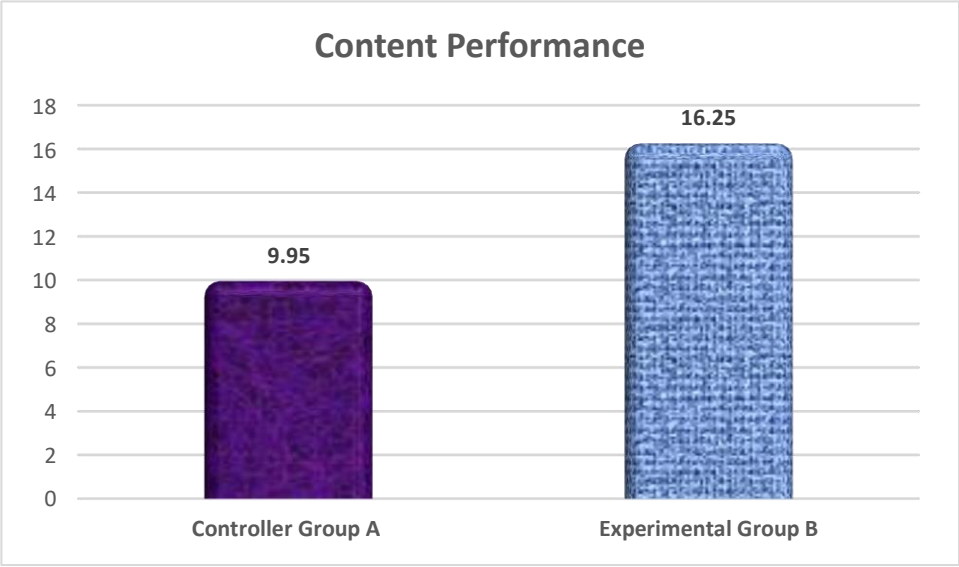

Figure 6:*Control and experimental groups(the content performance)*

Comparison between the control group and the experimental group based on the language performance:

Table 14:Control and experimental groups(the language performance)

Group	Controll Group A n=20		Experimental Group B n=20		Paired Differences	P-value	Sig
	Mean	SD	Mean	SD			
Language Performance	10.10	3.4	16.45	1.7	-6.35	0.000	***

*** Paired Samples Statistics test, * p value > 0.05, ** p value > 0.01, *** p value ≥ 0.001**

Table 14 summarizes descriptive statistics for each group, including means, standard deviations, and Paired Samples Test.

The P-value and the significance level between the control group and the experimental group based on the language performance by Paired Samples Test. There were statistically significant differences between the control group and the experimental group based on the language performance. The average language performance of the control group was (10.1) while the average language performance of the experimental group was (16.45).

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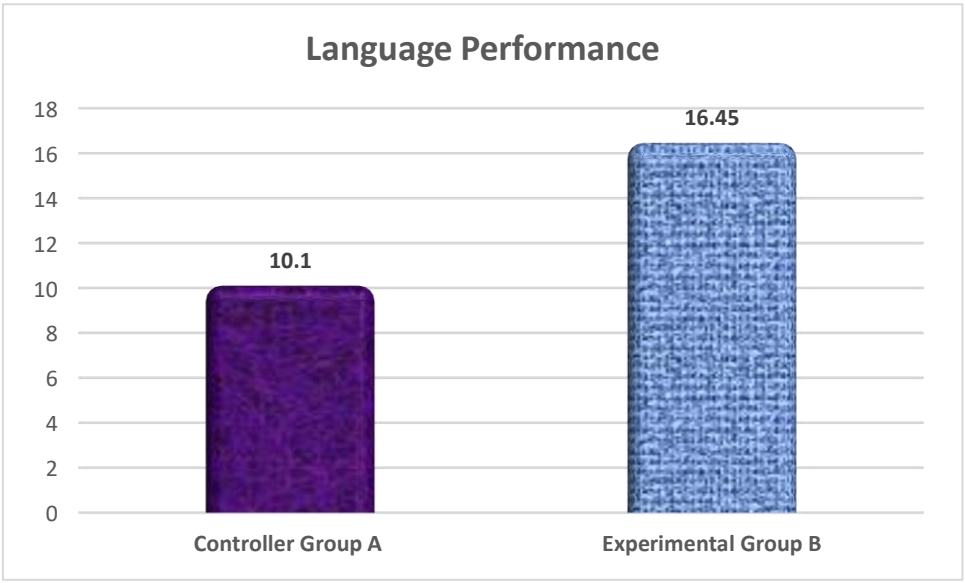

Figure 7:*Control and experimental groups(the language performance)*

5.4.4. Comparison between the control group and the experimental group based on the style performance:

Table 15:Control and experimental groups(the style performance)

Group	Controller Group A n=20		Experimental Group B n=20		Paired Differences	P-value	Sig
	Mean	SD	Mean	SD			
Style Performance	10.00	2.810	17.20	2.067	-7.20	0.000	***

*** Paired Samples Statistics test, * p value > 0.05, ** p value > 0.01, *** p value ≥ 0.001**

Table 15 summarizes descriptive statistics for each group, including means, standard deviations, and Paired Samples Test.

The P-value and the significance level between the control group and the experimental group based on the style performance by Paired Samples Test. There were statistically significant differences between the control group and the experimental group based on the style performance. The average style performance of the control group was (10.0) while the average style performance of the experimental group was (17.2).

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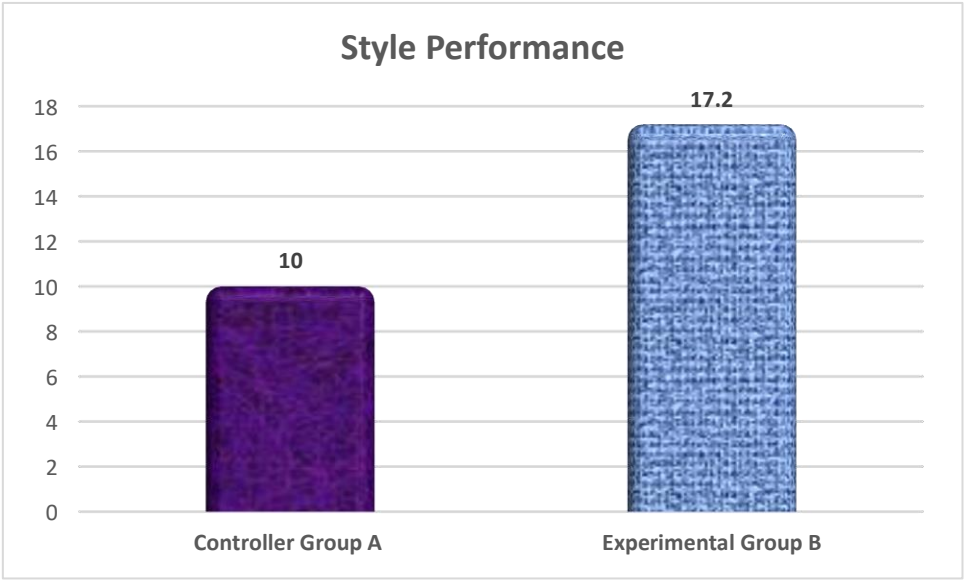

Figure 8:*Control and experimental groups(the style performance)*

6. Discussion

The present study was designed to investigate the impact of Artificial Intelligence on the quality of Saudi Translators' Performance. The first question deals with the Saudi learners' attitudes towards using AI-based tools in their translation tasks. These attitudes have been investigated in three sections: general attitudes, expected benefits, and expected drawbacks. In the general attitudes section, the results reveal that the second item, which discusses the advantageous nature of AI-based translation applications, obtained the highest ranking whereas item 4, which posits that AI-driven translation surpasses human translation, received the lowest ranking. This may be due to the Saudi learners' strong belief in the importance of artificial intelligence in the translation process. It can also be explained in the translation facilities provided by AI translation tools that make the translation tasks easier for students. This result reinforces the idea that Saudi learners have a positive general attitude towards using artificial intelligence tools in their translation tasks.These results also support the results revealed by Sahari, Al-Kadi, and Ali (2023), when they indicated that Saudi students have a positive attitude towards using AI-based tools and they are satisfied with using ChatGPT in translation.

The second section of the questionnaire tackles the expected benefits and the results of this section show the students' positive attitude towards the future of AI in the field of translation. Besides, the results also prove the Saudi learners' disbelief in the existence of any future dangers of using AI tools in translation. This may be attributed to the continuous advancement of AI tools observed by students; such

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advancement provoke students' expectations that these tolls will be widely used and their risks will be limited to the minimum. Although the current results support the results of studies in which the authors assured the future benefits of artificial intelligence in the translation industry(Wang, 2023; Sahari, et al.2023),they differe from studies like Kaur et al.'s study (2022)which stated that despite the many benefits of these systems, they may sometimes result in damage to both users and society.

The results of the third section, which was about the expected drawbacks, revealed that the most dangerous drawback of using AI-based tools lies in the fact that depending completely on AI tools will lead to decreasing the student translators' proficiency in the translation field. This may be justified in the fact that, while using these tools in translation, students do not allow their minds to think about the other possible translations, or even give their mnds the right to judge the translation provided by the AI tools to check its accuracy, coherence, and consistency. This finding does not support the previous research, such as that can be found in Ali's study (2023) which indicated that the most important drawback can be explained in terms of plagiarism and overreliance on chatbots.

The second research inquiry focuses on how the utilization of artificial intelligence tools impacts the quality of translated texts by Saudi students. To address this, the students' performance on the translation test was assessed based on five key measures: accuracy, competency, content, language, and style proficiency.It is interesting to note that in the students' total performance, the AI-based tools proved to have an effective role in improving students' proficiency in their translation tasks. This improvement could be attributed to the features of the AI-based translation tools, including the huge number of lexical words with synonyms and antonyms and the great ability of these tools to produce error-free sentences. Another possible explanation for this is that students have more confidence on the translations produced by these tools more than the translation they can produce.This result is in agreement with the results of Wang (2023) which proved a significant effect of artificial intelligence on the development of key competencies of future translators. It is also consistent with Moneus and Sahari'sstudy (2023)which indicated the importance of artificial intelligence in the field of translation but also assured the necessity to make a balance between AI's capabilities and human expertise.However, the results of the current study differ from the results of Pym's study (2010), in which the author insisted on the superiority of human translation on machine translation.

Another important finding was that the performance of experimental group students surpassed that of the control group students in each of the five key measures. The studyfound that students who used ChatGPT in the translation task showed better accuracy performance than stdent who did the task manually. This is due to the fact that AI translation tools are provided with accurate stored structures, and these tools have the ability to correct any type of errors, including spelling, grammatical, or mechanical errors.Thestudy also confirmed that the experimental

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group students demonstrated better competencythan what control group students did. A possible explanation for this result may be the lack of training courses for Saudi student translators in the field of achieving competency in translation. Content proficiency was also observed with a higher level in experimental group results when compared with control group results.This result may be explained by the fact that the vocabulary storage in the AI tolls is much bigger than that in the humans' minds. This helped the students with the AI tools produce content-rich translated versions than what sudents with manual translation could do. Another important finding was that experimental group students show better proficiency in both language and style. It seems possible that this result is due to the students' carelessness regarding the language and style errors. They pay more effort to the meaning and the message of the source language text.These results match those observed in earlier studies which indicated that machine or AI-based translation is more effective than human translation (Han et al. 2021;Moneus and Sahari, 2023; Wang, 2023). On the other hand, the results differ from some published studies like Alowedi and Al-Ahdal's study(2023) which indicated that human translation was more effective in translating poems than machne translation and machine translation falls short in capturing the subtleties of the poem, such as figurative language, historical allusions, and the poem's genre.

Conclusion, Limitations, and Suggestions for Further Studies

In conclusion, the impact of AI on translation quality is a complex and evolving topic. While AI provides exciting possibilities for enhancing speed and accuracy, it also raises concerns about job displacement and the risk of losing linguistic nuances. Striking a balance between leveraging AI capabilities and preserving human expertise will be crucial in ensuring the future quality and accessibility of translation services.

The questionnaire shows the impact of artificial intelligence programs on the performance of translation students in achieving translation quality. Furthermore, the students' attitude was The findings provide an insight and comprehensible overview of the role of artificial intelligence and its influence on the translation process.

The students' attitudes varied between their directions in the future to expand the use of artificial intelligence to improve the quality of translation, but most of the students believe that artificial intelligence facilitated access to terms more accurately and saved a lot of time and effort, with the possibility of making maximum use of that technology to achieve translation quality.

Moreover, the study highlighted the importance of continuous learning and adaptation for both AI programs and human translators. For AI, this involves regular updates and learning from a diverse range of sources to improve its understanding and translation of languages. For human translators, this means staying abreast of technological advancements and leveraging AI tools to enhance their performance.

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The current research provides significant insights into the impact of artificial intelligence on the quality of Saudi translators' performance.

Overall, this study answered many questions about the integration of AI in the field of translation holds promising potential. To what extent the future of translation lies in the symbiotic relationship between AI and human translators, leveraging the strengths of both to achieve the highest quality of translation. Therefore, the findings was important to understand the the human role in achieve the quality of translation.

This research opens up avenues for further studies on the subject, particularly in exploring how AI can be better tailored to understand and translate various dialects within the Arabic language, and how translators can best utilize AI for optimal performance.

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Competing Interests

The authors have no relevant financial or non-financial interests to disclose.

Consent

Informed consent was obtained from all individual participants included in the study.

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