

Statistical Analysis of Arabic Teachers' Use of ChatGPT in Teaching in Oman

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Abstract: The aim of the research was to determine the application of the ChatGPT by Arabic language teachers in cycle two of teaching in the Sultanate of Oman, and to reveal the statistical differences in the degree of application of Arabic language teachers in cycle two of ChatGPT in teaching according to the educational governorate variable. The descriptive approach was used in the study, and the questionnaire was used as a data collection tool distributed over three axes: planning the mechanism for benefiting from the ChatGPT, improving learning using the ChatGPT, and evaluating the effectiveness of the ChatGPT for Arabic language teachers. The study sample consisted of Arabic language teachers in cycle two in government schools in the governorates of North and South Al Batinah, and their number reached 420 male and female teachers. The stability coefficient Alpha Cronbach was calculated, the arithmetic means and standard deviations were calculated, and the arithmetic averages and standard deviations were calculated to ensure the stability of the study instruments. As result, the study found that the degree of application of Arabic language teachers in cycle two of the ChatGPT in teaching in the North and South Al Batinah governorates was high. The study indicates that there are no statistically significant differences, $p = 0.092$ in the practice of Arabic language teachers in the North and South Al Batinah governorates. Based on such results, there are recommendations that should be taken into consideration: the Ministry of Education's interest in meeting the needs of Arabic language teachers regarding planning to benefit from the ChatGPT, and addressing the challenges associated with it.

Keywords: Arabic Language, Cycle Two, Artificial Intelligence, ChatGPT

1 Introduction

The current era has been characterized by development in areas of life, including education, which is the cornerstone of building a cohesive society and preparing a good, competent citizen with the skills that enable him to engage in the labor market. As educational institutions in the Sultanate of Oman seek to achieve the objectives of the National Education Strategy 2040 in the field of education, given their role in influencing the teaching process, the focus has been on using artificial intelligence applications as a teaching tool. [24] referred to the term educational technology as: developing the performance of teachers and learners; with the aim of creating an educational environment that contributes to raising the level of achievement of students, and their effective participation in using the Internet and electronic devices, whether in designing tests, assignments or designing digital books, and transforming the lesson into an interactive lesson. The term educational technology includes artificial intelligence, which has contributed to achieving some of the goals of the educational process which is known as: the ability of computer systems to perform tasks related to human intelligence, and aims to improve learning, thinking, and decision-making processes related to experiments and data [3].

One of the tools used to facilitate information for students in an interactive and motivating manner in the educational process, and to contribute to the professional development of teachers and their acquisition of technical skills, is the ChatGPT, which is known as: a conversation robot based on artificial intelligence; to interact with humans by talking to them and provide what they ask of them, whether answers to questions, or writing texts in a correct language while taking into account grammatical and spelling rules [13]. [2] confirmed that the ChatGPT can contribute to developing the students' academic level, because it supports interactive educational work. It can be used to write articles, answer

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questions, assist in translation in Arabic and English, and provide solutions to problems in both technical and literary specializations. This develops the student's ability to generate ideas and think critically. This can only be achieved by teachers benefiting from its applications in developing the learning and research process. [10] also indicated that teachers of academic subjects, including Arabic language teachers, should benefit from the ChatGPT in developing the skill of presenting, evaluating and correcting information, and generating new creative ideas.

From the above, it has become clear that the application of ChatGPT in the educational process in the Arabic language may contribute to upgrading its teaching methods and keeping pace with modern developments. Consequently, it has become an important requirement of the educational process in light of what is known as digital education. ChatGPT serves the Arabic language by enriching the material in writing, by summarizing some texts into points or making comparisons in tables, while enhancing critical thinking, the ability to raise problems and topics for writing research and articles, and thus the ability to generate ideas and propose appropriate solutions. The ability to suggest various questions about the lesson topic, whether a literary text or a reading text, in an interactive manner with the subject teacher so that he can achieve what he requires in the process of planning his lesson, with less effort and time.

[23] investigated the impact of technologies on the advancement of the Arabic language at the Seventh International Conference on the Arabic Language recommended that the in-service Arabic language teacher be prepared to deal with modern technologies; in order to employ them after acquiring the necessary skills around them in the educational situation in a way that helps improve the students' academic level. The role of the ChatGPT in serving the Arabic language is highlighted, as [1] pointed out about the necessity of qualifying Arabic language teachers to use the technology, and providing the capabilities that overcome the difficulties of using it. This is what the study [20] stated, that ChatGPT has an impact on teaching the Arabic language through its use by Arabic language teachers in planning lessons; this saves them time and effort in keeping pace with curriculum developments by creating teaching methods that enhance student engagement and focus on higher-level skills such as critical thinking and problem-solving as an alternative to lower-level skills.

From the above, it became clear that the Arabic language, like other academic subjects, needs advanced teaching tools capable of making the material more interactive and removing it from the stage of stagnation resulting from indoctrination and memorizing information. The Arabic language teacher is a basic motivator, as his use of modern methods in the teaching process enhances linguistic skills, which contributes to improving the experience of teaching the Arabic language and transferring it from traditional learning to technical learning, which is a characteristic of the era.

1.1 The Problem Statements

In accordance with the vision of the National Education Strategy 2040 in the Sultanate of Oman, the educational system aims to improve the efficiency of human resources by adopting modern technology. To achieve this vision, attention was paid by the Ministry of Education to developing the skills of using teachers by introducing artificial intelligence applications into the teaching process, including the ChatGPT. Thus, education is developed by adopting a new educational system that keeps pace with modern developments [8]. In line with the interest indicated by the philosophy of education in the Sultanate of Oman in searching for knowledge supported by technology, and considering it a basic requirement in the development aspects of the learning process. To achieve this principle, the philosophy of education has set goals, including: building the self-capacities of teachers in the field of employing technology in teaching practices [7]. Also, in line with achieving what the Ministry of Education aspires to, as indicated in the Omani National Framework for Future Skills document on developing teaching staff; and given the agreement of most educational systems that the role of the teacher is not limited to teaching information to students, but goes beyond that to the necessity of possessing tools that develop the level of creativity and the ability to use technology among students; therefore, good professional preparation of teachers is assumed to deal efficiently with the requirements of the era; by urging them to use new teaching tools [16]. This can only be achieved through the Ministry of Education's interest in practical training for all teachers of academic subjects, especially Arabic language teachers, as employing ChatGPT in the field of education may achieve one of the visions that the Ministry aspires to reach; because of its impact on the performance of the school, the student, and the teacher, who is considered the guide and mentor in the educational process. The Fourth Arabic Language Symposium also recommended the necessity of providing training programs for Arabic language teachers to improve their technical skills necessary to deal with artificial intelligence tools and applications that support Arabic language teaching, such as the ChatGPT[19]. [5] showed that Arabic language teachers' knowledge of artificial intelligence techniques is still low. From all of the above, the current study crystallized to investigate the degree to which Arabic language teachers apply the ChatGPT in teaching in the North and South Al Batinah governorates in the Sultanate of Oman.

1.2 Research Objectives

1. Exploring the degree to which Arabic language teachers apply the ChatGPT in teaching in the Sultanate of Oman.
2. Revealing individual differences in the application of the ChatGPT by Arabic language teachers in teaching in the Sultanate of Oman attributable to the educational governorate variable.

1.3 Research Questions

RQ1: To what extent do Arabic language teachers apply the ChatGPT in teaching in the Sultanate of Oman?

RQ2: Are there statistically significant differences at the significance level of $\alpha \leq 0.05$ in the application of the ChatGPT by Arabic language teachers in teaching in the Sultanate of Oman due to the variable: educational governorate?

1.4 The Significance of the Study

1.4.1 Theoretical importance

- Contributing to achieving the goals of the philosophy of education in the Sultanate of Oman and the National Education Strategy 2040, which focus on technology in education as an alternative to conventional methods.
- The subject of the study is one of the modern topics in the Omani research environment that requires research and investigation, which contributes to supporting technological production in the field of teaching the Arabic language.
- Using ChatGPT in Arabic helps teachers acquire technical knowledge and future skills, enabling them to create a generation that possesses the two skills required by the job market.

1.4.2 Applied importance

- It is hoped that this study will provide stakeholders with data and information on the degree to which Arabic language teachers are implementing ChatGPT in the second round of an artificial intelligence application in teaching, in order to develop digital transformation among Arabic language teachers.
- Coming up with scientific results that reveal the degree to which Arabic language teachers apply the ChatGPT in teaching in the North and South Al Batinah governorates in the Sultanate of Oman, and providing recommendations and suggestions to Arabic language teachers to enhance their application of the ChatGPT; to benefit from it in the learning process.
- It is hoped that this study will serve as a reference for researchers and those interested in the educational field, specializing in Arabic language teaching curricula and methods in the field of artificial intelligence applications, such as ChatGPT.

1.4.3 Limitations

- **Temporal boundaries:** The study was applied in the second semester of the 2024–2025 academic year.
- **Spatial boundaries:** The study was applied to government schools in the North and South Al Batinah governorates of the Sultanate of Oman.
- **Human Limits:** The study was conducted on male and female Arabic language teachers of cycle two.
- **Objective boundaries:** The study addressed the degree of application of Arabic language teachers in cycle two of ChatGPT.
- **Questionnaire statements measure needs (Self-reported data):** lack of financial support, training needs.

1.4.4 Study terms

ChatGPT: ChatGPT is procedurally defined as: the skills, practices, capabilities, and cognitive levels acquired from the scientific revolution represented by digital transformation. Several applications of artificial intelligence have emerged, such as ChatGPT, which is used in several fields, including the educational field, where it is used by Arabic language teachers. In order to meet the requirements of interactive electronic teaching in the Arabic language according to the capabilities he possesses, such as answering Arabic language teachers' questions and inquiries, and assisting them in the summarization process, reframing, or generating ideas and suggestions about some questions related to a specific lesson; to create classroom and non-classroom activities, and is measured by the questionnaire that was prepared for that purpose.

2 Literature Review

2.1 Previous studies

ChatGPT has received attention in teaching, with studies focusing on discussing the challenges and positives of its use. Some addressed the obstacles facing teachers, while others focused on how to use the app to simplify routine tasks and personalize learning experiences. [25]. pointed out the comparison between the advantages of the ChatGPT in education and the challenges faced by teachers, and emphasized some positives, such as simplifying routine work, and the role of teachers in innovation and interaction, and also recommended the necessity of having a basic role for teachers in providing emotional and moral support, given the lack of artificial intelligence for emotional depth in interaction. This was confirmed by [3], which aimed to identify the ChatGPT and the importance of using it in education. It used the inductive approach through theoretical analysis of the program. The study recommended the necessity of using the ChatGPT, but while adhering to the warnings of its use, such as not neglecting the role of the teacher in guidance and supervision, and benefiting from the resources available in the application in supporting students' ability to be creative and innovative. [22]. aimed to learn about ChatGPT and review the benefits and risks of education and research, recommended encouraging teachers to explore ChatGPT and use it to evaluate student work, and developing training content in educational institutions. This was confirmed by the study [15]., which aimed to explore teachers' perceptions about the use of ChatGPT in education in the digital age. The qualitative approach was used to collect study data through in-depth interviews to collect data. The results reached were the presence of positive expectations from teachers that the use of ChatGPT in education is an opportunity to develop it. [4].also aimed to identify the use of ChatGPT in education and the challenges facing its use. Systematic review was used to collect data and critically evaluate selected studies. The study concluded that the use of ChatGPT in education for the purpose of planning lessons, evaluating students, and providing feedback is beneficial, and that the most prominent challenges of its use are data privacy, bias, and content accuracy. Its use leads to neglecting creative thinking skills and critics The study recommended the need to conduct local studies on how to use this application and the challenges of applying it in the educational field. [6]. aimed to explore the features and benefits of ChatGPT as one of these applications that can be used in the field of education. The descriptive approach was used in this study, which concluded that educational methods have been adapted to suit the capabilities of these advanced educational tools. She emphasized developing strategies to address ethical challenges in its use, and conducting additional research to evaluate the impact of ChatGPT on learning outcomes and capacity development. As for the study of [9]., which aimed to investigate the reality of using the artificial intelligence application ChatGPT in the educational process from the point of view of teachers, using the descriptive approach and the questionnaire as a research tool, the sample was selected in an intentional and easy way, which numbered 404 male and female teachers from public schools, and the results showed that the degree of teachers' use of the ChatGPT in teaching was at an average level, with positive and high trends towards its use, despite the presence of major challenges; Therefore, the study recommended a partnership between the Ministry of Education and educational technology companies to provide training courses that enable teachers to improve the quality of education using ChatGPT.

2.2 Commentary on previous studies

Previous studies have addressed multiple topics related to the ChatGPT. Some of them addressed it to identify challenges in the educational process, such as [3], and others addressed it as applications in the teaching process, such as [9]. These studies employed various research tools and different research methods, and it was natural for the communities and research samples to vary accordingly. Therefore, the results of previous studies reached by these studies varied as a result of the difference in their variables and objectives. However, she agreed on the need for ChatGPT to be implemented in the educational process while maintaining the ethical framework associated with educational practices. The current study has benefited from previous studies in constructing the introduction to the study and formulating its research problem. These studies mainly helped in constructing the research tool adopted by the current study, which is the questionnaire, and helped in interpreting some of the results of the current study. They were also directed towards a list of references and sources from which the current study benefited. What distinguishes this study from the rest of the previous studies is that it came to research the educational environment in the Sultanate of Oman, and to examine the degree to which Arabic language teachers apply the ChatGPT in teaching in the North and South Al Batinah governorates in the Sultanate of Oman.

3 Methodology

The descriptive quantitative approach was used, and this approach was chosen due to its ease of application and its suitability to achieve the objectives of the study. Data were collected, then analyzed and interpreted to reach results through logical answers to the study questions, and then to arrive at suggestions and recommendations.

3.1 Participants

The study community consisted of all Arabic language teachers in cycle two schools, male and female, in the North and South Al Batinah governorates, numbering 1,005 male and female teachers [17]. Such Omani Arabic language teachers have possessed a university degree in education in the field of specialization (through formal study), or a university degree in the specialization in addition to general diploma in education (educational qualification) before they joined the education field. They are teaching in the second cycle of basic education in the Sultanate of Oman which represents a pivotal stage extending from the fifth to the tenth grade. This stage focuses on strengthening foundational academic and practical skills, and prepares students for post-basic education (the eleventh and twelfth grade).

The sample was determined according to the Stephen Thompson's equation, and its number reached 420 male and female teachers, and it was the convenience sampling technique.

3.2 Study variables

–**Demographic variables:** Educational Governorate: (North Al Batinah and South Al Batinah).

–**Independent variable:** The degree to which Arabic language teachers apply ChatGPT in teaching has changed.

3.3 Validity and Reliability

The study tool was built by reviewing previous literature ([1]; [5]; [21]; [10]), and reviewing some specialists in Arabic language curricula and teaching methods. The questionnaire consisted of two sections: the first section was related to the demographic variables of the respondents, while the second section consisted of three axes that measured the degree of application of Arabic language teachers in cycle two of ChatGPT. To measure the responses of the sample members, the Likert pentatonic scale (strongly agree, agree, neutral, disagree, strongly disagree) was used. To verify the validity of the study tool, it was presented to seventeen judges who specialize in the field of teaching methods and approaches. As for the stability of the study tool, the questionnaire was applied to a survey sample, which was chosen in a simple random way, consisting of 60 individuals from outside the sample (Arabic language teachers in cycle two in the schools of North and South Al Batinah); to find the "Cronbach's Alpha" stability coefficient, to ensure the stability of the study tool, and its suitability for actual application. Regarding participant consent, participants have been informed that their names will not be announced and it was ensured there are no ethical issues. In general, the value of the coefficient reached 0.905; which indicates that the stability of the questionnaire is high and that it is suitable for achieving the goals for which it was designed.

3.4 Procedural steps

1. View various relevant references: books, periodicals, peer-reviewed scientific journals, and research, such as ([1]; [23]; [10]) to formulate the introduction to the study and its problem, then the study's questions, objectives, and importance, and to define the study's boundaries, variables, terminology, and previous studies.
2. Determine the methodology used for the study, as well as determine the study population and the appropriate sample.
3. Applying the study tool to sample members, and collecting data that serves the study.
4. Performing statistical processing using the SPSS statistical package program.
5. Analyze the results with interpretation, and provide recommendations and suggestions.

3.5 Statistical methods

- To ensure the stability of the study instrument, the stability coefficient Alpha Cronbach was calculated.
- To answer the first question, the arithmetic means and standard deviations were calculated.
- To answer the second question, the arithmetic averages and standard deviations were calculated, and the “Independent – Sample *T*-Test” was used to verify the existence of statistically significant differences attributed to the educational governorate variable in the degree to which Arabic language teachers applied the ChatGPT in teaching in the governorates of North and South Al Batinah in the Sultanate of Oman.

4 Results and Discussion

To what extent do Arabic language teachers apply the ChatGPT in teaching in the North and South Al Batinah governorates of the Sultanate of Oman? To answer this question, the arithmetic averages and standard deviations of the responses of the sample members were calculated, as shown in Table 1.

Table 1: Arithmetic means and standard deviations for the study axes

	N	Study topics	average	deviation	Degree	rank
North Al Batinah Governorate	1	Planning for a mechanism to benefit from the ChatGPT	4.42	0.718	Very high	1
	2	Improving learning using ChatGPT	4.29	0.759	Very high	3
	3	Evaluating the effectiveness of the ChatGPT for Arabic Language Teachers	4.34	0.703	Very high	2
		Total	4.35	0.727	Very high	–
South Al Batinah Governorate	1	Planning for a mechanism to benefit from the ChatGPT	3.40	0.688	Medium	2
	2	Improving learning using ChatGPT	4.15	0.642	High	1
	3	Evaluating the effectiveness of the ChatGPT for Arabic Language Teachers	3.30	0.501	Medium	3
		Total	3.33	0.421	Medium	–
General application level			3.48	0.611	High	–

Note: The values of the arithmetic averages and standard deviations of the study axes. The total degree of application of ChatGPT by Arabic language teachers in teaching in the North and South Al Batinah Governorates in the Sultanate of Oman.

As it can be seen in Table 1, the result of the general application level was high with an arithmetic average of 3.48 and a standard deviation of 0.611. This indicates that the educational practices of Arabic language teachers are coupled with a high use of this application in the teaching process in the Arabic language. Perhaps this is in line with the requirements of the National Education Strategy in the Sultanate of Oman 2040, and also in line with the philosophy of education in the Sultanate of Oman, which stipulate in some of its axes the necessity of moving to digital teaching; to keep pace with developments in teaching behaviors. The General Directorate of Information Technology in the Ministry of Education is also making planned efforts to train subject teachers, including Arabic language teachers, to move towards relying on electronic teaching in teaching processes, and almost all schools in the North and South Al Batinah governorates are equipped with a classroom environment that helps activate digital teaching in all its forms; therefore, the result of application in the two governorates was high.

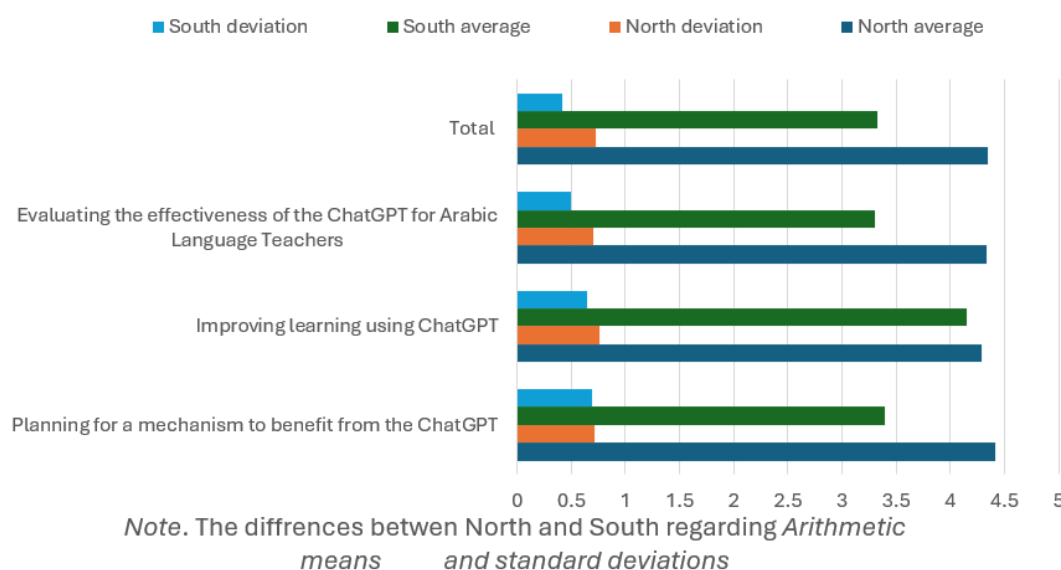


Fig. 1: Arithmetic means and standard deviations: North vs South

Figure 1 shows that results of North Al Batinah Governorate came with a very high application score with an arithmetic mean of 4.35 and a standard deviation of 0.727, this level came in South Al Batinah Governorate with a high arithmetic mean of 3.48 and a standard deviation of 0.611. Perhaps the superiority of North Al Batinah Governorate in the degree of Arabic language teachers' application of the ChatGPT in teaching is due to the fact that the size of the community and the sample in North Al Batinah Governorate is larger than in South Al Batinah, and perhaps this gives an opportunity to represent the problem well. It can also be considered that the community in North Al Batinah Governorate is less diverse than in South Al Batinah Governorate. In addition to teachers settling in the states of North Al Batinah Governorate, unlike in South Al Batinah Governorate, they are more vulnerable to transfer, as a number of Arabic language teachers stay for a period of time and then move to their educational governorates. To follow more details on the degree to which Arabic language teachers apply the ChatGPT in teaching in the North and South Al Batinah governorates in the Sultanate of Oman, according to the study axes, the following results can be found.

Table 2: Arithmetic means and standard deviations for the planning axis of the ChatGPT utilization mechanism

Study topics	Pivot paragraphs	average	deviation	Degree	rank
North Al Batinah Governorate	I need financial support to utilize the ChatGPT purchasing for teaching.	4.63	0.695	Very high	1
	I need ongoing training to benefit from the ChatGPT.	4.50	0.665	Very high	2
	I need technical resources to improve my performance using ChatGPT.	4.48	0.759	Very high	3
	I need channels whose purpose is to provide technical support for any updates to the ChatGPT software.	4.40	0.747	Very high	4
	I am developing my intellectual awareness of how to properly utilize the ChatGPT.	4.39	0.745	Very high	5
	I collaborate with my colleagues to develop teaching strategies suitable for the ChatGPT.	4.36	0.686	Very high	6
	I need a detailed plan to link the use of ChatGPT with learning objectives.	4.33	0.713	Very high	7
	I am interested in attending seminars, conferences, and panel discussions to develop my skills in the ChatGPT.	4.31	0.735	Very high	8

Table 2 (continued)

Study topics	Pivot paragraphs	average	deviation	Degree	rank
South Al Batinah Governorate	Total (North Al Batinah)	4.42	0.718	Very high	–
	I need financial support to utilize the ChatGPT purchasing for teaching.	4.31	0.591	Very high	1
	I need technical resources to improve my performance using ChatGPT.	4.28	0.645	Very high	2
	I need ongoing training to benefit from the ChatGPT.	4.22	0.551	Very high	3
	I need a detailed plan to link the use of ChatGPT with learning objectives.	4.18	0.847	High	4
	I need channels whose purpose is to provide technical support for any updates to the ChatGPT software.	4.11	0.641	High	5
	I am developing my intellectual awareness of how to properly utilize the ChatGPT.	3.93	0.381	High	6
	I collaborate with my colleagues to develop teaching strategies suitable for the ChatGPT.	3.36	0.418	Medium	7
	I am interested in attending seminars, conferences, and panel discussions to develop my skills in the ChatGPT.	3.22	0.632	Medium	8
	Total (South Al Batinah)	4.18	0.612	High	–
Total		3.80	0.410	High	–

Note: The arithmetic averages and standard deviations of the planning axis for the mechanism of benefiting from ChatGPT in the governorates of North and South Al Batinah.

Table 2 shows the axis obtained a high level, an arithmetic average of 3.80 and a standard deviation of 0.410. This means that Arabic language teachers in the North and South Al Batinah governorates need support in some planning processes to meet the challenges of implementing the program, as shown in paragraphs (1–2–3–6–7) in both governorates. This is consistent with the fact that the ChatGPT is one of the new applications that have begun to spread in the Omani educational field and still needs its period of time for the basics of its implementation to be established. The results are almost similar between the governorates of North and South Al Batinah in the planning axis for the mechanism for benefiting from the ChatGPT. The paragraph that won first place in the rank in both governorates: “I need financial support to benefit from the ChatGPT purchasing in teaching” had an arithmetic mean in the governorate of North Al Batinah of 4.63 and a standard deviation of 0.695 with a very high rating. As for the governorate of South Al Batinah, its arithmetic mean was 4.31 and a standard deviation of 0.591 with a very high rating. This fits with the basic premise that financially purchased computer software is expensive, and therefore Arabic language teachers have expressed a need for financial support to employ ChatGPT. This is consistent with the second and third paragraphs, which ranked second and third interchangeably between them in the two governorates, which state: “I need ongoing training to benefit from ChatGPT.” It ranked second in North Al Batinah Governorate with an arithmetic mean of 4.50 and a standard deviation of 0.665, and in the same paragraph it ranked third in South Al Batinah Governorate with an arithmetic mean of 4.22 and a standard deviation of 0.551, which together are very high. As for the paragraph that states: “I need technical resources to improve my performance in using ChatGPT”, it ranked third in North Al Batinah Governorate with an arithmetic mean of 4.48 and a standard deviation of 0.759, while it ranked second in South Al Batinah Governorate with an arithmetic mean of 4.28 and a standard deviation of 0.645, which is also a very high degree. It is also noted that the rest of the paragraphs included in the axis, represented by paragraphs (4–5–6–7–8), were somewhat close in terms of arithmetic averages with slight variation, and this confirms the convergence of the level of planning for the mechanism for benefiting from the ChatGPT in both governorates.

The results of the current study were consistent with the results of [11] in confirming that planning to use ChatGPT in teaching should include providing appropriate financial support to purchase and maintain devices, while providing appropriate support.

The lowest arithmetic mean in both governorates was obtained by the paragraph that reads: “I am interested in attending seminars, conferences and discussion groups to develop my skills in the ChatGPT.” In North Al Batinah Governorate, it obtained an arithmetic mean of 4.31 and a standard deviation of 0.735 at a very high level, but in South Al Batinah Governorate, it obtained an arithmetic mean of 3.22 and a standard deviation of 0.632 at an average level. The reason may be due to the planning of the appropriate timing for holding these seminars and conferences by the Ministry of Education related to technology and artificial intelligence, and to the teacher’s motivation and ambition to develop his personal and professional experiences and capabilities. The results of [11] were consistent with the planning axis of the current study in emphasizing the importance of spreading the culture of artificial intelligence technologies, including the ChatGPT, through holding conferences, seminars, and lectures for use in the educational process.

Table 3: Arithmetic means and standard deviations for the Learning Improvement Axis using ChatGPT

Study topics	Pivot paragraphs	average	deviation	Degree	rank
North Al Batinah Governorate	I translate learning objectives into engaging and interactive charts using ChatGPT.	4.56	0.582	Very high	1
	I use ChatGPT to generate article questions in an innovative way.	4.30	0.608	Very high	2
	I use ChatGPT to suggest assignment questions effectively.	4.30	0.469	Very high	3
	ChatGPT software to develop creative problem-solving thinking.	4.29	0.808	Very high	4
	I use ChatGPT to share educational links with students.	4.27	0.867	Very high	5
	I design a variety of activities for students using ChatGPT software.	4.25	0.621	Very high	6
	I use ChatGPT software to design interactive tests for students.	4.11	0.728	High	7
	I use ChatGPT to develop critical thinking by presenting stimulating topics and issues for discussion.	3.19	0.731	Medium	8
	Total (North Al Batinah)	4.22	0.617	Very high	–
South Al Batinah Governorate	I translate learning objectives into engaging and interactive charts using ChatGPT.	4.25	0.698	Very high	1
	I use ChatGPT to generate article questions in an innovative way.	4.23	0.744	Very high	2
	I use ChatGPT to suggest assignment questions effectively.	4.21	0.651	Very high	3
	ChatGPT software to develop creative problem-solving thinking.	4.20	0.544	Very high	4
	I use ChatGPT to share educational links with students.	4.01	0.645	High	5
	I design a variety of activities for students using ChatGPT software.	3.50	0.482	High	6
	I use ChatGPT software to design interactive tests for students.	3.30	0.419	Medium	7
	I use ChatGPT to develop critical thinking by presenting stimulating topics and issues for discussion.	2.82	0.521	Medium	8
	Total (South Al Batinah)	4.01	0.710	High	–
Total		3.99	0.518	High	–

Note: The arithmetic averages and standard deviations of the ChatGPT learning improvement axis in the North and South Al Batinah governorates.

It is worth noting from Table 3 that the ChatGPT learning improvement axis received a general arithmetic average of 3.99 and a standard deviation of 0.518, which indicated a high degree of utilization. This reflects that Arabic language teachers in the North and South Al Batinah governorates highly employ ChatGPT in various educational processes that help improve learning. This is consistent with modern active learning strategies that call for employing non-traditional educational methods in the educational process. [15] indicated that employing modern electronic methods has an impact on the results of the survival of the learning effect among students, another impact on the quality of the educational process. All of these factors prompt Arabic language teachers to adopt the use of ChatGPT to improve learning. In the axis of improving learning using ChatGPT, the results showed through Table ?? that the paragraph with the highest usage rates in North Al Batinah Governorate is the paragraph that states: “Translate learning objectives into attractive and interactive plans using ChatGPT,” as it obtained the highest arithmetic mean of 4.56 with a standard deviation of 0.582, and a very high score. Followed by the paragraph “I use ChatGPT to generate essay questions in an innovative way” with an arithmetic mean of

4.30, a standard deviation of 0.608, and a very high rating. In South Al Batinah Governorate, and in the axis of improving learning using ChatGPT, the results showed through Table ?? that the paragraph with the highest usage rates in South Al Batinah Governorate is the paragraph that states: "I use ChatGPT to develop creative thinking to solve problems," as it obtained an arithmetic mean of 4.25 with a standard deviation of 0.698, and a very high score. Followed by the paragraph "I use ChatGPT to generate essay questions in an innovative way" with an arithmetic mean of 4.23, a standard deviation of 0.744, and a very high rating. Perhaps this increase is due to the fact that the philosophy of education in the Sultanate of Oman has set among its basic objectives the preparation of teachers to actively deal with modern technologies in the educational learning process. In addition, most of the current generation of Arabic language teachers in the North and South Al Batinah governorates, as indicated by [17], are young, modern teachers who tend to deal with these electronic technologies and applications and employ them in the educational process, in order to create effective types of education.

On the other hand, and on the side of the paragraphs that received lower estimates in the axis of improving learning using ChatGPT in North Al Batinah Governorate, the paragraph "I use the ChatGPT to develop critical thinking by presenting topics and issues that provoke discussion" had the lowest arithmetic mean of 3.19 with a standard deviation of 0.731 and an average practice score. As for South Al Batinah Governorate, the paragraph "I use the ChatGPT to develop critical thinking by presenting topics and issues that provoke discussion" has a minimum arithmetic mean of 2.82, a standard deviation of 0.521, and an average practice score. This may indicate that some practices need to be more actively oriented in their practices, leading to better service to the educational process than it is currently.

The results of the current study agreed that the ChatGPT contributes to improving learning, in line with the results of [3], which confirmed that the ChatGPT enhances the learning experience for students, and supports the work of teachers by benefiting from the available resources and sources in the ChatGPT, such as: providing educational links to students, suggesting assignments and articles, designing activities and tests, and creating interactive plans and lessons that increase students' ability to innovate, and enhance their skills in solving problems. The current study also agreed with the study ([22]; [12]) in emphasizing teachers' use of ChatGPT to plan lessons in a way that is attractive and stimulates students' brainstorming and idea generation, while committing to ensuring the accuracy of all information provided by teachers.

While the results of the current study differed from [24], which indicated that teachers' reliance on ChatGPT in teaching may lead to the neglect of many skills, including critical thinking.

Table 4: Arithmetic means and standard deviations of the effectiveness of ChatGPT for Arabic language teachers

Study topics	Pivot paragraphs	average	deviation	Degree	rank
North Al Batinah Governorate	ChatGPT helps me design lessons that improve students' understanding and comprehension.	4.53	0.643	Very high	1
	ChatGPT helps me use my time efficiently.	4.36	0.672	Very high	2
	ChatGPT helps me focus on feedback.	4.36	0.651	Very high	3
	ChatGPT provides me with an opportunity to diversify my learning methods in innovative ways.	4.33	0.727	Very high	4
	ChatGPT enhances my critical thinking skills in the field of teaching Arabic.	4.18	0.693	High	5
	ChatGPT software helps me reduce effort.	4.15	0.741	High	6
	ChatGPT contributes to improving my students' positive interaction with the content of Arabic language lessons.	3.31	0.659	Medium	7
	ChatGPT helps me focus on understanding the students.	3.26	0.745	Medium	8
	Total (North Al Batinah)	4.17	0.617	High	–
South Al Batinah Governorate	ChatGPT helps me design lessons that improve students' understanding and comprehension.	4.50	0.514	Very high	1
	ChatGPT helps me use my time efficiently.	4.40	0.512	Very high	2
	ChatGPT helps me focus on feedback.	4.23	0.652	Very high	3
	ChatGPT provides me with an opportunity to diversify my learning methods in innovative ways.	4.21	0.593	Very high	4
	ChatGPT software helps me reduce effort.	4.10	0.821	High	5

Table 4 (continued)

Study topics	Pivot paragraphs	average	deviation	Degree	rank
	ChatGPT enhances my critical thinking skills in the field of teaching Arabic.	4.01	0.671	High	6
	ChatGPT contributes to improving my students' positive interaction with the content of Arabic language lessons.	3.21	0.645	Medium	7
	ChatGPT helps me focus on understanding the students.	2.90	0.458	Medium	8
	Total (South Al Batinah)	3.94	0.611	High	–
	Total	4.02	0.615	High	–

Note: The arithmetic averages and standard deviations of the effectiveness axis of ChatGPT for Arabic language teachers in the North and South Al Batinah governorates. Note: the arithmetic averages and standard deviations of the effectiveness axis of the ChatGPT for Arabic language teachers.

Table 4 shows that the effectiveness axis of using the ChatGPT for Arabic language teachers had an arithmetic mean of 4.02 and a standard deviation of 0.615, indicating a high degree of effectiveness. This may be due to the digital awareness issued by the Artificial Intelligence Team at the Ministry of Education, which includes generative language models in teaching, such as the ChatGPT. Arabic language teachers' interest in this application and their benefit from it was evident in the sections of this axis in creating diverse content, providing feedback, and re-simplifying information to suit student levels.

Regarding the effectiveness of the ChatGPT for Arabic language teachers, the results showed in Table 4 that the paragraph with the highest usage rates in North Al Batinah Governorate is the paragraph that reads: "ChatGPT helps me design lessons that improve students' understanding and comprehension," as it obtained the highest arithmetic mean of 4.53 with a standard deviation of 0.634, while the paragraph obtained: "ChatGPT helps me invest time efficiently" ranked second with an arithmetic mean of 4.36, a standard deviation of 0.672, and a very high score. In South Al Batinah Governorate, the same two paragraphs received the highest ratings. The paragraph that read: "ChatGPT helps me design lessons that improve students' understanding and comprehension" received an arithmetic mean of 4.50 with a standard deviation of 0.514, while the paragraph that read: "ChatGPT helps me invest time efficiently" received an arithmetic mean of 4.40 with a standard deviation of 0.512. Perhaps the reason for this is attributed to what was stated in the regulatory document for e-learning, which emphasizes the interest of supervisors in activating the teaching staff for digital applications in evaluating learners' learning topics. This has been included as one of the basic criteria for evaluating a teacher during a class visit by an educational supervisor. The supervisor also monitors the activities accompanying the educational lessons, which requires the Arabic language teacher to design lessons that communicate information to the students in a way that ensures it remains in their minds and enables them to complete the required activities and tasks. On the other hand, in North Al Batinah Education Governorate, the paragraph: "ChatGPT helps me focus on student comprehension" received a lower arithmetic mean of 3.26 and a standard deviation of 0.745 as a mean score. As for South Al Batinah Educational Governorate, the paragraph: "ChatGPT contributes to improving my students' positive interaction with the content of Arabic language lessons" received the lowest arithmetic mean of 2.90 and a standard deviation of 0.458. This result indicates that there are some points that still require greater effort in raising awareness and urging them and overcoming the difficulties they face in order to achieve optimal efficiency in ChatGPT applications. This could also be explained by Arabic language teachers' understanding of the educational standards mentioned in the School Performance Development Guide, which emphasizes the importance of teachers' use of new teaching technologies.

The results of the current study were consistent with the study of ([21], [4]; [25], [15]; [12], [10]) in their results that confirmed that the ChatGPT can bring about a qualitative shift in the educational process; this is done by improving learning outcomes and enabling teachers to design educational content that suits the student's abilities.

4.1 Results related to the second question and their discussion

Are there statistically significant differences at the significance level of $\alpha \leq 0.05$ in the application of the ChatGPT by Arabic language teachers in teaching in the Sultanate of Oman due to the educational governorate variable? The *T*-test was used for independent samples; to find out the differences between the average estimates of study sample members in employing Arabic language teachers for the ChatGPT in teaching in the North and South Al Batinah governorates of the Sultanate of Oman, attributed to the educational governorate variable.

Table 5: Arithmetic means and standard deviations of the t -test for differences in the use of the ChatGPT by Arabic language teachers in teaching in the North and South Al Batinah governorates

Axes	Governorate	N	Arithmetic mean	Standard deviation	Value (t)	df	Statistical level (p)
Planning for a mechanism to utilize the ChatGPT	North Al Batinah	210	3.37	0.50	1.48	418	0.142
	South Al Batinah	210	3.21	0.53			
Improving learning using ChatGPT	North Al Batinah	210	3.10	0.62	1.51	418	0.133
	South Al Batinah	210	3.02	0.78			
ChatGPT for Arabic language teachers	North Al Batinah	210	3.15	0.41	1.76	418	0.092
	South Al Batinah	210	3.10	0.45			
Overall arithmetic mean	North Al Batinah	Al 210	3.32	0.47	1.70	418	0.092
	South Al Batinah	Al 210	3.30	0.55			

Note: The planning axis for the mechanism for benefiting from the ChatGPT.

Table 5 shows the average practice of Arabic language teachers in North Al Batinah for the ChatGPT in teaching was $M = 3.37$ with a standard deviation of $SD = 0.50$, while the average practice of Arabic language teachers in South Al Batinah for the ChatGPT in teaching was $M = 3.21$ with a standard deviation of $SD = 0.53$. In the axis of improving learning using ChatGPT, the average practice of the Arabic language teachers in North Al Batinah for the ChatGPT was $M = 3.10$ with a standard deviation $SD = 0.62$, while the average practice of the Arabic language teachers in South Al Batinah was $M = 3.02$ with a standard deviation $SD = 0.78$. Regarding the axis of the effectiveness of the ChatGPT for Arabic language teachers, its average in North Al Batinah was $M = 3.15$ with a standard deviation $SD = 0.41$, while the average practice of Arabic language teachers in South Al Batinah was $M = 3.10$ with a standard deviation of $SD = 0.45$. The results of the t -test for the two independent samples appeared as follows: $t = 1.70$, $df = 124$, $P = 0.092$. Which indicates that there are no statistically significant differences in the practice of Arabic language teachers in the North and South Al Batinah governorates in the degree of Arabic language teachers' application of the ChatGPT in teaching at the statistical significance level of 0.05, as the value of $t(124) = 1.70$ and with a probability value of $P = 0.092$ is higher than the significance level of $\alpha = 0.05$, as well as for the sub-axes of metacognitive thinking strategies.

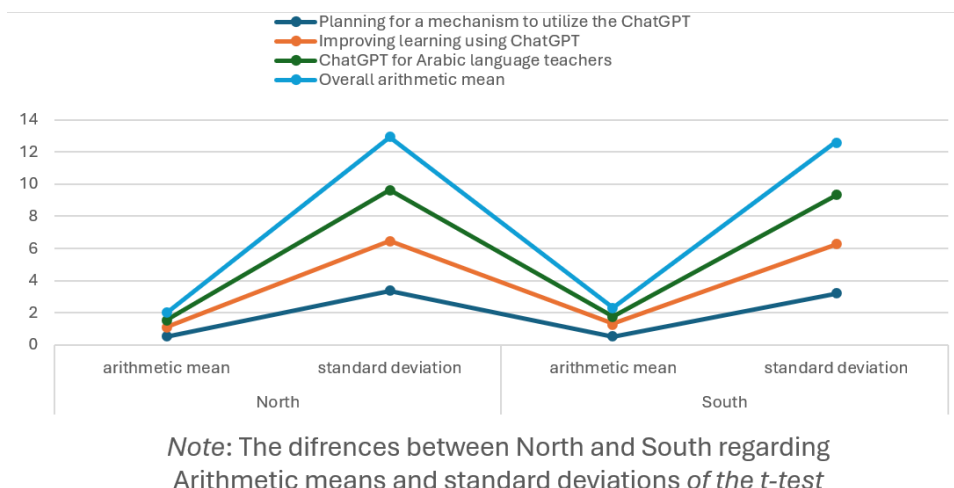


Fig. 2: Arithmetic means and standard deviations of the t -test: North vs South

As it can be seen in Figure 2 that there were no differences in the average estimates of the study sample members between the governorates of North and South Al Batinah, because the level of statistical significance extracted in all axes was higher than the significance level of 0.05. This can be attributed to the fact that the efforts of the Ministry of Education to encourage education

through the ChatGPT are balanced in the two governorates, as they contributed to enabling Arabic language teachers to develop their teaching skills and creative abilities in diversifying teaching methods through participation in training and vocational programs, as well as through continuous communication and exchange of experiences with various schools and governorates. The level of vocational training received by all Arabic language teachers in the North and South Al Batinah governorates is often the same.

5 Conclusion

This study has attempted to determine the application of the ChatGPT by Arabic language teachers in cycle two of teaching in the Sultanate of Oman. Moreover, it has provided the statistical differences in the degree of application of Arabic language teachers in cycle two of ChatGPT in teaching according to the educational governorate variable. All in all, the study found that the degree of application of Arabic language teachers in cycle two of the ChatGPT in teaching in the North and South Al Batinah governorates was high. Moreover, there were no statistically significant differences, $p = 0.092$ in the average estimates of the study sample members between the governorates of North and South Al Batinah. Based on such results, the next section provides some recommendations that should be taken into consideration.

6 Recommendations and Educational Implications

- The Ministry of Education's commitment to meeting the needs of Arabic language teachers in terms of planning to benefit from the ChatGPT and addressing the challenges associated with it.
- Presenting the experiences of some Arabic language teachers in applying the ChatGPT in various educational forums such as: conferences, seminars, and training workshops.
- Exchange visits between educational governorates to benefit from the expertise of Arabic language teachers, both male and female, in the ChatGPT in actual teaching processes.
- Promote the use of ChatGPT to develop critical thinking by raising topics and issues that are interesting for discussion.
- Enhancing the use of ChatGPT to improve students' positive interaction with the content of Arabic language lessons.

7 Proposals

- Providing material and technical support by allocating specific budgets by relevant authorities to support the use of ChatGPT in teaching, including providing appropriate hardware and technical infrastructure to ensure efficient access to and use of these tools.
- Develop digital educational content by developing digital educational resources that use ChatGPT, including interactive lessons and assessment tools that help teachers improve the student learning experience.
- Raising awareness in the educational community about the benefits and importance of using artificial intelligence in education among teachers, students, and parents through awareness campaigns and targeted educational resources.

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