

AN EMPIRICAL STUDY ON THE IMPACT OF AI-BASED INSTRUCTIONAL PROGRAMS ON IMPROVING STORY WRITING SKILLS AMONG TENTH-GRADE STUDENTS

SAMEER ABDULSALAM ALSOUS¹, AWS I. ABUEID^{2*}

¹Assistant Professor, College Of Education, Department Of Curriculum and Teaching Methods, Arab Open University, Amman, Jordan

^{2*}Assistant Professor, Faculty Of Computing Studies, Department Of Computing Studies, Arab Open University, Kuwait

E-mail: ^{2,*}a.abueid@aou.edu.kw

ABSTRACT

The study aimed to reveal the effect of artificial intelligence programs on improving story writing among tenth-grade students. The study employed an experimental method, and the study sample consisted of one group of 23 female students who were randomly selected in a cluster sampling manner. The study used a pre- and post-test. The results showed a statistically significant difference ($\alpha = .05$) for the students' scores on the story writing skills test before and after the application. Those who were exposed to the teaching strategy based on artificial intelligence programs in writing skills, combined with each skill, showed differences in favor of the post-application. The study made several recommendations, the most important of which was the use of artificial intelligence programs to enhance students' writing and storytelling skills.

Keywords: *Creative Writing, Artificial Intelligence, Magic School, Writing Skills, Education Technology, AI-Powered Learning*

1. INTRODUCTION

Writing is a means of communication represented by the writer. To deliver a meaningful message to the recipient, the reader, who in turn analyzes its meaning, reaches goals related to its comprehension, including the possibility of acting on its content. He expresses his views on it, memorizes it, and uses it when needed, or he finds pleasure in spending his free time due to his practice of reading it [1].

The function of language is linked to written expression, and teaching students in the aspect of writing skills aims to enable them with the basic skills of Writing, including drawing letters, writing words, composing phrases and sentences, expressing, organizing, and connecting ideas clearly and accurately, and the ability to write spelling correctly, Proficiency in calligraphy and transcription [2].

These skills end with producing written material in templates: creative, represented by writing stories, essays, thoughts, and perhaps poetry, and functional, related to writing letters, reports, and filling out forms.

Creative Writing contains original, unique, and unconventional elements, involving literary and emotional creativity [3]. Creative Writing is defined as writing characterized by originality of ideas and flexibility. To achieve this, it is essential to have training sessions focused on brainstorming and word lists, as these methods enable students to generate ideas easily and effortlessly [4].

It is important to guide students in expressing their thoughts and personal feelings, as this forms the fundamental entry point to motivate them toward Writing and creativity. Several areas can be suggested for developing creative Writing, such as writing speeches, stories, and poems, as well as writing and performing plays at various events [5]. These areas of creative Writing contribute to the functional growth of language, aid its development, and reflect the impact of practicing functional Writing in all its dimensions and components.

Many researchers argue that emotion and creativity are the two primary elements to consider when evaluating Writing as valuable. Writing represents a form of Art and serves as an important means of self-expression and a voice of freedom. Aesthetic experience plays a crucial role in

generating emotions and creativity, which, in turn, supports personal growth. Therefore, it helps students generate motivation to learn a language by providing them with more space and time to express themselves and experience the beauty of language, aligning with the democratic and rhetorical aspects of language [6].

Creative Writing is defined by originality, fluency, flexibility, and elaboration. It goes beyond the expected or conventional and involves metaphorical thinking, analysis, synthesis, and evaluation [7].

When evaluating creative Writing, attention must be paid to the organization of content and paragraphs, punctuation marks, and the soundness of writing mechanisms, including grammar and spelling [8], in addition to fluency, flexibility, originality, and elaboration.

As for the behavioral indicators that indicate creative writing skills, they are fluency. Fluency is determined by the number of words written in a unit of time, writing words synonymous with the same meaning, citing supporting arguments and evidence, and the ability to describe and depict in different ways. Originality is determined by the presence of new ideas, choosing an innovative title for the topic, using metaphorical sentences and rare similes, choosing suggestive and unique words, choosing an appropriate title for the story, having the element of imagination prominent in the story, having the end of the story reflect the development of its events, and choosing words suggestive of meaning. Flexibility is determined by the diversity of ideas presented, writing about the topic from different dimensions, the diversity of ideas addressed in the story, providing explanations, interpretations, and conclusions, and that the sequence of events leads to the knot and then to the solution, describing the events and distinguishing the characters from different dimensions, and diversity in Ideas, approaching the topic from different dimensions and providing explanations or justifications for a particular idea.

Elaboration is defined as generating a new idea related to an existing one, providing details and clarifications to the presented ideas, offering illustrative examples, reinforcing an idea with innovative ideas, and adding new details to the topic. The organization of the content is determined by the main sentence in the paragraph that expresses the idea, the interconnection between sentences within a paragraph and between paragraphs, the sequence in

presenting ideas, and the division of the topic into an introduction, a presentation, and a conclusion.

Finally, the integrity of writing mechanisms includes correct grammar, spelling, and the proper use of punctuation marks. [9]

The story is an integral part of creative Writing and a pillar of education. The story satisfies many students' psychological, mental, and social needs. It helps in acquiring experiences and skills appropriate to their developmental characteristics

. Stories develop creative thinking and imagination among students. Stories are a natural way to develop thinking and learning among students. Because it contains many different elements and relationships of things organized in a special sequence of events, it is a source of thought. It also requires understanding, application, and analysis.

According to Mobaideen (2003), the importance of stories lies in their ability to present characters, situations, and experiences that reflect people's lives, helping learners understand themselves, others, and the world in which they live. The stories expose how people behave in many diverse situations, which the reader can identify with and relate to the characters they read about, who may be similar to them in some aspects of their lives. Through these characters, the reader learns how to accept themselves.

Stories reveal the characters' feelings and emotions, enabling the reader to understand the emotions of these characters and, in turn, identify their own emotions. Stories and novels demonstrate the extent to which different human relationships are intertwined, thereby increasing the reader's understanding of themselves and others. [10]

In this era of technological acceleration, numerous programs have emerged to assist with Writing. For example, voice typing, in which students see an easy solution to escape from Writing, stay away from the rules of spelling and grammar, and limit themselves to sending messages to others, in addition to the spread of artificial intelligence programs that have provided creative solutions in the field of Writing by achieving harmony between Writing and artificial intelligence in light of the tremendous technological acceleration.

Artificial intelligence aims to create systems that enable them to learn, reason, perceive, and interact. Therefore, artificial intelligence programs can facilitate effective teaching and learning. Artificial intelligence relies on a set of principles that guide its development and applications, including the analysis

of data to identify patterns and make informed decisions.

The more data available, the more accurate the model can make predictions, as well as through iterative processing, adaptation, and logical inference. Some artificial intelligence systems rely on logical deductions to solve problems based on available rules and knowledge.

Many AI-based platforms have been launched, aiming to provide AI-driven services across various fields, such as the Co-pilot platform and Quillbot, which include multiple generative AI applications. The Magic School program, which will be examined and tested in this study, demonstrates how AI can apply knowledge to solve new problems in human-like ways. For instance, AI technology can meaningfully respond to human conversations, create original images and texts, and make decisions based on real-time data inputs.

Any educational institution can integrate AI capabilities into its applications. These programs can benefit tasks such as paraphrasing (Paraphrasing Tool), summarizing (Summarizer), grammar checking (Grammar Check), translation (Translator), citation generation (Citation Generator), co-writing assistance (Co-Writer), finding unexpected ideas (Finding Unexpected Ideas), providing suggestions for better Writing (Provide Suggestions for Better Writing), and creating images inspired by your ideas (Create Images from Your Ideas).

The two researchers will examine these capabilities in this study and see how they improve students' creative (story) Writing.

Objective of the study

This study aimed to investigate the impact of artificial intelligence programs on improving story writing among tenth-grade students, as well as on their overall story writing skills and on each of its components (organizing content, sequence of events, character development, time and place, complexity, and sound writing mechanisms) in the test. This improvement is attributed to the teaching strategy based on artificial intelligence programs.

Research Problem and Research Questions

The problem of the study crystallizes in the weakness of writing practices and the lack of writing skills among students in the field of creative Writing, especially in the genre of stories. Previous studies have confirmed the existence of weaknesses in students' writing skills and have suggested designing

instructional programs to develop creative writing skills in the arts of essay writing, story writing, and dialogue in order to alleviate this problem [5].

The problem of the study also emerges through the researchers' awareness of the reality of the educational field related to teaching writing skills to school students and the level of interest shown in these skills by teachers. This situation led to identifying the problem, investigating it, and attempting to provide solutions through the use of artificial intelligence programs. Accordingly, the problem of the present study lies in examining the effect of artificial intelligence programs on improving story writing skills among tenth-grade students by answering the following question:

Are there statistically significant differences at the significance level ($\alpha = 0.05$) in improving overall story writing skills and each of its components (content organization, sequence of events, character development, time and place, complexity, and writing mechanics) in the pre-test and post-test attributable to the teaching strategy based on artificial intelligence programs?

2.1 Study Significance

This study derives its significance from its attempt to focus on the role of artificial intelligence in improving creative writing skills (story writing) among tenth-grade students. This skill does not receive adequate care and attention from Arabic language teachers in our schools. Its importance also lies in its effort to harmonize Writing, creativity, and technology. Language educators are responsible for leveraging new advancements and utilizing them to benefit the Arabic language. In this era, the Arabic language deserves the attention of both specialists and non-specialists .

This study is one of the rare attempts in the Arab world to bridge the gap between the Arabic language and artificial intelligence. It seeks to enhance creative Writing (story writing) by connecting it with AI through programs such as Magic School, one of the latest human inventions, to merge the Arabic language with artificial intelligence. This integration aims to demonstrate that the Arabic language is not rigid but flexible, interactive, and open to embracing new developments.

Its importance also stems from the significance of utilizing artificial intelligence in the educational process. It is expected that artificial intelligence will permeate all areas of knowledge, particularly in educational processes, teaching, and training

methods, as this has a positive impact on the learner, making them feel more satisfied with themselves.

This study coincides with the Jordanian Ministry of Higher Education's focus on artificial intelligence, the development of educational software based on it, and the training of educators in this field. Therefore, this study will contribute to evaluating this pioneering educational experience. Undoubtedly, the results of such research highlight both the positive and negative aspects that may be overlooked by decision-makers, providing them with much-needed feedback.

This study will also serve as a starting point for researchers and scholars to delve into the experience, particularly given the scarcity of research that attempts to link the Arabic language with artificial intelligence.

2.2 Study Scope and Limitations

This study examines the impact of artificial intelligence programs on enhancing story-writing skills among 10th-grade students. It is limited to a sample of 10th-grade students from the University District. The study was implemented in the first semester of the academic year (2024/2025). Its generalization to the study population is determined based on its tools, validity, and reliability

3. KEY TERMS OF THE STUDY

- **Creative Writing:** For this study, creative Writing is defined as writing characterized by fluency, originality, flexibility, and elaboration. It may appear in various forms such as essays, stories, and dialogues; however, the present study focuses exclusively on story writing.
- **Story:** A narrative that presents facts about humans or depicts situations, events, and themes related to different characters in an engaging manner. Stories are considered an essential instructional method, as they help capture students' attention and present information in an attractive and meaningful way [6].
- **Artificial Intelligence (AI):** A subfield of computer science concerned with the development of systems and machines capable of performing tasks that typically require human intelligence. These tasks include interacting logically with the environment, learning from previous experiences, and adapting to new situations. This field emerged in the mid-

twentieth century as researchers began exploring ways to design machines that simulate human cognitive processes. In the present study, the use of artificial intelligence is limited to the Magic School program.

- **Magic School:** An artificial intelligence-based program utilized in this study to support the generation of social stories and the rephrasing of written content.

4. LITERATURE REVIEW

In a previous study, the impact of artificial intelligence techniques on educational practices and language acquisition was examined, with a particular focus on learning Arabic and English. The study drew on a diverse sample of language learners and teachers from educational institutions that utilize AI tools in their language programs, comprising university students, language teachers, and educational technology experts. The findings indicated that AI techniques significantly enhance language learning outcomes by providing personalized learning experiences tailored to individual learners' needs, improving vocabulary acquisition, pronunciation, and overall language proficiency. Additionally, AI was found to enhance learners' motivation and retention of language skills. The study highlighted the effectiveness of AI in creating flexible and advanced learning environments. It emphasized the importance of integrating educational goal categorization into AI applications to support emotional interaction and effective communication skills [7].

Another study examined the integration of generative artificial intelligence (GAI) in primary literacy education from the perspectives of teachers, parents, and students. The findings demonstrated the potential of GAI to create personalized learning materials that foster creativity and provide targeted feedback, thereby improving students' writing skills. However, the study also raised concerns related to intellectual property, student agency, and the spread of misinformation. The researchers emphasized the need for teacher supervision and recommended maintaining a balanced approach when using GAI in educational contexts to ensure content accuracy and authenticity [8].

A further study focused on the use of artificial intelligence in teaching Writing to English language learners through text-generation tools such as ChatGPT. The sample included students with special learning needs who received different types of feedback, including AI-based feedback, teacher

feedback, and a combination of both. The results showed that students who used AI tools demonstrated improvements comparable to those achieved through traditional instructional methods. Nevertheless, the study highlighted challenges related to verifying the authenticity of students' work and the potential reduction of critical thinking skills, recommending guided and balanced use of AI tools within the curriculum [9].

Another study investigated the use of digital storytelling as a pedagogical approach to developing awareness of artificial intelligence among elementary school students. The study involved primary school students who participated in a digital storytelling program designed to enhance their understanding of AI concepts through creative story writing. The findings indicated that students were able to apply AI knowledge to construct realistic scenarios and propose practical solutions within their narratives, demonstrating a deeper understanding of AI concepts and their applications. The study concluded that digital storytelling is an effective method for promoting AI awareness at an early educational stage [10].

In higher education, a study explored the effects of generative AI platforms on narrative intelligence and writing self-efficacy among university students. Using a quasi-experimental design, the study found that students who utilized AI-based writing platforms showed significant improvements in plot construction, character development, and overall narrative quality compared to those using traditional platforms. The findings supported the integration of generative AI tools into educational programs to enhance students' narrative writing skills [11].

Another study examined the role of technology in improving special education practices, focusing on how digital tools contribute to enhancing learning opportunities for students with special needs. The use of personal devices in classrooms was found to improve access to information, reduce handwriting-related errors, increase interaction, and promote collaborative learning. Despite these benefits, the study highlighted challenges such as technical failures and emphasized the importance of teacher training to ensure the effective use of technology in special education settings [12].

Finally, a study investigated the effectiveness of digitization and artificial intelligence applications in art education. The findings demonstrated that digital and AI-based technologies offer innovative opportunities for artistic design and creative expression in art education. The study recommended

providing specialized training programs for art education teachers and adopting modern strategies to develop digital and AI skills across different educational levels [13].

4.1 Synthesis and Research Gap

Previous studies have varied in their approaches to artificial intelligence and its role in improving students' writing skills across different educational contexts. Some studies focused on enhancing AI techniques to support educational practices, improve language acquisition, and facilitate effective interaction in multilingual environments [7]. Other studies examined the integration of generative artificial intelligence (GAI) in basic education, highlighting its potential to create personalized learning materials that enhance students' writing skills [8,9]. Additional research explored how students develop their understanding of artificial intelligence through creative expression in story writing and digital storytelling activities [10]. Moreover, several studies investigated the impact of generative AI platforms on narrative intelligence and writing self-confidence among university students, demonstrating improvements in plot construction, character development, and the production of distinctive narrative texts [11]. Other research emphasized the broader role of educational technology in improving learning opportunities, reducing handwriting-related errors, enhancing access to information, and increasing interaction in classroom settings, while also identifying challenges such as technical failures and the need for effective teacher preparation [12,13].

Despite the valuable contributions of these studies, research examining the impact of artificial intelligence programs on story writing skills among tenth-grade students remains limited. Most previous studies focused on higher education, general writing skills, artificial intelligence literacy, or broader educational technology applications, rather than specifically addressing story writing as a creative skill at the secondary school level, particularly within the context of Arabic language instruction. Accordingly, the present study addresses this research gap by empirically investigating the effect of AI-based programs on improving story writing skills among tenth-grade students. By adopting a semi-experimental design and targeting specific components of story writing, this study extends existing literature and provides original empirical evidence that distinguishes it from prior research.

5. RESEARCH PROCEDURES

5.1 Research Approach

This study follows a semi-experimental design. Figure 1 explains the flow chart of the study, where the experimental group (G1) first undergoes a pre-test (O1), then is exposed to AI programs (X1), and finally takes a post-test (O2) to assess the impact of the intervention. The design is structured as follows: G1 represents the experimental group, O1 refers to the pre-test, X1 indicates exposure to the AI programs, and O2 denotes the post-test.

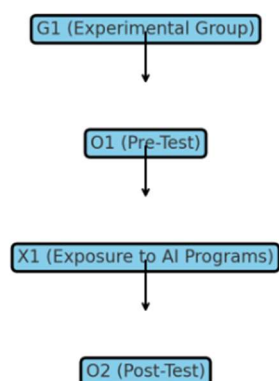


Figure 1: The Semi-Experimental Design

5.2 Study Population and Sample

The study population consisted of tenth-grade students from schools under the Directorate of Al-Jami'a District for the academic year 2024/2025. A random cluster sample was selected, comprising one class with a total of 23 female students.

5.3 Study Tools

5.3.1 Creative Writing Test (Pre- and Post-Test)

The researchers developed a creative writing (story) test by establishing specific criteria and behavioral indicators associated with story writing, based on relevant educational literature and the learning outcomes of the Arabic language curriculum for tenth-grade students. The test assessed the following dimensions:

- **Content Organization:** clarity of the main idea, presence of supporting sub-ideas, and division of the story into paragraphs (introduction, climax, resolution), and cohesion.
- **Sequence of Events:** chronological order, logical progression of events from simple to complex, and connections between events.

- **Characters:** clarity of character descriptions, roles, and relationships.
- **Time and Place:** consistency of time references (past, present, future), accurate description of the setting, and the relationship between time and place.
- **Climax:** logical development of events leading to the climax, inclusion of an element of surprise, and resolution.
- **Writing Mechanics:** grammatical accuracy, correct spelling, and appropriate use of punctuation marks. The test consisted of an essay question requiring students to write a short story within a 30-minute time limit.

5.3.2 Test Validity

To establish content validity, the test, along with its criteria and indicators, was reviewed by 11 experts specializing in educational psychology, Arabic language curricula and teaching methods, measurement and evaluation, and Arabic language supervision. Based on their feedback, necessary modifications, deletions, and additions were made until the instrument reached its final form.

5.3.3 Test Reliability

To verify the reliability of the test, a pilot study was conducted on a sample of 22 students who were not part of the main study sample. Two raters independently scored the test responses. The average scores were calculated, and inter-rater reliability was determined using Pearson's correlation coefficient, which yielded a value of 0.81, indicating acceptable reliability at the significance level ($\alpha = 0.05$).

5.4 Implementation Procedures

5.4.1 Pre-test Implementation

After selecting the study sample, the pre-test was administered under controlled conditions to minimize potential threats to the validity of the results.

5.4.2 Teaching Process

Following the pre-test, the students received training on artificial intelligence programs and learned how to utilize them to write and improve their stories. The instructional intervention lasted for one month.

5.4.3 Post-test Implementation

The post-test was administered after the completion of the instructional intervention under the same conditions as the pre-test.

6. STUDY RESULTS

Research Question: Are there statistically significant differences at the significance level ($\alpha = 0.05$) in the improvement of overall story writing skills and each of its components (content organization, event sequencing, character portrayal, setting, plot, writing mechanics) in the pre-test/post-test attributed to the teaching strategy based on artificial intelligence programs?

The means and standard deviations of the study sample's scores in the story writing skills test during both the pre-test and post-test were calculated to answer this question. A paired t-test was used to identify statistical differences between the means, as shown in the table below.

Table 1. Descriptive Statistics for Story Writing Skills in Pre-test and Post-test.

Skill Area	Test	N	Mean	Standard Deviation
Content Organization	Pre-test	23	15.39	3.041
	Post-test	23	17.30	1.987
Event Sequence	Pre-test	23	12.87	3.123
	Post-test	23	16.57	2.171
Character Development	Pre-test	23	12.04	2.421
	Post-test	23	13.57	1.441
Time and Place	Pre-test	23	12.35	1.555
	Post-test	23	13.43	1.080
Climax	Pre-test	23	12.43	1.562
	Post-test	23	13.26	1.839
Writing Mechanics	Pre-test	23	12.78	1.783
	Post-test	23	13.70	1.259
Writing Skills (Total)	Pre-test	23	77.87	11.745
	Post-test	23	87.83	7.177

Table 2. Paired Sample T-Test Results for Story Writing Skills

Skill Area	T Value	df	Sig.
Content Organization	3.613	22	.002
Event Sequence	7.690	22	.000
Character Development	3.238	22	.004
Time and Place	6.576	22	.000
Climax	2.702	22	.013
Writing Mechanics	2.531	22	.019
Writing Skills (Total)	7.855	22	.000

Table 1 presents the descriptive statistics for the study sample's performance on the story writing skills test in the pre-test and post-test, showing higher mean scores in the post-test across all assessed skill areas. Table 2 reports the results of the paired sample t-tests, which indicate statistically significant differences at the significance level ($\alpha = 0.05$) between the pre-test and post-test scores, favoring the post-test for all skills.

Specifically, statistically significant improvements were found in content organization ($t = 3.613$, $p = .002$), event sequence ($t = 7.690$, $p = .000$), character development ($t = 3.238$, $p = .004$), time and place ($t = 6.576$, $p = .000$), climax ($t = 2.702$, $p = .013$), and writing mechanics ($t = 2.531$, $p = .019$). In addition, the overall story writing skills score showed a statistically significant improvement in the post-test compared to the pre-test ($t = 7.855$, $p = .000$), indicating that the AI-based teaching strategy had a positive effect on students' story writing performance.

7. DISCUSSION

The results of the study indicate that students' performance in story writing skills improved significantly from the pre-test to the post-test. This improvement can be attributed to the nature of the instructional approach adopted in the study, which structured Writing as a staged process including pre-writing, Writing, and post-writing phases. Such an approach is consistent with established instructional frameworks for teaching Writing that emphasize process-based instruction, scaffolding, and continuous feedback [14]. During each stage, students were guided through specific tasks that supported idea generation, organization, and refinement of their written stories. The integration of AI-based programs, particularly those employing conversational and interactive approaches, appears to have stimulated students' cognitive engagement, activated their imagination, and provided targeted support, especially during the pre-writing and revision stages. Consequently, students demonstrated greater attention to essential story

elements, including character development, setting (with particular emphasis on time and place), and plot structure.

Moreover, the observed improvement in students' creative writing performance aligns with theoretical perspectives that emphasize the educational and expressive value of creative Writing in language learning. Creative Writing is widely recognized as a vital component of language curricula due to its role in fostering originality, emotional expression, and deeper engagement with language [15]. In this context, the integration of artificial intelligence tools appears to have enhanced these pedagogical benefits by providing interactive and adaptive support that encourages students to experiment with ideas, refine their narratives, and engage more confidently in the writing process.

The findings of the present study are consistent with previous research, which highlights the positive impact of artificial intelligence on language learning and writing development. Prior studies have shown that artificial intelligence techniques significantly enhance language learning outcomes by improving vocabulary acquisition, pronunciation, and overall language proficiency through personalized learning experiences [16]. Similarly, research examining the integration of generative artificial intelligence in literacy education has demonstrated that AI-supported instruction facilitates personalized feedback and enhances students' writing skills [19]. In addition, studies focusing on AI-supported feedback in writing instruction have shown that students who receive AI-based feedback achieve improvements comparable to those who receive teacher or mixed feedback [20].

Furthermore, the present findings align with studies emphasizing the role of generative AI platforms in enhancing narrative intelligence and writing self-confidence. Previous research has reported that AI-based writing tools contribute to improvements in plot construction, character development, and overall narrative quality among university students [18]. Additionally, studies on digital storytelling have highlighted its effectiveness in fostering creative expression and developing awareness of artificial intelligence among learners [17]. Other research has emphasized the broader role of educational technology in enhancing learning opportunities, reducing writing-related errors, and increasing student engagement, while also identifying challenges related to technical limitations and the need for effective teacher preparation [21,2].

Overall, the statistically significant differences observed between pre-test and post-test scores across all story writing skill components confirm the effectiveness of the AI-based teaching strategy employed in this study. These findings suggest that integrating artificial intelligence programs into story writing instruction can meaningfully support the development of creative writing skills among tenth-grade students. By promoting a balanced integration between technology and language learning, AI-based approaches offer valuable opportunities for enhancing students' writing performance and contributing to the development of broader language skills, including reading, listening, speaking, and Writing.

8. CONCLUSION

This study examined the impact of artificial intelligence-based programs on improving story writing skills among tenth-grade students using a quasi-experimental pre-test/post-test design. The findings revealed statistically significant improvements in students' overall story writing performance as well as in all assessed skill components, including content organization, event sequencing, character development, setting, climax, and writing mechanics. The results indicate that integrating AI-supported writing tools within a structured process-writing framework can effectively enhance students' creative writing skills in Arabic language instruction. By providing interactive support during the pre-writing, Writing, and post-writing stages, AI programs contributed to greater student engagement and improved writing outcomes. Overall, the study highlights the potential of artificial intelligence as a pedagogical support tool for developing story writing skills at the secondary school level and contributes empirical evidence to the limited body of research on AI-assisted Arabic language education.

9. RECOMMENDATIONS

Based on the findings of the study, the following recommendations are proposed:

1. Integrating AI-based programs into language instruction to enhance students' writing skills in general, and story writing skills in particular, as part of structured teaching and learning practices.
2. Encouraging postgraduate research that explores the integration of artificial intelligence with Arabic language learning across different language skills and educational levels.

3. Organizing professional development and training programs for language teachers to familiarize them with AI-based tools and their pedagogical potential, particularly in supporting writing instruction.

REFERENCES:

- [1] Al-Sous S. Athar Barnamaj Ta'leemi Madar Bil-Hasoub Fi Tataweer Maharat Al-Kitabah Al-Ibda'iyyah Fi Al-Lughah Al-'Arabiyyah Ladaa Talabat Al-Saff Al-Tasee' Al-Asasi. PhD dissertation. Unpublished; 2003.
- [2] Zakariya M. Fa'aliyat Al-Raqmanah Wa Tatbeeqat Al-Dhaka'a Al-Istina'ee Fi Tataweer Manahij Al-Tarbiyah Al-Fanniyah. Al-Majallah Al-Ilmiyyah Li-Kuliyat Al-Tarbiyah, Assiut University (Egypt). 2023;39(10):94–110.
- [3] Mubaidin M. Al-Dhaka'a Al-'Aatifee Wa Al-Sehah Al-'Aatifeeyah. Beirut (Lebanon): Al-Maktab Al-Islami; 2003.
- [4] Al-Sous S, Al-Tawalibah M. Athar Barnamaj Hasoobi Fi Tataweer Maharat Al-Kitabah Al-Ibda'iyyah Fi Al-Lughah Al-'Arabiyyah Ladaa Talabat Al-Saff Al-Tasee' Al-Asasi. Majallat Ittihad Al-Jami'at Al-'Arabiyyah Li-Tarbiyah Wa 'Ilm Al-Nafs. 2010;8(1):12–43.
- [5] Madkour A. Tadrees Funoon Al-Lughah Al-'Arabiyyah. Cairo (Egypt): Dar Al-Fikr Al-'Arabi; 1997.
- [6] Hashim F. Qisas Al-Atfaal Qabl Al-Madrasa. 1st ed. Riyadh (Saudi Arabia): Dar Al-Zahra; 2008.
- [7] Al-Naqah M. Al-Marja' Fi Ta'leem Al-Lughah Al-'Arabiyyah Li Al-Natiqeen Bi Ghairiha: Al-Asaas Wa Al-Madaakhil Wa Istratijiyyat Al-Tadrees. 1st ed. Cairo (Egypt): Dar Al-Fikr Al-'Arabi; 2017.
- [8] Ta'ima R, Manaa M. Tadrees Al-'Arabiyyah Fi Al-Ta'leem Al-'Aam: Nadhariyyat Wa Tajareeb. Cairo (Egypt): Dar Al-Fikr Al-'Arabi; 2001.
- [9] Belas O. The perfectionist call of intelligibility: secondary English, creative Writing, and moral education. *Philosophical Inquiry in Education*. 2016;24(1):37–52.
- [10] Medd E. The Effects of Facilitated Incubation on Fourth Graders' Creative Writing. PhD dissertation. Information and Learning Company; 2002. Available from: <http://www.lib.umi.com/dissertations/fullcit/3040400>
- [11] Renzulli J, Callahn C. Creative Training Activities for Secondary School Students. 1st ed. New York (NY): Delacourte Press; 1988.
- [12] Chaffee J. Critical Thinking and Thoughtful Writing: A Rhetoric with Readings. 1st ed. New York (NY): Houghton Mifflin, 1999.
- [13] Hansen J. Evaluation: the center of writing instruction. *The Reading Teacher*. 1996;50(3):188–195.
- [14] Illinois State University. NCATE Folios: Writing Instruction Syllabi [Internet]. Available from: <https://www.coe.ilstu.edu/ncate/ncatefolios/reading/syllabi/c+i461.htm>. Accessed: 01 Mar 2025.
- [15] Wang L. Rethinking the significance of creative Writing: a neglected art form behind the language learning curriculum. *Cambridge Open-Review Educational Research e-Journal*. 2019;6:110–122.
- [16] AlAfnan MA. Artificial intelligence and language: bridging Arabic and English with technology. *Journal of Ecohumanism*. 2025;4(1):240–256.
- [17] Ng DTK, Luo W, Chan HMY, Chu SKW. Using digital story writing as a pedagogy to develop AI literacy among primary students. *Computers and Education: Artificial Intelligence*. 2022;3:100054.
- [18] Pellas N. The effects of generative AI platforms on undergraduates' narrative intelligence and writing self-efficacy. *Education Sciences*. 2023;13(11):1155.
- [19] Han A, Zhou X, Cai Z, Han S, Ko R, Corrigan S, Peppler KA. Teachers', parents', and students' perspectives on integrating generative AI into elementary literacy education. In: *Proceedings of the CHI Conference on Human Factors in Computing Systems*; May 2024; pp. 1–17.
- [20] Litman T. Using AI for Writing Instruction for English Learners. Master's thesis. University of Wisconsin–River Falls (USA); 2024.
- [21] Sundet B. Optimizing Special Education with the Use of Technology in the Classroom. Unpublished report; 2024.