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Linguistic communication in light of the development of artificial intelligence applications

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التواصل اللغوي في ظل تطور تطبيقات الذكاء الاصطناعي

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ABSTRACT:

The rapid advancement of artificial intelligence technologies has led to significant changes in how we interact with language and engage in cross-cultural communication. AI applications, such as machine translation and text analysis, have facilitated communication between individuals from different parts of the world, thereby enhancing mutual understanding. However, this progress may also have unintended effects on cultural identity, as certain cultural nuances might be lost in the translation process. This highlights the importance of developing AI technologies that consider cultural and linguistic diversity, ensuring effective communication without negatively impacting cultural identity. Additionally, raising awareness of how AI should be used in ways that preserve cultural specificities is crucial. AI systems should be trained to understand different cultural contexts to ensure a more balanced and transparent interaction in cross-cultural communication.

Keywords: Artificial intelligence, linguistic communication, modern technologies, language, interaction...

ملخص البحث

أدى التطور السريع في تقنيات الذكاء الاصطناعي إلى تغييرات ملحوظة في كيفية تفاعلنا مع اللغة والتواصل بين الثقافات. فقد ساهمت تطبيقات الذكاء الاصطناعي كالترجمة الآلية وتحليل النصوص في تسهيل التواصل بين الأفراد من مختلف أنحاء العالم، مما عزز الفهم المتبادل. ومع ذلك، يمكن أن يؤدي هذا التقدم إلى تأثيرات غير مرغوب فيها على الهوية الثقافية، حيث قد تُفقد بعض الخصوصيات الثقافية في عملية الترجمة. ومن هنا، يبرز أهمية تطوير تقنيات الذكاء الاصطناعي بحيث تأخذ في الحسبان التنوع الثقافي واللغوي، ما يساهم في تعزيز التواصل الفعال دون التأثير السلبي على الهوية الثقافية. كما ينبغي تعزيز الوعي بكيفية استخدام الذكاء الاصطناعي بما يتماشى مع الحفاظ على الخصوصيات الثقافية، ويجب تدريب الأنظمة على فهم السياقات الثقافية المختلفة لضمان تفاعل أكثر توازنًا وشفافية في التواصل بين الثقافات.

الكلمات المفتاحية: الذكاء الاصطناعي، التواصل اللغوي، التقنيات الحديثة، اللغة، التواصل.

1. Introduction:

In the modern era, artificial intelligence (AI) has become an essential part of our daily lives, significantly contributing to the enhancement of various aspects of life. It is one of the fields that has witnessed tremendous advancements in recent years, improving the accuracy of numerous processes, particularly in language and communication. AI applications, such as machine translation and text analysis, have revolutionized the way humans interact with language, making cross-cultural and international communication more seamless and accessible.

In this context, it has become necessary to examine its impact on cultural identity and social interaction, especially with the continuous advancement of these applications. The influence of AI extends beyond merely improving linguistic comprehension; it also shapes the way we communicate with others and engage with diverse cultures. This underscores the importance of understanding AI's role in fostering human interaction while preserving cultural identity in the face of rapid technological progress.

Significance of the Study:

This study holds great importance in light of the rapid expansion of AI applications across all aspects of life, particularly in communication. With millions of people relying on these technologies daily, understanding their impact on the quality of linguistic communication is crucial. If these applications are refined to align with linguistic and cultural specificities, they can help bridge language gaps and enable more effective and precise communication. However, it is equally important to examine their potential negative effects, as excessive reliance on AI tools may pose a threat to the quality of human interaction.

Research Problem:

The core issue of this research lies in understanding how the development of AI applications affects the quality of linguistic communication—whether by enhancing interpersonal connections or by creating linguistic and cultural gaps that may lead to the loss of precise meanings. Additionally, the study seeks to explore how to strike a balance between utilizing these advanced technologies and maintaining high-quality human communication. To what extent can AI applications improve language comprehension and social interaction without compromising cultural identity?

Research Hypothesis:

AI applications can significantly enhance language comprehension and social interaction, provided they are used in a thoughtful and balanced manner that preserves cultural diversity and strengthens, rather than undermines, cultural identity.

Research Objectives:

The objectives of this study are as follows:

- To explore the concept of artificial intelligence (AI), its evolution over time, its core objectives, distinctive characteristics, and the various fields it contributes to.
- To understand how AI applications are utilized in language processing and analysis, as well as how they enhance linguistic comprehension across different cultures.
- To analyze the impact of AI applications on the cultural identity of societies and examine how these applications influence linguistic communication methods among individuals in various contexts.
- To provide recommendations for the development and improvement of AI use in linguistic and cultural contexts in ways that align with individual needs.

Research Methodology:

This study employs a combination of research methodologies to analyze the impact of AI applications on linguistic communication, including:

- **Descriptive-Analytical Method:** This method aims to analyze and examine the effects of AI applications on various aspects of linguistic communication by classifying these applications and assessing their effectiveness.
- **Comparative Method:** This approach compares traditional communication methods (direct human interaction) with AI-based communication methods in terms of accuracy, efficiency, and the ability to maintain cultural contexts.

Research Structure:

To address this topic, the study is divided into the following sections:

- The Concept and Evolution of Artificial Intelligence
- The Role of AI Applications in Enhancing Linguistic Accuracy and Understanding
- The Impact of AI on Cultural Identity and Social Communication

2. The Concept and Evolution of Artificial Intelligence

Artificial intelligence is a branch of computer science aimed at developing systems capable of simulating human intelligence. Its applications are highly diverse, spanning multiple fields such as machine learning, natural language processing, and computer vision. One of the most significant areas influenced by AI technologies is linguistic accuracy and comprehension, made possible through advanced algorithms and the ability to analyze vast amounts of data. AI systems have greatly improved machine translation, enhanced linguistic understanding, and provided precise recommendations for users across various applications.

2.1. The Concept of Artificial Intelligence

The concept of artificial intelligence (AI) has evolved significantly over time, intersecting with various fields of knowledge and technology. Traditional theoretical definitions describe AI as the ability to enable machines to simulate human intelligence, meaning the capability to perform tasks that typically require rational thinking, such as reasoning, comprehension, and learning from experience.

2.1.1. The Concept of Artificial Intelligence and Linguistic Intelligence

One of the earliest definitions of AI was provided by John McCarthy, one of the founding figures of the field. In 1956, he coined the term "**Artificial Intelligence**" during the Dartmouth Conference, which marked the official beginning of AI as a discipline. McCarthy aimed to develop machines capable of performing tasks that had traditionally required human intelligence, such as thinking, learning, and decision-making.¹

Stuart Russell and Peter Norvig, in their book *Artificial Intelligence: A Modern Approach*, define AI as "**the study of agents that receive inputs from the environment and take actions to maximize their chances of success**"². Meanwhile, Alan Turing (1950) remarked that "**we can only see a short distance ahead, but we can see much that needs to be done, highlighting the vast potential of AI**"³.

In this context, another relevant concept emerges: *Linguistic Intelligence*. Jaber Abdel Hamid Jaber, in his book on *Multiple Intelligences and Understanding*, defines linguistic intelligence as "**the**

ability to use words effectively, whether orally—as in the case of storytellers, orators, and politicians—or in writing, as with poets, playwrights, and journalists."⁴

Linguistic intelligence involves mastery of language structure, sounds, meanings, and its pragmatic aspects—how language is used in practice. Some of its key applications include:

- **Persuasion:** Using language to convince others to adopt a particular course of action.
- **Memory Aids:** Using language as a tool for self-reference and retention of information.

By integrating AI with linguistic intelligence, modern technologies have developed sophisticated systems capable of understanding and generating human language with increasing accuracy and effectiveness.

According to this definition, linguistic intelligence manifests in individuals who excel in skills such as reading, writing, creative language use, understanding complex terminology, and sensitivity to sounds and rhythms.

The various definitions of artificial intelligence emphasize its ability to perform tasks that require human-like intelligence, including learning from experience, understanding natural language, recognizing patterns, and making decisions. The **Institute of Electrical and Electronics Engineers (IEEE)** defines AI as "**the ability to perform complex tasks that require human-like thinking.**"⁵

However, modern AI systems have expanded beyond this definition by incorporating advanced technologies such as **machine learning, neural networks, and natural language processing (NLP)** to achieve the following:⁶

- **Predictions:** AI systems use historical and current data to analyze trends and predict future outcomes, such as financial forecasts or weather predictions.
- **Content Generation:** AI can create new content based on learned patterns from previous data, such as generating texts, images, or even videos using advanced algorithms.
- **Personalized Recommendations:** AI analyzes user preferences and relevant data to offer tailored recommendations, as seen in streaming platforms like Netflix or e-commerce sites like Amazon.
- **Decision-Making:** AI can assist in decision-making by analyzing large datasets, particularly in fields such as business and healthcare, where AI supports medical diagnoses based on patient data.

Natural Language Processing (NLP) is one of the most crucial AI technologies for improving communication. It plays a key role in understanding, analyzing, and processing language efficiently. The significance of NLP lies in several aspects:⁷

- **Text Analysis and Understanding:** NLP helps analyze text meaning and interpret content accurately, whether the text is written naturally by humans or generated by AI. This is essential for processing data from various sources like emails, social media posts, articles, and reports.
- **Text Generation:** NLP technologies can autonomously generate new texts, aiding in creating reports, articles, and interactive dialogues. These applications are particularly useful in journalism, marketing, and content creation.
- **Language Translation:** NLP plays a fundamental role in developing machine translation systems, enabling automatic text conversion between different languages. This is especially valuable for international business and global communication, breaking language barriers and fostering cross-cultural interactions.

- **Information Extraction:** NLP can extract key concepts, entities, and relationships from large text datasets. This application is widely used in fields such as data science, procurement analysis, and capital investment evaluation.
- **Natural Interaction with Users:** Advanced NLP systems enable seamless interaction with users through conversational AI or voice command responses, making AI-powered communication more intuitive and efficient.

These advancements in NLP not only improve AI's ability to process language but also enhance human-AI interactions, making communication more fluid and accessible across different languages and cultures.

Thus, these systems are characterized by a certain degree of autonomous control, allowing them to handle changing situations and adapt to new information without the need for constant human intervention. However, these systems vary in their levels of autonomy, ranging from those that require human supervision to those with high capabilities for making completely independent decisions.

Artificial intelligence can also be classified into three main levels:

- **Performing specific tasks:** Such as image classification or machine translation, where AI executes predefined tasks based on specific algorithms.
- **Performing tasks that humans can do:** Such as self-driving or responding to customer inquiries, where AI simulates human abilities to carry out complex tasks.
- **Surpassing humans in task execution:** Such as financial data analysis or pattern recognition in vast amounts of information, where AI excels in providing fast and accurate solutions.

In summary, artificial intelligence ranges from performing simple tasks to surpassing human capabilities in some fields. It spans from executing specific tasks like classification and translation to simulating human abilities in complex areas such as self-driving, ultimately reaching the point of outperforming humans in data analysis and pattern recognition with greater speed and accuracy.

2.1.2. Objectives of Artificial Intelligence

The primary goal of artificial intelligence is to simulate human intelligence in machines, enabling them to perform complex tasks and make independent decisions. The objectives of artificial intelligence can be summarized as follows:⁸

- **Problem-solving and decision-making:** AI aims to develop systems capable of analyzing vast amounts of data and making decisions based on that data, enhancing machines' ability to efficiently solve problems in various fields.
- **Enhancing creativity and innovation:** AI can stimulate creativity in writing, art, and design, helping humans push beyond the limits of their traditional imagination and capabilities.
- **Planning:** One of AI's core objectives is setting and achieving goals within a system. It enables the formulation of strategies to accomplish these goals based on data analysis.
- **Social intelligence and computing:** Through social intelligence, AI understands how to interact and behave in social environments, allowing it to simulate human behavior and even program psychological and cognitive behaviors to increase its effectiveness in these environments.
- **Knowledge engineering:** AI requires essential information to solve problems. Through knowledge engineering, models are developed to understand the relationship between cause and effect, enhancing problem-solving capabilities.

2.1.3. Characteristics of Artificial Intelligence

The characteristics of artificial intelligence lie in a set of advanced capabilities that enable it to simulate human intelligence in machines. These characteristics include:⁹

- **Symbolic Processing:** Instead of dealing only with numbers and letters, AI processes symbols and arranges them into complex structures to clarify relationships between different symbols.
- **Non-computational Processing:** Unlike traditional algorithms, AI programs rely on knowledge rather than merely performing arithmetic operations, allowing for more complex decision-making.
- **Logic:** AI depends on logical inference to solve problems, enabling it to think and derive appropriate solutions based on given data.
- **Perception:** One of AI's main features is its ability to process sensory inputs such as images and sounds, extracting meaning from them to identify objects and events in the surrounding environment.
- **Communication:** AI excels in understanding and interacting with natural language, whether written or spoken, using natural language processing (NLP) techniques to comprehend human emotions and intentions.
- **Learning and Adaptation:** The ability to learn is one of AI's most important characteristics, as it can learn from experiences and improve its performance over time.
- **Planning:** AI can define objectives and devise plans to achieve them, allowing it to take actions that lead to success through a sequence of integrated activities.
- **Fast Decision-Making:** Thanks to its ability to handle vast amounts of data, AI can make quick and precise decisions, supporting decision-making in large corporations and institutions.

2.1.4. Fields of Artificial Intelligence

Many fields benefit from AI advancements, including:¹⁰

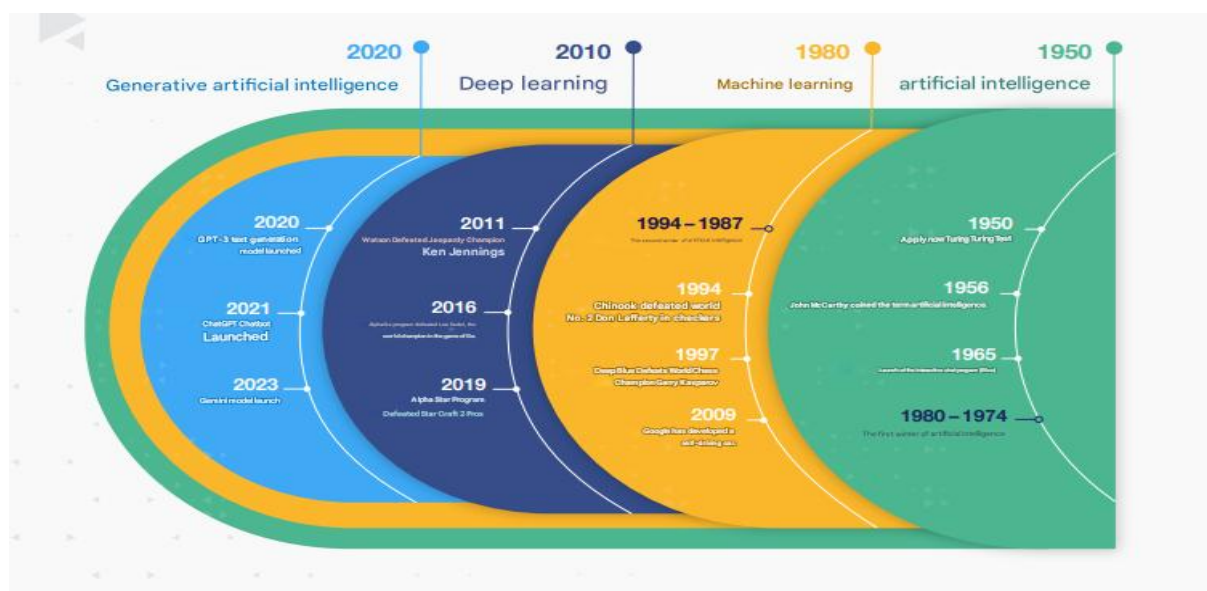
- **Machine Learning:** AI is applied in education to automate tasks such as classification and student response analysis, saving teachers time and increasing the efficiency of education.
- **Robotics:** AI-powered robots assist in making intelligent decisions in industries like manufacturing and healthcare, and they can operate in unfamiliar environments that humans cannot access.
- **Neural Networks:** These networks simulate the human brain through multiple algorithms that enable AI systems to learn and adapt to data for solving complex problems.
- **Natural Language Processing (NLP):** NLP allows computers to understand and interact with human language in a way that mimics human interaction, enabling machines to comprehend and extract meanings from text.
- **Cognitive Computing:** Cognitive computing simulates human thought processes, allowing machines to enhance their performance by recreating human-like thinking within AI systems.
- **Computer Vision:** With computer vision, AI can analyze and interpret digital images and videos, enhancing its ability to interact with its surrounding environment.

2.1.5. The History of Artificial Intelligence

The beginnings of artificial intelligence date back several decades, with several key milestones marking its development:¹¹

- **John McCarthy's Research Paper in 1956:** This year is considered a true starting point for AI, as John McCarthy presented a research paper titled "*Artificial Intelligence: A Study in Thinking Machines.*" In this paper, he proposed using machines to simulate thinking and decision-making processes.
- **Dartmouth Conference in 1956:** Held at Dartmouth College in the United States, this conference brought together scientists and researchers in the field of AI. During the event, ideas and proposals were exchanged on how to develop systems capable of simulating human thinking.
- **Establishment of the AI Laboratory at Stanford University in 1962:** Founded by John McCarthy and Marvin Minsky, this lab became one of the earliest research centers in AI, playing a pivotal role in advancing the field.
- **The Rise of IBM's Chess Program in 1997:** A major milestone in AI history was the victory of IBM's chess program *Deep Blue* against world champion Garry Kasparov. This achievement demonstrated significant progress in machine capabilities, particularly in strategic decision-making and problem-solving.

Figure 01. Illustrates the key events in the development of artificial intelligence capabilities



Source: *Artificial Intelligence Series for Executives, Artificial Intelligence, 2nd Edition, Saudi Data and Artificial Intelligence Authority, Kingdom of Saudi Arabia, 2024, p. 11.*

Thus, Artificial Intelligence (AI) is a branch of computer science aimed at developing systems that mimic human cognitive abilities such as learning and decision-making. It began in the 1950s and evolved with advances in computing and algorithms to include fields such as machine learning and deep learning. Today, AI has become an essential part of many sectors, including healthcare, business, and transportation, and it is considered a key pillar of innovation and technological advancement.

3. The Role of AI Applications in Enhancing Language Accuracy and Comprehension

AI applications are advanced tools that significantly contribute to improving language accuracy and comprehension. They enable text analysis, machine translation development, and precise interpretations of vocabulary and grammar. These applications exhibit immense potential in Arabic language education by tailoring instruction to students' needs, thus accelerating the learning process and enhancing interaction with content. However, despite their many benefits, there are potential negative effects, such as excessive reliance on technology in education, which may reduce

personal interaction and affect students' understanding of language in diverse cultural contexts. Additionally, AI applications may struggle to grasp the nuances of the Arabic language, including dialectal variations and contextual usages.

3.1. The Impact of AI Applications on Enhancing Language Skills and Comprehension

AI applications improve language accuracy and comprehension by assessing language skills and diagnosing issues in a personalized manner. They also allow for adjusting difficulty levels and providing targeted interventions based on user needs, thereby enhancing language learning effectiveness.

3.1.1. The Role of AI in Assessing Language Skills and Identifying Areas for Improvement

AI algorithms serve as powerful tools for analyzing language patterns, speech, and relevant data to provide precise and personalized assessments. These systems offer a comprehensive understanding of areas where individuals may need support or improvement by processing and analyzing speech and text samples.¹²

For instance, a child suspected of having language difficulties may undergo an AI-assisted evaluation that assesses their expressive and receptive language skills. This type of assessment can pinpoint areas requiring support, such as vocabulary issues or repeated grammatical errors, helping therapists develop a targeted intervention plan.

For example, a speech-language pathologist (SLP) may use AI-powered tools to assess teenagers' language abilities. These tools analyze recorded conversations, identifying patterns that indicate communication difficulties or slow comprehension responses. Additionally, the tool detects issues such as disfluency or inconsistencies in speech and then generates detailed reports and recommendations for intervention.

These tools not only aid in diagnosing cases but also enhance the accuracy of therapeutic interventions by providing precise and real-time data. This contributes to improving treatment outcomes and enables more personalized support.

Thus, AI can serve as an innovative solution for analyzing language skills and offering targeted assessments that effectively address language difficulties, ultimately providing better care for individuals with linguistic challenges.

3.1.2. Personalized Language Interventions Using AI and Task Adaptation

AI-based applications can deliver personalized language interventions tailored to user performance, offering effective ways to enhance and develop language skills. These applications dynamically adjust task difficulty and speed according to the user's needs. Additionally, these systems can monitor users' progress in real time and modify challenge levels using AI. For example, an AI-powered chatbot can assist children with language disorders by engaging them in vocabulary-building exercises. The program continuously tracks progress and, based on the child's current performance, adjusts the complexity of tasks. If a child struggles with a specific aspect, the program reduces the difficulty level, whereas if they show improvement, the challenge increases by incorporating more complex words or phrases. Furthermore, the program provides real-time feedback, allowing children to learn faster and more effectively.¹³

Thus, these applications contribute to creating a flexible learning environment that adapts to individual needs, allowing for more personalized and effective learning. These systems also provide customized educational content and precise guidance, helping to improve learning outcomes and increase engagement with the study material.

3.1.3. The Use of AI in Tracking Linguistic Progress

AI tools collect and analyze language performance data over time, enabling speech-language pathologists (SLPs) to track progress, identify trends, and adjust interventions according to each individual's needs. Through these tools, specialists can refine treatment strategies in a more targeted and efficient manner. For example, a speech-language therapist can review an AI-powered dashboard that displays a child's language development. Based on the collected data, the system highlights areas for improvement and suggests targeted activities to incorporate into the next session, aiding in the enhancement of the child's language skills.¹⁴

3.1.4. AI in Treating Language and Communication Disorders

AI has revolutionized the treatment of language and communication disorders by enabling more precise and personalized assessments through individual data analysis. These intelligent tools, powered by machine learning and predictive models, assist specialists in identifying weaknesses in language skills and improving them through targeted therapeutic interventions. Additionally, these applications enhance social interaction for individuals with communication difficulties by providing suggestions to increase engagement and offering real-time feedback.¹⁵

One of the most significant advantages of these tools is their ability to monitor progress over time, allowing for continuous adjustments to therapeutic strategies based on extracted data. However, alongside these benefits, it is crucial to ensure that AI is used fairly, making these technologies accessible to all individuals, regardless of their backgrounds or resources.

Thus, balancing technological innovation with equitable access to treatment presents a major ethical challenge, necessitating careful oversight of new applications to prevent biases that could impact social justice.

In summary, AI has brought significant advancements in treating language and communication disorders by providing data-driven personalized assessments, predictive models, automated delivery of therapeutic tools, support for social interaction, and real-time language progress tracking. With these technological advancements, it is essential to ensure that AI is used equitably, serving all individuals with language disorders equally while considering ethical implications and maintaining a balance between innovation and accessibility in treatment.

3.2. The Role of AI in Teaching the Arabic Language

Artificial Intelligence plays a major role in enhancing Arabic language education by providing interactive materials and intelligent educational programs tailored to learners' needs, objectives, and levels. It also enables the development of customized curricula, which enhances the effectiveness of learning and allows for guided interaction.

3.2.1. Positives of AI in Arabic Language Education

The advantages of AI in Arabic language education lie in offering personalized and diverse learning experiences, which can be summarized as follows:¹⁶

3.2.1.1. Improved Speed and Accuracy in Accessing Information

AI provides an efficient means to quickly and accurately access data and information related to the Arabic language, saving teachers considerable time compared to traditional research methods. Teachers can obtain a wide range of informational and educational content in record time without waiting for days, thereby enhancing the speed and accuracy of Arabic language instruction.

3.2.1.2. Adaptability and Flexibility in Education

AI allows both teachers and students to easily adapt to new and advanced technologies in Arabic language education. Educational content can be customized based on the different needs and

levels of learners, whether the teacher is highly experienced or a beginner. Additionally, AI helps in developing teachers' skills by providing updated and targeted educational tools to improve teaching methods.

3.2.1.3. Development of Self-Learning Skills

AI offers an interactive learning environment that encourages learners to independently study Arabic. Students can access diverse educational materials supported by audio and visual aids, helping them transform abstract information into a tangible and easy-to-understand experience. This method can contribute to a deeper understanding of Arabic in a faster and more effective manner.

3.2.1.4. Continuous Learning Without Time Constraints

AI provides a flexible learning environment that allows learners to study Arabic at any time that suits them, free from the time constraints of traditional methods. Learners can access lectures, lessons, and recorded reviews online, such as video clips or interactive lessons, making continuous learning possible without any interruptions or delays.

3.2.2. Negatives of AI in Arabic Language Education

Despite the advantages of AI in Arabic language education, its implementation in this field is not without potential negative effects that may hinder or limit its effectiveness. These negative impacts can be outlined as follows:¹⁷

3.2.2.1. Inability to Express Human Emotions

AI lacks the ability to show empathy and emotions such as compassion and love, which are important aspects in Arabic language education where learners need to interact with a teacher who demonstrates emotional care and personal engagement.

3.2.2.2. Loss of Mental Capabilities

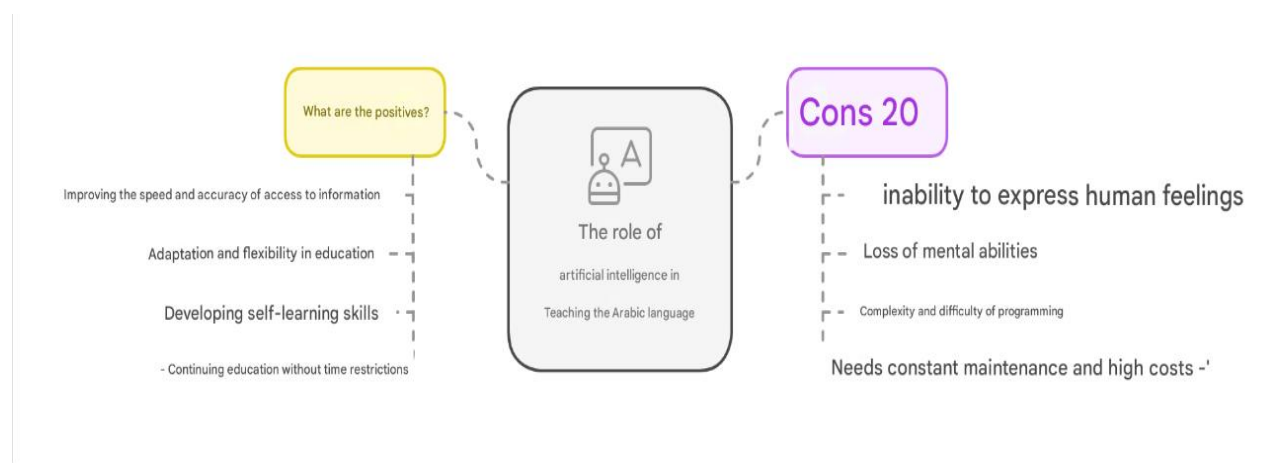
Reliance on AI in education may lead to a decline in certain cognitive abilities among teachers and students, such as memorization and review, as smart devices assist learners in recalling information instead of them doing it independently.

3.2.2.3. Complexity and Difficulty in Programming

AI requires specialists with expertise in computer science and the Arabic language to set it up and program it correctly. It also demands a long time to store data and update the algorithms that support it.

3.2.2.4. Need for Continuous Maintenance and High Costs

AI systems require regular maintenance and continuous monitoring to detect and fix errors, which entails high costs. This can pose a burden on educational institutions, especially in areas with limited financial support. Consequently, appropriate budgets must be allocated for this maintenance to ensure the continuous effectiveness of the systems and avoid malfunctions that might affect performance. Furthermore, institutions may need to train AI specialists to ensure the systems are maintained and updated continuously.

Figure 02. Represents the role of artificial intelligence in Arabic language education.

The Design is by the Researcher

Therefore, it can be said that artificial intelligence (AI) applications contribute to improving language accuracy and comprehension by analyzing texts and correcting linguistic errors, which enhances comprehension and writing skills. Additionally, AI in Arabic language education provides interactive programs and customized methodologies tailored to learners' needs, facilitating faster access to educational materials. It also offers a flexible and interactive learning environment that helps learners effectively improve their language skills at any time that suits them.

4. The Impact of Artificial Intelligence on Cultural Identity and Social Communication

AI significantly affects cultural identity and social communication by facilitating interactions across multiple platforms and enabling faster information exchange. However, excessive reliance on these technologies may pose a threat to cultural and linguistic diversity and impact personal relationships and social identity. Moreover, these influences may raise new issues concerning the balance between technological innovation and the preservation of cultural values.

4.1 The Relationship Between Artificial Intelligence and Cultural Identity

The impact of artificial intelligence (AI) on cultural identity and social communication is reflected in the diversity of cultural expression. This is natural, considering that technology has become an integral part of our daily lives. It has become increasingly difficult to separate AI from culture, as the two are deeply interconnected. Therefore, culture must always be included in discussions on AI development, as it is not merely a secondary element but a fundamental component of societal identity. The relationship between AI and cultural identity can be summarized as follows:¹⁸

4.1.1 Strengthening the Relationship Between Artificial Intelligence and Culture

To further develop the relationship between AI and culture, public policies and appropriate legislation must be integrated, along with the establishment of effective partnerships between cultural institutions and AI sectors. Culture should be a genuine partner in these discussions, not just a passive participant, as it represents the foundation of society, its identity, and its values. To achieve harmony between AI and culture, several key tools should be implemented, such as creating legislation that aligns with the digital transformation of copyright laws and ensuring that culture remains at the core of AI-related regulations and policies. The digital transformation and modern technologies require knowledge tools that suit social contexts and adhere to ethical standards.

4.1.2 Ethical Challenges and Digital Transformations

However, these technologies can sometimes pose challenges related to individual and societal identity, especially if regulations are not clearly defined. Despite the advancements in AI, its ethics remain tied to the ethics of programmers and the data being used. This raises questions about how these ethical standards should be established, particularly amid the increasing economic and political dominance of technology companies. In this context, human beings remain the central element in all these transformations. It is essential to return to the humanities and social sciences to understand the impact of these technologies on individual and societal behavior. Additionally, a shift toward digital psychology and digital social sciences is necessary to address the effects of these transformations.

4.2 The Impact of Artificial Intelligence on Cultural Identity and Social Communication

The effects of AI on shaping cultural identity and social communication can be summarized as follows:¹⁹

4.2.1 Supporting Social Interaction Through Artificial Intelligence

AI facilitates social interactions, making them smoother and more effective by providing instant prompts and guidance during conversations. This is particularly beneficial for individuals with communication difficulties, such as those with autism or language impairments. AI systems can offer cues and instructions to help these individuals engage more naturally in conversations.

For instance, AI can assist a person with autism during a group discussion through a wearable device that activates when it detects a lapse in interaction. This device can vibrate or issue a notification reminding the user to re-engage in the conversation by asking a question or making a comment. Such technology can help reduce social discomfort and promote active participation.

4.2.2 The Role of Artificial Intelligence in Enhancing Conversational Continuity

AI can improve the ability to maintain topic continuity in complex social situations. Intelligent systems can suggest topics, provide reminders to keep discussions on track, and even propose questions or ideas to expand conversations. Additionally, AI can aid in improving non-verbal communication, such as facial expressions and body gestures, which some individuals may struggle with during social interactions.

In this way, AI serves as a crucial tool for supporting social interactions among individuals facing communication challenges. It fosters more inclusive social environments and enhances the quality of interpersonal communication. Furthermore, AI promotes interaction between different cultures, helping to break down linguistic and social barriers and encouraging more effective communication and mutual understanding among individuals.

5. Conclusion

In conclusion, artificial intelligence is one of the most significant technological innovations that enhance communication between individuals from diverse cultural and linguistic backgrounds. Its advanced applications improve translation accuracy and cross-cultural text comprehension, thereby fostering human interaction. However, the primary challenge lies in utilizing these technologies in a way that does not negatively impact cultural identity or traditional social communication methods.

Thus, if AI is invested in wisely, it can create flexible and inclusive communication environments that preserve linguistic quality while safeguarding cultural identity and human interactions. This would enhance mutual understanding and contribute to improving the quality of life across different societies.

Based on the above discussion, several conclusions and recommendations can be drawn, which will be outlined as follows:

5.1 Findings:

- **Improved Cross-Language Communication:** AI technologies, such as machine translation, have facilitated communication between speakers of different languages, thereby enhancing global understanding.
- **Loss of Cultural Context:** Many AI applications fail to convey precise meanings in specific cultural or linguistic contexts, leading to inaccurate interpretations.
- **Impact on Social Skills:** Findings indicate that reliance on AI may negatively affect social communication skills and direct interpersonal interactions, reducing the ability to engage in face-to-face communication.
- **Development of Flexible Educational and Social Environments:** AI applications contribute to creating adaptable learning environments tailored to individual needs, increasing learning effectiveness and enhancing the quality of social interactions.

5.2 Recommendations:

- **Enhancing Cultural Awareness:** Developers should integrate cultural elements into the design of AI applications to ensure a deeper understanding of local contexts.
- **Encouraging Traditional Human Interaction:** It is essential to maintain and promote direct social communication skills among individuals.
- **Continuous Development of Language Applications:** Further development of AI language processing applications is recommended, with a focus on improving translation accuracy and text comprehension in ways that accommodate diverse cultures and languages, thereby expanding mutual understanding.
- **Preserving Cultural Diversity:** AI technologies should be directed toward preserving the cultural identity of each society by focusing on applications that respect cultural contexts and ensure diversity in communication methods.
- **Integrating AI into Educational Curricula:** AI technologies should be incorporated into educational curricula and training programs to enhance personalized learning effectiveness, thereby improving education quality and providing customized learning experiences tailored to individual needs.

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