

## Teachers and Students' Perceptions on the Impact of Artificial Intelligence on English Language Learning in Saudi Arabia

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### Abstract

The study aims to investigate Saudi EFL teachers and students' perceptions toward using artificial intelligence (AI) for improving English language learning. Moreover, the use of artificial intelligence in education has become an important need to keep pace with the development of education in the Kingdom of Saudi Arabia in the spheres of the Kingdom's 2030 vision. Many Saudi students face difficulties in learning English language for a lot of reasons. One of these reasons because they are taught through traditional methods, and they find it boring and not effective. Moreover, the future vision of education has changed and require the use of technology. The participants in this study were 5 teachers and 16 students from Yanbu University College Female Campus (YUCF). The study type was quantitative research. Furthermore, the tools used in the research was a close-ended questionnaire to collect data. The findings showed that teachers and students' perceptions supported the effect of using artificial intelligence in learning English language in Saudi Arabia.

**Keywords:** Teachers and Students' Perceptions, Artificial Intelligence, English Language Learning

### INTRODUCTION

The use of artificial intelligence in learning is one of the most important methods of learning in the modern era. Artificial intelligence (AI) is the analysis of how computers do stuff that people do better at the moment (Rich & Knight, 1991). Badaro, Ibanez, and Agüero, 2013 assumed that artificial intelligence referred to the way intelligence is simulated human brain skills. These days applying artificial intelligence is mandatory to keep pace with the civilization of renaissance in education for the 2030 future in the Kingdom of Saudi Arabia. It is the period that began to introduce artificial intelligence for EFL and education. Learning language supported by artificial intelligence would revolutionize education for students and teachers (Rohalevych, 2020).

Saudi EFL learners face some difficulties in learning foreign language because of the following reasons. One of the reasons is the teachers use old teaching methods to teach foreign language. Second reason is the curricula of the Ministry of Education require the introduction of a technological component in teaching students. Also, the lack of foreign

language practice and communication with teacher. Moreover, EFL learners do not practice the target language in the surrounding community. As a result, learners are unable to improve their language skills which lead them to lower achievement of foreign language.

The purpose of this study was to find out the perceptions of teachers and students on the impact of using artificial intelligence (AI) on learning English language in Saudi Arabia. This study answered the following research question.

- What are teachers and students' perceptions toward the impact of artificial Intelligence on English language learning?

## **LITERATURE REVIEW**

This section presents definitions of the key concepts. Also, it provides an overview of the previous studies related to the literature that have discussed the effect of artificial intelligence on improving English language learning. Artificial Intelligence (AI) can be described as the device that makes intelligent decisions autonomously (Ginsenberg, 2012; Jackson, 2019). Artificial intelligence is a field that makes use of modern technologies in facilitating learning. For example, artificial intelligence was used by Plagiarism Checkers websites to help faculty check works if it was copied from another.

### **Previous Studies in the Literature**

The first study was conducted by Ahmed-Ali (2020) to investigate the effectiveness of artificial intelligence application in developing students' oral language skills in EFL Egyptian primary school. The study took place at Egypt elementary school. Also, the participants were 40 students from sixth-year primary school and their level of English was poor. The purpose of the research was identifying the impact of artificial intelligence application to enhance listening and speaking skills in learning English language. Moreover, it was a quantitative research. Data was collected through a pre-test and a post-test. The researchers divided the participants into two groups. The experimental group was taught by using Google Assistant application for speaking skill where the participants communicated through speaking with a robot and then listen to respond of the robot. Also, the control group was taught by using the traditional method. The results of the pretest and posttests showed that artificial intelligence has a positive impact on improving listening and speaking skills on students of the experimental group. In addition, the researcher found that students were active on improving their listening and speaking skills. Students became more confidence and professionals in using these skills. The researcher ensured that artificial intelligence made learning easier. Moreover, artificial intelligence create a realistic interactive platform for learning languages.

A study conducted by Kim (2019) on the artificial intelligence chatbots on improving English grammar skills. The study took place in Korea. The participants of the study were 70 university students. Also, the participants were from different language proficiency level. It was between beginners, intermediate and advanced. The purpose of the study was to discover the effect of artificial intelligence chatbot in improving foreign language university learners. Moreover, the type of the research was quantitative research. The

participants were divided into two groups. The experimental group was taught grammar by using chat with Replika app. The other group was taught grammar skill through talking with their partner. In addition, the data was collected through pre-test and post-test. The result of the study showed that both groups were improved in grammar skills, but the group used chatbots showed more noticeable improvement. The researcher found that artificial intelligence chatbots had positive impact in learning foreign language on Korean learners.

Another study conducted by Soliman (2016) on using virtual learning environment based on artificial intelligence for teaching English language for medical students. The study took place in Bisha city in Saudi Arabia. The main statement for the study showed many previous studies have explained that lack of learners understanding of medical English language material due to the inefficiency of the teaching methods used in that material. Also, the participants of the study were 29 faculty staff at medicine department at Bisha University. The purpose of the study was designing a 3D virtual learning environment based on artificial intelligence for teaching English language for medical students. Moreover, it was a quantitative research. Data was collected through a questionnaire. The questionnaire was 40 statements consisted educational needs, technological needs and artificial intelligence. The result of the study had showed that most of the university's faculty encouraged the use of artificial intelligence environment for the English language by learners. The researcher described that examining the reality of teaching English for medical students at Bisha University by incorporating a suggested virtual learning environment based on artificial intelligence to reach for solution of learning English problems.

Another study conducted by Obari and Lambacher (2019) on using artificial intelligence to improve English language skills of native Japanese learners. The study took place in Tokyo, Japan. The participants of the study were 47 undergraduates' students. Also, the students were native language learners. Their language proficiency level was intermediate level. The purpose of the study was to find out the effect of artificial intelligence on improving English language skills of native learners. Also, incorporate English language learning through artificial intelligence with 21st century skills. In addition, the researcher added coexistence with AI for 21st-century skills in education. Furthermore, the type of the study was mixed method research. The participants of the study were divided into two groups. Participants from both groups were split into eight subgroups during the use of artificial intelligence. The first group was taught by using Google Home Mini along the semester. The first group was focused to improve listening and speaking skills. Moreover, the second group used Alexa along the semester to improve listening comprehension and vocabulary skills. The researchers added duties for both groups to do during artificial intelligence training use. These duties were practice with AI speakers, watched subjects and wrote 300-word summaries, created presentations, studied worldviews theory and the philosophy behind 21st century skills; finally engaging in discussions. The results of the study showed that both groups were improved in English language skills. The researchers confirmed that artificial intelligence improved English language skills incorporated with 21<sup>st</sup> century skills.

This research investigated the perceptions of teachers and students' on artificial intelligence in improving learning English language in Saudi Arabia. The previous studies were conducted on students or teachers only while this study focused on teachers and students' perceptions. The first previous study was conducted on preschool students. Also, the second previous study was conducted on college students. The third previous study was conducted in faculty teachers. Also, the last previous study was conducted on native Japanese university students. The first study participants' proficiency level was low. While the second study was different between beginners, intermediate and advanced. Moreover, the third previous study was advanced. The last previous study was intermediate. In addition, the previous studies were conducted in Egypt, Korea, Saudi Arabia and Japan while this study conducted in Kingdom of Saudi Arabia. Furthermore, the recent research was different from the previous studies because it focused on the perception of teachers and students' and their mother tongue was Arabic. Moreover, the previous studies collected data through doing pre/post-test and questionnaire while this study was conducted through a questionnaire for teachers and students. However, this study focused on teachers and students' perception about using artificial intelligence on learning English language. The argument and solutions provided in this research were different from the provided in the previous studies.

## **METHOD**

This section introduces the methodology of the study and the research tool that was used to obtain the research objectives. It also describes the participants of the study and the data collection procedure

### **Research Design**

This research was based on quantitative method. Quantitative data were collected by using close-ended questionnaires.

### **Instruments**

The researcher designed close-ended questionnaires that contained 11 statements using 5 points Likert scale (strongly agree, agree, neutral, disagree, and strongly disagree) in order to know the teachers and students' perceptions to use artificial intelligence (AI) for learning English language in Saudi Arabia. The questionnaires were in English language.

### **Participants**

The participants of this study were teachers and students from the preparatory year program at Yanbu University College Women Campus in Yanbu Al-Saniyah, Saudi Arabia. The participants' English proficiency level was pre-intermediate for the students and advanced for the teachers. The participants of the research were 5 teachers and 16 students. Moreover, the participants of the teachers were from different languages; and students' native language was Arabic.

### **Data Collection Procedure**

The research was conducted on 5 teachers and 16 students from Yanbu University College Women Campus (YUCW). The teachers and students were from prep-year

department. The type of the research was quantitative. First, the researcher designed 2 questionnaires one for teachers and the other for students. The researcher introduced in a small paragraph the importance of artificial intelligence on improving English language learning. Moreover, the researcher included 2 videos that showed the effect of using artificial intelligence on learning languages. The researcher shared the questionnaires online with the participants. Then, the researcher asked the participants to respond the questionnaires to know their responses about using artificial intelligence in learning English in Saudi Arabia. At the end, the responses were analysed quantitatively and discussed in detail.

## RESULTS AND DISCUSSION

The aim of this study was to investigate teachers and students' perceptions on the impact of using artificial intelligence on learning English language. In this section, the results gathered from questionnaires were presented and discussed. The questionnaires were designed by the researcher in order to answer the question of the research, which was: "What are teachers and students' perceptions toward the impact of using artificial intelligence on English language learning?"

### Questionnaire for Teachers

The researcher prepared a close-ended questionnaire for the teachers. This questionnaire consisted of 11 statements. The purpose of the questionnaire was to investigate teachers' perceptions towards artificial intelligence. Table 1 below shows the finding of teachers' questionnaire.

**Table 1.** Response frequencies and mean for teachers' questionnaire.

Statements	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Mean response
1. The use of artificial intelligence in education improves the educational environment for learning English language.	2	3	0	0	0	4.4
2. Artificial intelligence is important to use these days in education to prepare language learners to acquire language learning need of Saudi Arabian vision in education.	2	3	0	0	0	4.4
3. Artificial intelligence contributes to language development faster.	2	1	2	0	0	4
4. Artificial intelligence caters the needs of all age group and faster the ability in language in English language learning.	2	2	1	0	0	4.2
5. Artificial intelligence clarifies many points that the teacher cannot cover in his/her explanation.	2	1	2	0	0	4
6. Artificial intelligence fulfils and complements all students' language learning needs.	1	1	3	0	0	3.6

7. Artificial intelligence enables students to obtain additional educational support for what the teacher does in English language classroom.	2	3	0	0	0	4.4
8. Learning through using artificial intelligence will make learning language less terrifying than learning it using traditional way.	0	3	2	0	0	3.6
9. Artificial Intelligence changes the way how students acquire English language skills.	1	2	2	0	0	3.8
10. The teacher's role will diminish when the student uses artificial intelligence to learn the English language.	0	2	3	0	0	3.4
11. The use of artificial intelligence affects the ability to communicate with the teacher.	1	2	2	0	0	3.8

Table1 shows questionnaire was given to 5 YUCF prep-year teachers who teach English. The teachers were teaching 001 and 002 level. From the above table, the first and second statements (4.4) all teachers "agreed" and "strongly agreed" that AI improves the educational environment for learning English language are important to earn language learning need of Saudi Arabian 2030 vision in education; it made the learning environment less terrifying between teacher and student. Moreover, in the third statement (4) most of the teachers agreed that AI develop language learning faster because it addresses language learners at their levels as if they address their teacher, whether inside or outside the classroom. Also, one teacher was neutral due to that the use of artificial intelligence enhances the process of language instruction, but did not act as a primary teacher for faster learning.

In the fourth statement (4.2) most of the teachers "agreed" and "strongly agreed" that AI caters the needs of all age group and faster the ability in English language learning while one teacher was neutral for that statement because it helped teachers fill the gap that raised between the level of the learner and the ability to learn from material other than the teacher. In addition, artificial intelligence contributed to discover the skill that the learner needs to improve his/her language in it and did not devote much time in the skills that the learner was proficient in. In the fifth statement (4) most of the teachers "agreed" and "strongly agreed" that AI clarifies many points that the teacher cannot cover in explanation because the teachers admit that some learners in the class were shy to ask about some points that they did not understand, so by the use of artificial intelligence learners would address the system as if they were asking a teacher comfortably also discover and search more, and few teachers were neutral.

The sixth statement (3.6) which was "Artificial intelligence fulfils and complements all students' language learning needs" few teachers were "agreed" and "strongly agreed" due to that the teachers recognized that artificial intelligence helps to complete what the teachers were missing in the process of teaching English language; and some of them

were neutral. In the seventh statement (4.4) all the teachers "agreed" and "strongly agreed" that AI enabled students to obtain with the additional educational support for what the teachers explained in English language classroom due to that it provided them with more exercises and simulations at any time they need, not like a teacher during specific times.

In the eighth statement (3.6) most of the teacher agreed that the use of AI in learning language made the learning language less terrifying than learning it using traditional methods because the teacher ensured that the student spent more time to learn from a program or system that simulated the human mind; in giving information and teaching the language more precisely as the role of the teacher in the classroom. In addition, AI would address the human mind in a modern way far from the traditional methods of some teachers in teaching language. Also, few teachers were neutral. Most of the teachers "agreed" and "strongly agreed" with the ninth statement (3.8) which was "Artificial Intelligence changes the way how students acquire English language skills" because instead of relying on the teacher only to obtain the correct language instruction, artificial intelligence played an approximate role and could be provided even in remote areas where there were not enough teachers for the language. In the tenth statement (3.4) some teachers agreed that teacher's role diminished when the student used artificial intelligence to learn the English language, and some of them were neutral. The last statement (3.8) most of the teachers "agreed" and "strongly agreed" that AI affected that communication between students and teacher because it is possible to depend on it completely. However, few teachers were neutral since it would have advantages and disadvantages, they acknowledge that the role of the teacher provided with guidance, so artificial intelligence did not cover teacher role.

### Questionnaire for Students

The researcher prepared a close-ended questionnaire for the students. This questionnaire consisted of 11 statements. The purpose of the questionnaire was to investigate students' perceptions towards artificial intelligence. Table 2 below shows the finding of students' questionnaire.

**Table 2.** Response frequencies and mean for students' questionnaire

Statements	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Mean response
1.The use of artificial intelligence in education improves the educational environment for learning English language.	7	9	0	0	0	4.4
2.Artificial intelligence is important to use these days in education to prepare language learners to acquire language learning need of Saudi Arabian vision in education.	7	6	3	0	0	4.25
3. Artificial intelligence contributes to language development faster.	5	7	4	0	0	4

4. Artificial intelligence caters the needs of all age group and faster the ability in language in English language learning.	6	7	3	0	0	3.8
5. Artificial intelligence clarifies many points that the teacher cannot cover in his/her explanation.	8	5	3	0	0	4.6
6. Artificial intelligence fulfils and complements all students' language learning needs.	8	5	2	1	0	4.2
7. Artificial intelligence enables students to obtain additional educational support for what the teacher does in English language classroom.	8	7	3	0	0	4.8
8. Learning through using artificial intelligence will make learning language less terrifying than learning it using traditional way.	8	2	5	1	0	4
9. Artificial Intelligence changes the way how students acquire English language skills.	6	7	1	2	0	4
10. The teacher's role will diminish when the student uses artificial intelligence to learn the English language.	6	4	3	3	0	3.8
11. The use of artificial intelligence affects the ability to communicate with the teacher.	5	8	2	1	0	4

Table 2 shows a questionnaire was given to 16 students from prep-year in YUCF. The students seemed to have an overall positive attitude of using artificial intelligence in learning English. The first statement (4.4) is the important statement regarding this study. It was used to elicit students' attitude towards using artificial intelligence in learning. All the students "agreed" and "strongly agreed" with the statement due to it made it more suitable and prepared to teach English language. In the second statement (4.25) most of the students "agreed" and "strongly agreed" that it is important to use artificial intelligence to acquire language to achieve 2030 vision of education in Saudi Arabia, and some of them were neutral. In the third statement (4) most of the students "agreed" and "strongly agreed" that artificial intelligence helped in developing the language learning faster. Due to it give them non-traditional source for learning the language as if it simulates a real teacher, and some students were neutral since presence of AI improved education and if did not use it did not affect the quality of learning language.

In the fourth statement (3.8) most of the students "agreed" and "strongly agreed" that artificial intelligence caters the needs of all age group and faster the ability in English language learning. Due to the use of artificial intelligence facilitated learning language, and match between the learner and the language proficiency level. As the artificial intelligence determined the language proficiency level of the learner and accordingly



improved his/her language. While three students were neutral with the use artificial intelligence in learning language due to the use may faster the educational process and did not use it would not affect teacher's role in learning the language within a short time. In the fifth statement (4.6) most of the students were "agreed" and "strongly agreed" that artificial intelligence helped in simplifying and clarifying many points that teacher cannot cover in the explanation of the lesson since it helped students to simulated and trained with proof-reader also had an explanation from a smart source other than the teacher. Also, some of the students were neutral due to that assured no one cover the role of the teacher in the explanation completely.

In the sixth (4.2) statement "agreed" and "strongly agreed" that artificial intelligence fulfils and complements all students' language learning needs since it uses everywhere and any time, while some students were neutral, and one student did not agree because the technological needs available now served the needs of language learning. In the seventh statement (4.8) most of the students "agreed" and "strongly agreed" that AI support students with additional educational support for what the teacher did in English language classroom because it played the role of the teacher in the simulation of language learning, and some of the student were neutral.

In the eighth statement (4) most of the students "agreed" and "strongly agreed" that using AI in learning made learning language less terrifying than using traditional way because it created a new teaching method for students that is more fun and reduces time. While some students were neutral, and one student was disagreed with this statement because some students like to use traditional methods in studying some language skills. The ninth statement (4) most of the students "agreed" and "strongly agreed" that AI changes the way how students acquired English language skills because it made students more enthusiastic about communication, and artificial intelligence considered in the end a device, which students reduced the anxiety of making mistakes as if it was in a classroom. While one student was neutral, and few students were disagreed because they may have problems dealing with the app\ device and preferred real human. The tenth statement (3.8) attracted the participants which was "The teacher's role will diminish when the student uses artificial intelligence to learn the English language". Most of the students most "agreed" and "strongly agreed" due to the significant improvement in the educational process as the teacher is not alone in helping to learn the language. Some of the students were neutral for this statement and the other were disagreed because that the role of the teacher is essential and did not diminish, as the guide for language learning, even if it is by using artificial intelligence. The last statement (4) most of the students "agreed" and "strongly agreed" that AI affected the ability to communicate with the teacher in positive way. Some students were neutral for this statement while one student was disagreed that AI affected the communication since the teacher is the essential role to guide in learning.

According to the results of both questionnaires most of the teachers and students preferred using artificial Intelligence in learning English language. The results answered the research question whether the impact of using artificial Intelligence on English

language learning. The findings of the data collected indicated that teachers and students had positive attitudes towards using artificial Intelligence in learning English language.

The findings of the present study supported the findings of the previous studies. It supported the first Egyptian study on using artificial intelligence application for developing primary school pupils' oral language skills conducted by Ahmed-Ali (2020) assured that using artificial intelligence application to improve students listening and speaking skills. This study also supported the finding of the second study conducted by Kim (2019) on using artificial intelligence chatbots on improving English grammar skills the study assured that students used chatbots showed more noticeable improvement. Moreover, this study also supported the finding of the third study conducted by Soliman (2016) on using 3D virtual learning environment based on artificial intelligence for teaching English language, the study ensured most of the university's faculty encouraged the use of artificial intelligence environment for English language by learners. In, addition, this study also supported the finding of the last study about using artificial intelligence to improve English language skills of native Japanese learners conducted by Obari and Lambacher (2019), the study confirmed that artificial intelligence improved English language skills incorporated with 21<sup>st</sup> century skills. The results showed that teachers and students had positive attitude towards using artificial intelligence to learn English language.

## **CONCLUSION**

To sum up, this study aimed to investigate the perception of teachers and students on the use artificial intelligence to improve English language learning. Combine artificial intelligence in language classrooms is important to achieve the modern ways of learning language. However, the purpose of this study was to find out the perceptions of teachers and students' on using artificial intelligence (AI) on learning English language in Saudi Arabia. The results of this study showed that teachers and students had a positive attitude of using artificial intelligence in learning English. Furthermore, this study answered the research question of this study.

## **LIMITATIONS OF THE STUDY**

In the research, some limitations were experienced. The researcher may have more accurate results if the study sustained for a long period of time and with more participants form different levels and universities. Moreover, there was no ability to apply an artificial intelligence application and experienced the participants to have more valid results. Also, the researcher wanted to see the effect of this technique on the participants, but due to the pandemic was not able to meet the participants face to face and find out the effect of artificial intelligence on them. The researcher sent a questionnaire to the participants, but it took more time to collect feedback from them because it was online.

## **RECOMMENDATIONS**

After conducting this research, a set of recommendation is suggested based on the result of the study. Firstly, EFL teachers are recommended to improve the way they teach the

students and combine between language learning and using artificial intelligence programs. Also, EFL teachers are recommended to use AI in their classes. Ministry of Education should encourage arrange training for the teachers to train them to know the latest methods and techniques for teaching. Moreover, the researcher recommended in the future the research should be applied on participants to see the effect of this study. In addition, teachers must be aware of the latest developments in education and technology because it is the future of education that depends on developing what is easy and suitable for accelerating the educational process for learners.

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