أثر استخدام تطبيق روزيتاستون على تطوير الطالب العراقي الدارس للغة الانكليزية, لغة اجنبية
على ادراك قواعد اللغة الانكليزية

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المديرية العامة للتربية في محافظة بابل, وزارة التربية, العراق

The Effect of Using Rosetta stone Application on Developing Iraqi EFL Student's Grammar Recognition

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Abstract

Nowadays, technology is going rapidly around the world, especially smartphones. As the most popular communication tool, smartphone has many benefits for humans, especially for students. It can be very useful to help students in the learning process. Grammar recognition is a basic term to help the students understand about the English language. The use of Artificial Intelligence with grammar recognition based on the syllabus of preparatory school is very important to build understanding of texts, such as procedure and descriptive texts, but in the fact, many students are confused about grammatical structures.

This research examines the efficacy of using Rosetta Stone, one of the popular study applications to help students in the fourth grade of preparatory School understand the English language. To fulfill this aim, one null hypothesis is postulated that there is no statistically significant difference between the mean scores of the experimental group, which is taught grammar recognition according to the Rosetta Stone app, and those of the control group which is taught conventionally.

To attain the objective of the study, the researcher conducts an experiment for two months. A researcher conducts a pre-test, post-test with the control, and experimental group has been adapted. The population of the study contains fourth preparatory school students in the city center of Babil Province for the academic year (2021-2022). The students of AL-Bashaer preparatory school are selected to represent the sample of the study. The class of fourth preparatory school (31) student is chosen to represent the experimental group (taught by Rosetta stone Application) while, the class of fourth preparatory school (30) student is chosen to represent the control group (taught by using the conventional method).

After administering the tests and treating the collected data statistically by the use of the T-test formula for two independent samples, the results show this hypothesis is accepted, and the researcher concluded that Rosetta Stone App helps students in developing their grammar recognition, however, other studies could concur or find different results.

Keywords: Rosetta Stone, Artificial Intelligence, Grammar Recognition, Dynamic Immersion.

المستخلص

في الوقت الحاضر ، تنتشر التكنولوجيا بسرعة في جميع أنحاء العالم وخاصة الهواتف الذكية باعتبارها أداة الاتصال الأكثر شيوعًا ، يتمتع الهاتف الذكي بالعديد من الفوائد للبشر خاصة للطلاب. يمكن أن يكون مفيدًا جدًا لمساعدة الطلاب في عملية التعلم. ادراك قواعد اللغة الانكليزية هو مصطلح أساسي لمساعدة الطلاب على فهم اللغة استخدام الذكاء الاصطناعي في الادراك لقواعد اللغة الانكليزية والاستناد على منهج المدرسة الإعدادية أمرًا مهمًا للغاية لبناء فهمهم للنصوص ، وكذلك المساعدة على الإجراءات في فهم النصوص الوصفية ، ولكن في الحقيقة ، فإن العديد من الطلاب مرتبكون بشأن تركيب تلك القواعد لأن الطلاب يتعلمون اللغة الإنكليزية فقط في داخل الصف. هذا البحث يتفحص فاعلية استخدام (Rosetta Stone App) ، أحد تطبيقات الدراسة الشائعة لمساعدة طلاب الصف الرابع في المرحلة الإعدادية على فهم اللغة قواعد اللغة الإنكليزية

لتحقيق هذا الهدف ، تم افتراض فرضية صفرية أنه لا يوجد فرق ذو دلالة إحصائية بين متوسط بين الدرجات للمجموعة التجريبية ، والتي تم تدريسها في ادراك قواعد اللغة الانكليزية وفقًا لتطبيق(Rosett Stone App) وبالمجموعة الضابطة التي يتم تدريسها بشكل تقليدي .

ولتحقيق هدف الدراسة يجري الباحث تجربة لمدة شهرين. تم تكييف وتصميم البحث بأساليب متعددة مع اجراء اختبار قبلي واختبار بعدي للمجموعتين. يحتوي مجتمع الدراسة على طلاب المرحلة الاعدادية الرابعة في مركز مدينة محافظة بابل للعام الدراسي (٢٠٢١–٢٠٢٢) وتم اختيار طلاب مدرسة البشائر الإعدادية لتمثيل عينة الدراسة. تم اختيار المرحلة الإعدادية للصف الرابع (٣١) طالبًا لتمثيل المجموعة التجريبية تدرس بواسطة (Rosetta Stone App)بينما تم اختيار المرحلة الإعدادية للصف الرابع (٣٠) طالبًا لتمثيل المجموعة الضابطة (تدرس بالطريقة التقليدية) .

بعد إجراء الاختبارات لعينتين مستقلتين ومعالجة البيانات التي تم جمعها إحصائيًا باستخدام صيغة اختبار T – test، أظهرت النتائج قبول الفرضية الأولى ، ولخلص الباحث إلى أن تطبيق (Rosetta Stone) يساعد في تطوير ادراك الطلاب بالتعرف على القواعد اللغة الانكليزية . ومع ذلك ، يمكن أن تتفق دراسات أخرى أو تجد نتائج مختلفة.

الكلمات الدالة: تطبيق روزيتاستون, الذكاء الاصطناعي, ادراك القواعد, الانغماس الحركي

1. Introduction
1.1 The Problem and Its Significance

The main purpose of language is communication. Communication happens in a variety of social situations, on both the personal and social levels. language is intimately connected with perceptions of who we are. People utilize language to communicate their ideas as well as their communities' cultural values and traditions (Kuiper & Allan, 2017: 43).

The problem of the study comprises numerous variables that could obstruct language learning which Iraqi students encounter. One of those challenges is grammar recognition which it can affect the way of using English language in reading and writing, because Arabic language is the mother tongue in Iraq and English is not widely used in daily life, students only learn English in the classroom. When they try to read, they would encounter many difficulties of understanding issues. Specialists say that these difficulties are occurring as a result of the Grammar that students do not understand when they come across them in everyday situations (Aws, M. 2018: 32).

Each language has its qualities and syntax that distinguish it apart from the others. Lack of understanding of the target language structure can lead to grammatical mistakes (Nassaji, 2007:12). Grammar is an essential component of any language. The understanding of a language's grammar will influence the mastery of linguistic skills. As a consequence, when learning a language properly, grammar is a subject that should be thoroughly studied. In addition for students to acquire strong language abilities, they must be taught proper grammar instruction. Many students regard grammar as a difficult and uninteresting subject Because they dislike studying grammar and they will struggle to learn it.

Even students who have studied grammar in school for several years still struggle to construct proper sentences and continue to make grammatical mistakes in their assignments and papers (Richards, J.and Schmidt,R. 2010: 252).

This research is being carried out in the above of condition. The objectives of the study are:

1-Finding out the approaches of using teachers in teaching grammar.

2-Outlining the difficulties encountered by students in studying grammar.

3-Explaining the requirements of grammar for the level of students.

The use of technology becomes an essential component of the learning process. Technology has being used to help students learn more effectively. Artificial intelligence is one of the most important technologies for improving English abilities and recognition (Ahmadi, 2018: 125). Artificial Intelligence is defined as a branch of computer science concerned with the creation of intelligent machines that work and behave human minds. It is concerned with the development of computers capable of learning, reasoning, and self-correction (Habeeb, 2017).

There are some benefits of using artificial intelligence in humans' lives such as daily life situations, repetitive tasks, digital assistance, healthcare, agriculture, automotive, aviation, education, arts, finance, political economy, government, military, gaming, news, commercial enterprises, and advertising (Churcher, 1991: 155).

One example that involves artificial intelligence is Rosetta Stone which is an application that can support English learning. This application can be downloaded for free on android, IOS, and windows. It will certainly be more interesting than ordinary learning in the classroom. In addition, the advantages of this application are, that the students can use it inside and outside of the class. Therefore; by using this application the students can learn whenever and wherever (Wikipedia, 2018).

Rosetta Stone Language Learning is a computer-assisted language learning (CALL) application developed by Rosetta Stone Inc. The software utilizes visuals, texts, and sounds to teach words and grammar in a context through spaced repetition. Dynamic Immersion is the name given to Rosetta Stone's technique (a term which has been trademarked).

In a language learning practice on Rosetta Stone, the student connects a sound or word to one of numerous images. There are several image counts per screen. The app offers an on-screen keyboard enabling users to type characters that are not found in the Latin alphabet when performing writing exercises. Grammatical tense and mood are covered in grammar lessons. In grammar classes, the software is the first provides to student with a number of instances of a certain grammatical idea. On some levels, the word or words that the student should pay particular attention and highlighted. The student then selects the appropriate answer after being given a sentence with multiple options for a word or phrase. If the learner is equipped with a microphone, the program can try to assess word pronunciation. (Gilian, 2016: 46).

2. Review of Literature
2.1 Artificial Intelligence

Artificial Intelligence is a modern tech which has already started to change educational programs. The traditional educational approach requires teachers to be present in the educational setting. Teachers, who are crucial to the educational system, now play a different function as a result of artificial intelligence. AI uses complex analytics, deep learning, and machine learning to compare an individual's effectiveness against that of others. The assistance and identification of teaching and learning gaps, as well as the improvement of educational competency, are suggested AI solutions. Efficiency, personalization, and administrative work are all improved by AI. Giving teachers more time and flexibility, to focus on understanding and adaptation, which are distinctively human characteristics that machines lack. With the combination of machines and teachers, it is possible to pull out the best results from students (Kengam, J,2020: 2).

2.2 Rosetta Stone

Rosetta Stone is an online-offline language learning program that is modernizing the field of learning process. It provides an interactive solution that is recognized for its simplicity and effectiveness in activating students' innate capacity to learn languages. The Rosetta Stone language-learning system, which is available in over 30 languages and used by schools, organizations, and millions of people in over 150 countries around the world, is available in over 30 languages (Rosetta Stone inc. teacher's guide, 2010:6).

2.2.1 Advantages of Artificial Intelligence(Rosetta Stone) in Education

Students nowadays spend a significant amount of time on their phones or tablets, This allows them to use AI applications in their spare time to study for 10 to 15 minutes, Utilizing Gesture Recognition Technology, AI supports teachers in determining a student's attitude or facilitation during a lesson. As AI develops more advanced learners, the computer examines the learner's oral production or syntactic structure knowledge and utilizes them to determine whether the student is struggling to understand the lecture and adapts to the course properly. Students with visual or aural challenges can participate in worldwide classrooms. This may help students who are sick and unable to attend class. Students are graded on their assignments and tests under a traditional teaching approach, which takes a lot of time. Once AI is implemented, these tasks will be finished fast. It also aids in the formulation of suggestions for filling up knowledge gaps (Swain, A. 2021: 19).

Students that have a different languages or have visual impairments can use Rosetta Stone's tools. An AI-based system application called Presentation Translator provides real-time mood subtitles. For instance, students can use Google Translate to read and listen in their own tongue. AI education benefits both students and teachers since it facilitates more comfortable and convenient connection. Some students may be afraid to ask questions in class because they are worried about receiving negative comments. As a result, students can feel comfortable studying without the crowd of using AI communicative tools (Rosetta Stone), (Swain A. 2021: 20).

The teacher, on the other hand, might provide specific feedback to the student. During class, there isn't always sufficient time to react to the questions carefully. They can also offer one-by-one stimulation to any student who requires it. Multiple-choice tests have previously been graded by computers in a number of contexts, and currently progress is being made in having computers grade written responses like paragraphs and assertions. This makes a teacher's job easier because there is no time wasted, and the

time saved can be used to concentrate more on the evaluation and development of each individual student. Artificial intelligence in education (Rosetta Stone) is a simple computer-based system that offers individualized, flexible, and perceptive learning, including visual and aural components. One of the most crucial elements of the AIED system is the domain knowledge model since it offers the system the ability to complete tasks and enables students to decide whether or not they should contribute to the answer. The learner's growing knowledge and skills are reflected in the student model. The interaction element acts as a channel for communication between the learner and the system, while the pedagogy model is a component that represents the system's capacity for instruction (Kengam, J. 2020: 3).

2.3 Natural Language Processing

Natural language processing enables computers to interact with students in their native tongue and perform other cognitive functions. NLP, for example, allows computers to read, listen, and understand speech, allowing students to describe their ideas and feelings and identify which portions are significant. Machines can now evaluate more language-based data than humans without becoming exhausted and in a continuous, unbiased manner (Mohammed, Z. 2019:7).

2.3 Dynamic Immersion

The Dynamic immersion technique allows students to produce and comprehend exclusively in the new language right at the start. Rosetta Stone recreates the environment and procedures that all students used to acquire our first language by direct attaching new language interpretation to real pictures, without native-language translations, specific grammatical teaching, and repetition of practice. As a result, students of all ages, abilities, and language backgrounds can quickly and easily learn new language skills by utilizing their natural language-learning ability. Rosetta Stone accomplishes this by combining real immersion instruction with fully interactive, multimedia technology in a step-by-step lesson sequence. Rosetta Stone is a creative discovery technique to teach new words and grammar by combining natural speaker voices, textual text, and dynamic real-life pictures. Students indicate their understanding at each step, and the computer offers immediate feedback—features that allow students to evaluate their progress and take control of their studies and learning. This personalized, building-block method provides learners with a consistent experience of success from the beginning, ensuring that they have the self-assurance and linguistic skills needed to participate in class activities when they come. This enables students to concentrate on their strengths: utilizing the social, conversational setting of the classroom to get students ready for everyday communication in English (Rosetta Stone inc. teacher's guide,2010:7).

3. The Objective of the Study

The purpose of this work is to improve Iraqi students' grammar knowledge by using English artificial intelligence Rosetta Stone app.

4. Hypothesis of the Study

Based on the objective of the study, it is hypothesized that there is no significance differences between students who use Rosetta Stone app in learning grammar and those who learn grammar by the conventional way.

5. Limits of The Study

     The present study is limited to fourth preparatory school male students in the center of Babil Governorate school during the academic year (2021-2022).

6. Procedures

     In order to fulfill the objectives of the work, the following procedures have been adapted:

1- The researcher submitted a survey to different school-teachers to find the problems students have in grammar.
2- Explaining the advantages of Rosetta Stone App to students and how to use it.
3- Reviewing previous studies concerning the development of grammar recognition combined with artificial intelligence that fit Rosetta Stone features.
4- Dividing the sample into two groups (an experimental and control group) the experiment is going to be applied on the experimental group while the control that will draw the traditional learning method.
5- Designing a lesson plan that demonstrates the use of Rosetta Stone app on an E-learning lesson to make the best possible outcomes of it.
6- Designing the testing instrument which is a (pre-test post-test) model and ensuring its validity and reliability by presenting it to a jury of specialists in language teaching methodology.
7- Administrating the test to a pilot study to ensure validity and reliability by determining the test's item discrimination and item facility.
8- Constructing a scoring scheme in order to score the tests results accurately.
9- Testing both sets by administrating the pre-test to the subjects of both groups
10- Utilizing the Rosetta Stone app within the Google classroom to teach the facts and test previous knowledge to develop their grammar recognition.
11- Teaching the control group by using the conventional method of teaching and ensuring that both groups receive the same quality of instruction without any biases.
12- At the end of the experiment, the researcher administers the post-test to both groups and collects the required data.
13- Analyzing the data statistically to determine the outcomes of the experiment.
14- Finally drawing conclusions and providing suggestions.

7. Research Methods

     To gather the data, the researcher used the qualitative questions by using pre-test and post-test in the first place, the researcher thought deeply regarding what kind of questions he was going to ask considering the subjects related to the topic. After that, he wrote a certain note about five questions, then he summarized the answers depending on the results.

8. Research Tools

     The researcher designed and used the following:
١. A Grammar recognition survey.
2. A Grammar recognition pre and post tests
3. A teacher's guide based on using Rosetta stone application.
4. A student's activity book based on using Rosetta Stone application.

9. Population and Sample

The population of the current study is represented by the fourth-grade preparatory school learners in the center of the governorate of Babil for the academic year (2021/2022). There is a total of (61) preparatory schools in the center of Babil and a total number of (30158) students in the center of the governorate.

The sample of the study was represented by the fourth-grade preparatory school learners in the Al Bashaer School for boys located at the middle of the governorate, randomly chosen to resemble an accurate representation of the population. The school has two classes and a total of (69) fourth-grade students. Class (A) was chosen to represent the experimental set (34 students) while class (B) represented the learners of the control set (35 learners). The researcher divided the class into two groups, class (A) with 31 students and class (B) with 30 students, and removed the students who had failed the class the year before and had to retake it.

10. Samples Equivalence

There are some variables that might have an effect on both samples and thus intervene with the accuracy of the statistics, therefore, the researcher has controlled these variables to achieve more accurate results. The variables are (the total age of the students measured by months, educational level, and the scores of the first course in English class).

11. Extraneous Variables

Extraneous variables may have an impact on the experiment's result. As a result, the researcher made certain to equate them as well. The experiment lasted 60 days, and none of the students left away. They all developed at the same time because the experiment did not last way too long, therefore the growth is unified throughout all participants. Because the students were unaware that they were taking part in an experiment, the Hawthorne effect did not occur.

12. The Material

The test used the English for Iraq textbook for the fourth preparatory school, and the lessons covered units 5 and 6 from the syllabus. Throughout the study time, the researcher provided (20) grammatical lessons and defined a number of behavioral objectives to be reached throughout (20) lesson plans, as demonstrated by English teachers.

13. Instruments

The researcher employed pre-test and post-test for the control and experimental groups in order to achieve the study's predicable purpose. Twenty items of the grammar recognition examinations are presented in "Do as required" format. The test is planned to depend on the revised Bloom's Taxonomy of educational objectives. The allocated time for the grammar recognition test is 45 minutes and questions range from easy to difficult. In order to make the statistical analysis of the data from the before and post grammar recognition test plain and understandable, the results were interpreted in percentages and presented in tables.

14. Pilot Study

The test was administered to a pilot sample consisting of (47) fourth preparatory learners who were selected randomly from AL- Turath preparatory school on 13 April, 2022. The results of the pilot test outcomes proved the practicality of the test as well as the time required for answering which ranged from 40-45 minutes.

15. The Facilitation and Discrimination Power

The scores of the pilot test demonstrated that the facilitation power is between (0.41-0.82) when the item facilitation equation was applied. On the other hand, the discrimination power was between (0.43-0.86) after distributing the scores into three groups the high, the middle and the low, the researcher eliminated the middle scores and applied the discrimination power formula. The results has demonstrated that all of the test items have good facilitation and discrimination power.

16. Results and Analysis

16.1 A Comparison Between the Samples of the Study in the Post-test

The results of the post test for both the experimental group and control group demonstrate that the mean score is (17.26) for the experimental set and (14.53) for the control set. The results have proved that the achievement of the experimental group is better than that of the control group.

The T-test equation for the two independent samples is used and the scores are analyzed by using the Statistical package for social sciences program (SPSS). The equation was used to find out if there is a 76 significant difference between the participants of the two groups. The equation shows that the T value is (2.909) which means that a significance difference exists between the two samples at (0.5) level of significance and under (30) degree of freedom (Table.1).

(Table.1) T-test Statistics of the Post-test of both Groups

Group	No.	Mean	SD	DF	T- value	Level of significance
EG	٣١	١٧,٢٦	٣,٣٣٦	٣٠	٢,٩٠٩	0.5
CG	٣٠	١٤,٥٣	٣,٩٦٣	30	٢,٩٠٠	0.5

16.2 Comparison of the Pre-test and Post-test for the Control Group

The researcher uses the one sample T-test to calculate the difference between the scores of the control group across both the pre-test and the post-test. The results show that the mean score of the pre-test is (13.57) and that of the post-test is (14.53) with a T-value of (2.900) in (0.5) level of significance and (29) dgree of freedom. The statistical results demonstrate that there is a little difference between the two tests with the post-test being slightly higher (Table. 2).

(Table. 2) T-test Statistics for the Pre-test and the Post-test of the Control Group

Group	No.	Mean	SD	DF	T- value	Level of significance
Pre-test	30	13.57	4.614	29	2.900	0.5
Post-test	30	14.53	3.969	29	2.940	0.5

16.3 Comparison of the Pre-test and the Post-test for the Experimental Group

The researcher uses the one sample T-test to calculate the difference between the scores of the experimental group across both the pre-test and the post-test. The results show that the mean score of the pre-test is (12.90) and that of the post-test is (17.26) with a T-value of (2.901) in (0.5) level of significance and (30) dgree of freedom. The statistical results demonstrate that there is a significant difference between the two tests with the post-test being higher than the pre-test (Table. 3).

(Table. 3) T-test Statistics for the Pre-test and the Post-test for the Experimental Group

Group	No.	Mean	SD	DF	T- value	Level of significance
Pre-test	31	12.90	2.868	30	2.901	0.5
Post-test	31	17.26	3.963	٣٠	2.909	0.5

16.4 Conclusion

Artificial intelligence in education has produced many positive changes. It improves everything from classroom interactions to coursework learning and procedures. AI (Rosetta Stone) can almost certainly have an influence on every aspect of our lives in the future, and the education sector will be one of the most affected. Teachers play an important role in education system and can use technology (Artificial Intelligence) for learners to develop their language outcome. Artificial Intelligence can assist each students and teachers by providing them with an unique curriculum based on their interests and abilities.

The recommendation for the next researchers who want to conduct a study using Rosetta Stone, is to focus on the use of Rosetta Stone by students' listening skills. The first reason is because the previous studies and this study have been focusing on the use of this media by students' speaking skills and the students' grammar recognition. Therefore, will be better that the next study focuses on other skills, especially listening. The second reason is because there are many students who still confuse on how to master listening skill. The last reason is because Rosetta Stone provide many audios that may be useful for the students' listening skill.

References

Aws, M. (2018). Difficulties in learning grammar, a study into the Context of University of Technology, Department of Materials Engineering University of Technology Baghdad, Iraq.

Ahmadi, M. R. (2018). The Use of Technology in English Language Learning International Journal of Research in English Education (IJREE).

Brinton, J. L. (2000). The Structure of Modern English: a linguistic introduction. The Netherland: John Benjamin Publishing Co.

Churcher, P. R. (1991). The impact of artificial intelligence on leisure. AI & Society. https://doi.org/10.1007/BF01891720

Gilian, L. (2016). Rosetta Stone for Language Learning: An Exploratory Study. The IALLT Journal.

Habeeb, A. (2017). Artificial intelligence Ahmed Habeeb University of Mansoura. Gate, https://doi.org/10.13140/RG.2.2.25350.88645

Kengam, J. (2020). Artificial Intelligence in education. Bournemouth University, United Kingdom.

Köse, U.and Arslan, A. (2015). E-Learning experience with artificial intelligence supported software: An international application on English language courses. GLOKALde.

Kuiper, K., and Allan, W. S. (2017). Introduction: What is aLanguage? An Introduction to English Language. 1–24. https://doi.org/10.1057/978-1- 137-49688-1_1

Mohammed Z (2019). Artificial Intelligence Definition, Ethics and Standards. Issue 150407 . The British University in Egypt.

Nassaji, H. (2007). Issues in form-focused instruction and teacher education . Form-focused instruction and teacher education Studies in honor of Rod Ellis. Oxford: Oxford University Press.

Richards, J.C. and Schmidt, R. (2010). Longman dictionary of language teaching and applied linguistics. Fourth edition. Great Britain: Pearson Education Limited.

Rosetta Stone inc. (2010). teacher's guide , United States of America. Tel. 540.432.6166 • 800.788.0822 in the United States and Canada.

"Rosetta Stone (Software)" accessed on 16 May, 2018, https://en.wikipedia.org/wiki/Rosetta_Stone_(software)

Swain A. (2021). Advantages and Challenges of AI in Education for Teachers and Schools . Everything You Need To Know About Robotics in Education and Businesses. https://www.researchandmarkets.com/research/5lshzz/artificial