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tools module could add to their reading and writing in the TOEFLITP test.

Conclusion & Implications

In this research, AI powered tools were used in the instruction of reading and writing sections of TOEFLITP test. In a pre and post testing setting, results confirmed the development of participants' scores in these two sections of the test. This result can be useful for test-takers, instructors, course designers and test administrators. As for test-takers, they can benefit from the activities and tasks in their preparation for the test. Instructors can use the suggested module in individualizing the learning environment during their instruction for the test. The type of activities used in the module can add technology to their instruction procedures with all the merits it adds. Similarly, course designers can adapt AI as a means to designing interactive courses in this digital era with all challenges such as global pandemic education trends. These implications also apply for English Proficiency Tests EPS that are used in Egyptian universities as an adaptation for TOEFLITP scores that follow a similar layout. There are some challenges that faced the researcher during the application that included acoustic, connectivity through a network and challenges related to mobile use. Finally test administrators can use AI powered tools not only in instruction recommendations but also in grading systems in certain sections such as writing since it provides instant feedback about areas such as grammar, spelling and style.

Results of the study confirm the interrelated strategies followed by the participants during taking the TOEFL test due to the AI powered activities. These strategies include thinking of decoding the text, recognizing relationships, decoding prompts and responding to questions in order of their occurrences in the text. This hierarchy agrees with the type of activities powered by AI tools. In this view, Qammourah, Muhammad, and Krosh (2018) illustrated that the science of AI consists of two main parts: (a) *Memory* which is represented by the mental activities related to storing, and it is a form of intelligence called 'negative intelligence'. (b) *Inference* which is the ability to analyze and realize the relationships among things in order to understand facts through memory and logic. (p. 6)

Therefore, one of the key results obtained from using AI powered tools module is to change the way test-takers usually follow from mere *question-answer* strategies to *question- reflection-answer* strategy. Participants had to think of AI means they followed during test preparation before responding to questions bounded by time frame.

Finally, the type of feedback given by the students during the instruction of the module showed their satisfaction and positive attitudes. A chat group on WhatsApp was created to instantly receive inquiries, feedback and comments by the participants. They reported that they feel eager to use new technologies that can even correct them. Participants expressed their satisfaction with the spontaneous feedback they receive from apps such as Chatbot and the instant answers they find in Google Lens. Summing up, the qualitative and quantitative feedback that the students provided assure the positive developments that AI powered

Table 6: Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pre-Writing & Post-Writing	21	.438	.047

The above table shows the correlation between the pre and post writing testing procedure (.438) with a significance of (.047) which is lower than the correlation of the reading section. The above results show that there were significant mean differences between participants' scores in the pre and post testing of TOEFLITP- oriented reading and writing skills.

Discussion:

The obtained results highlight the impact of AI-powered apps module utilized in the research and agree with the studies that stressed the value of AI in language learning. Some of these studies include the studies of Abdel Khalek, Mawgoud & Ahmed, 2010; Ghoneim & Elghotmy, 2021; Radwan, 2017; and Setiawan, Shabbir & Nazari 2021. The development of both reading and writing skills due to the AI powered tools were due to the positive impacts that AI apps have on the learning environment. These impacts agree with Borge (2016) in the following points:

1. Artificial intelligence can automate basic activities in education like grading.
2. AI-driven programs can give students and educators helpful feedback.
3. Students could get additional support from AI tutors.
4. AI could change the role of teachers.
5. AI can make trial-and-error learning less intimidating
6. AI may change where students learn, who teaches them, and how they acquire basic skills. (pp. 10–11)

Table 4: Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)	
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference					
				Lower	Upper				
Pair 1	Pre-Reading & Post-Reading	-10.619-	3.514	.767	-12.219-	-9.020-	-13.849-	20	.001

The table shows that there are statistically significant means differences (sig .001) in the pre and post testing of TOEFLITP-oriented reading skills. This result accepts the alternative hypothesis and rejects the null hypothesis.

2. Second hypothesis

H.2. There would be statistically significant mean differences between participants' mean scores in the pre-post testing of TOEFLITP-oriented writing skills favoring the post testing.

To verify this hypothesis, the following statistical procedure was run:

Table 5: Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-Writing	18.38	21	4.500	.982
	Post-Writing	28.10	21	10.049	2.193

The table shows the differences in means (pre 18.38 and post 28.10) favoring the post testing. The Paired Samples Correlations shows the bivariate Pearson correlation coefficient (with a two-tailed test of significance) for each pair of variables entered as table (6) shows.

(26.05) and writing (28.10) compared to the pre testing of reading (15.43) and writing (18.38). This shows the differences in means of the participants favoring the post testing of both reading and writing. These differences in means were analyzed in the following statistical running guided by the hypotheses of the research.

1. First hypothesis

H.1 There would be statistically significant mean differences between participants' mean scores in the pre-post testing of TOEFLITP-oriented reading skills favoring the post testing.

To verify this hypothesis, the following statistic was run.

Table 2: Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-Reading	15.43	21	3.696	.806
	Post-Reading	26.05	21	4.995	1.090

The above table (2) shows the differences between the mean scores of the participants (pre 15.43 compared to post 26.05) in the pre and post testing of TOEFLITP reading and writing skills. To verify the significance of difference, the following statistical procedure was run.

Table 3: Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pre-Reading & Post-Reading	21	.711	.001

The above table shows that the paired sample statistic ($r=.711$), which is significant (.001) and therefore, there is a correlation in the paired sample in measuring pre-reading and post reading running. The following table verifies the significance of differences through means comparison.

validated before designing the module which was also validated by a jury of TEFL experts.

5. *A standardized Longman sample TOEFLITP, Test Three* (By Philips (2001).

6. *Writing rubric: it was used to assess test- takers' academic writing essays.*

Results and discussion

The obtained results from this research were generated from both quantitative and qualitative assessment instruments. The quantitative results were obtained from TOEFLITP reading and writing test sections that were run in a pre and post testing running while the qualitative results were obtained from the feedback of the participants in their feedback sheets. Following is a description for the obtained data from the test that were generated through SPSS analysis, then a discussion for the results of the hypotheses of the research.

Table 1: Descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Pre-writing	21	14	28	18.38	4.500
Post -writing	21	15	40	28.10	10.049
Pre-reading	21	7	21	15.43	3.696
Post-reading	21	19	33	26.05	4.995
Valid N (listwise)	21				

The above table indicates the distribution of the sample, their number (21), means, standard deviation and the type of assessment that was run over two test sections (reading and writing). The table shows how the means of the participants were higher in the post testing of Reading

Instrumentation

The research utilized the following instruments that followed three main stages: the design, validation and application. The instruments are attached in a QR code format.

1. *TOEFLITP-oriented reading skills questionnaire*: it aimed at identifying the reading skills that are needed for the test takers. The checklist was validated in terms of validity and reliability. Validity of the checklist was run through content validity (jury validation) and through square root of the (r) value and was (0.87). Using Cronbach Alpha statistic, r value was (0.90), which is a high reliability coefficient.
2. *TOEFLITP-oriented writing skills questionnaire*: it aimed at identifying the writing skills that are needed for the test takers. The checklist was validated in terms of validity and reliability. Validity of the checklist was run through content validity (jury validation) and through square root of the (r) value and was (0.88). Using Cronbach Alpha statistic, r value was (0.89), which is a high reliability coefficient.
3. *AI-powered tools apps questionnaire*: it aimed at identifying the AI powered tools to be included in the module. It was validated by a jury of TEFL experts. The jury reported the validity of the questionnaire and chose the apps (see delimitations section) that can be used in the research.
4. *AI-powered apps module*: it included reading and writing instructional units for TOEFLITP test. A frame was designed and

sessions around doing the reading and writing tasks in this module that aimed to develop (10) reading skills and (12) academic writing skills "refer to appendix).

Delimitations of the research

The research was delimited to the following:

1. Participants: a group of (21) participants – number was limited to lab capacity- from South Valley University, Languages Learning and Research Center in Hurghada, Egypt.
2. Variables: the independent variable is a module based on AI-powered tools; while the dependent variables are TOEFLITP-oriented reading and writing skills.
3. AI powered tools: The research utilizes Interactive Smart Board and a list of AI-powered apps as determined by a questionnaire (Reader pro- Andy – Elsa speak – AI grammar –Google Documents- A-chat Bot –Google Lens- G-translate- Google Assistant).

- The following table shows how the apps were used in the module during the ten sessions.

Skills	Sessions	AI-Powered Apps use
Reading	1. Introduction 2. Strategies 3. Controlled practice 4. Free practice 5. Assessment	Reader pro is used for training speed-reading. Elsa Speak is used for listening to the reading passage. G-lens is used for gathering data about the reading passage. G-translate is used for vocabulary and sentence translation. Smart board is used as an interactive instruction tool. G-assistant is used for feedback about the text.
Writing	1. Introduction 2. Pre-writing 3. During writing 4. Post-writing 5. Assessment	Andi is used for writing and revising the written work. AI grammar is used checking grammar and style. G-document is used for auto-correction. Chat-bot is used for feedback and revision. Smart Board is used as an interactive instruction tool.

2. What are TOEFLITP-oriented writing skills that can be developed using a module based on AI-powered apps?
3. What is the effect of a module based on AI-powered tools in developing participants' TOEFLITP-oriented reading skills?
4. What is the effect of a module based on AI-powered tools in developing participants' TOEFLITP-oriented writing skills?

Hypotheses of the research

The research hypothesized the following:

1. There would be statistically significant mean differences between participants' mean scores in the pre-post testing of TOEFLITP-oriented reading skills favoring the post testing.
2. There would be statistically significant mean differences between participants' mean scores in the pre-post testing of TOEFLITP-oriented writing skills favoring the post testing.

Research Design

The research followed the one-group quasi-experimental design with its pre and post testing procedure. Variables of the research included an independent variable (English language module based on AI-powered apps) and dependent variables (TOEFLITP reading and writing skills). Participants were randomly selected from Language Learning and Research Center, Hurghada Faculty of Education, Egypt. Using the pre and post testing procedure, means of the participants were compared and statistically analyzed to verify the difference in means before and after running the experiment. The adopts the task-based approach which aims at planning materials and teaching the

reading comprehension and academic writing skills that are oriented to the test.

Aims of the research

The research aims to the following:

1. Designing TOEFLITP –oriented module based on AI-powered tools.
2. Identifying the effect of the module on participants' TOEFLITP-oriented academic reading skills.
3. Identifying the effect of the module on participants' TOEFLITP-oriented academic writing skills.

Significance of the research

The research is thought to be significant for the following:

1. For course designers: compiling a module that can be useful in TOEFLITP instruction and training. The compiled module is an attempt to integrate modern technology in the instruction of the test apart from the traditional practices.
2. For Instructors: providing test instructors with activities that depend on AI for the instruction of TOEFLITP test.
3. For TOEFL test takers: the module can be used in enhancing participants' reading and writing scores in the test. It can also be useful in other sections of the test such as the structure and written expression section of the test

Questions of the research

The research seeks to answer the following questions:

1. What are TOEFLITP-oriented reading skills that can be developed using a module based on AI-powered apps?

The second approach followed by the researcher was to apply a semi-structured questionnaire that was posted on Google Form (Link: <https://forms.gle/mxdFKw77qygSbMNP8>) to identify test-takers' approaches in the preparation for the test. Key results showed the following:

- TOEFLITP instruction lacks the use of technology during preparation courses.
- Participants rely on set instruction strategies and books for the test preparation.
- Some of the respondents have reading or writing difficulties.
- Some of the respondents are not aware of Artificial Intelligence powered tools.

This challenge in integrating technology such as Artificial Intelligence as well as the difficulties that test takers face in TOEFLITP test was supported by literature. For instance the studies of AL Taie, 2014; Khairy & Kamil, 2014; and Razak, 2011 recommended the integration of technology in TOEFL instruction. Other studies such as Abdel Khalek, Mawgoud, & Ahmed, 2020; Al Mukhallfi 2020 reported the value of AI in English language instruction and assessment.

Based on the previous analysis of results and literature review, problem of the research can be stated as some TOEFLITP test takers face difficulties in responding to reading and writing sections of the test. There is a need to implement authentic smart technology in the instruction and preparation for the test. Therefore, the research attempts to identify the effect of some AI-powered tools in enhancing TOEFLITP test-takers'

impaired students, developing student's vocabulary, developing speaking skills, and developing essay writing" (p.2). Therefore, it can be concluded that the various applications of artificial intelligence can be tailored for developing various language aspects in English as a Foreign Language including tests that measure English language proficiency such as Test of English as a Foreign Language TOEFL. These AI powered tools have positive impacts on enhancing foreign language learners' proficiency and this is what the following analysis of results is discussing.

Problem of the research

Through analyzing a sample of institutional test preparation answer sheets at Hurghada languages learning and research center (N.24), the following data were obtained that show clearly the low scores of the participants in reading and writing:

- 50% (12 test-takers) did not complete all the reading and writing sections questions.
- 83.33 % (20 test-takers) have reading comprehension errors such as (concepts- synonyms- antonyms- skimming-scanning-inference – word recognition – contextual clues- structural clues).
- 91.66% (22 test-takers) have major academic writing difficulties such as (planning for writing – coherence – cohesion – style- reference – drafting – revising).
- 79.16% (19 test-takers) followed fixed reading comprehension strategies.
- 70.83 % (17 test-takers) did not achieve the required proficiency scores of 450 - 500.

AI applications have been investigated in Egyptian EFL research based on the value they add to language teaching or learning. In this view, Abdel Khalek, Mawgoud, & Ahmed (2020) identified ten key applications that can be used in education and learning. These applications included adaptive learning, automated grader, chatbot, chatcampus, data accumulation, personalized learning, proctoring, smart content, virtual facilitator, and PopBots. In a university level, Al Mukhallafi (2020) highlighted the use of AI systems such as Intelligent Tutoring Systems, Activating the Internet, Activating Hypermedia, Activating distance E-learning. AI applications can be used in different EFL contexts using variety of applications, tools and systems that can enhance various language skills.

AI applications can be directed to motivation and enhancing the teaching / learning environments in EFL domain. There are various AI applications that are tailored to learner motivation. In this view, Muhammad (2014) conducted a study that aimed to identify motivation applications in artificial intelligence. The study discussed the various AI applications for this purpose; they included developed hybrid systems, electronic neural systems, application for developing algorithms, electronic auto-copying, adaptive electronic platforms, and advanced controlling systems. The study provided an overview about the vast use of AI tools in various learning environments.

Using AI in EFL context overcomes many of the difficulties in both teaching and learning. According to Radwan (2017), these merits include "building the ability to comprehend reading passages, developing translation skills, correct pronunciation, used for blind and visually

The model shows the algorithms during the process of information between cognitive models and the return of feedback to the learner. The four elements of the model integrate the domain of learning with pedagogy and two types of learner models. Thus, implementing a machine learning-based environment requires a setting for the skills to develop, adapt techniques and a feedback about the process itself.

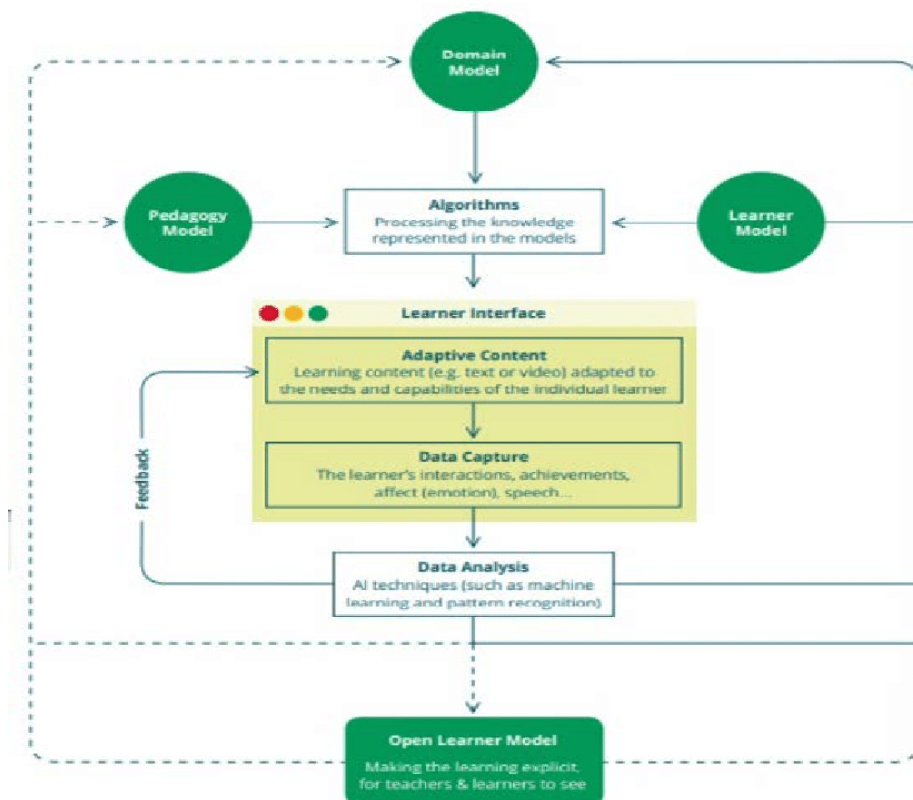
AI powered language learning applications are machine learning instruments that have positive impacts in Foreign Language Learning. These apps have a remarkable input on learners' phonological ground, supporting foreign and second language learning and linguistic accuracy. According to Ghoneim & Elghotmy (2021), using AI tools is a requirement for active processing which requires an adequate understanding of the encrypted message and its content. That is acquiring language skills and areas such as vocabulary and grammar can be meaningfully ordered when instructed using artificial intelligence based tools. For instance, Google translate affects students' structural ability and therefore learners' linguistic ability.

Using Artificial Intelligence for instruction or developing teaching and learning in EFL context requires further class-based plans and design for the learning adaptation. In this view, Al Mukhallafi (2020) investigated using artificial intelligence for developing English language learning from students' perspective. The study followed an analytical design and the results showed the positive impacts of AI in teaching and learning from students' perspective. The study called for practices that utilize the use of AI in English as a foreign language context.

In this research, AI refers to the use of certain applications such as chat bots, G-apps and other smart technologies to develop TEFLITP test-takers' language skills (reading and writing). Artificial intelligence is also an approach to implement both hardware and software in foreign language instruction and assessment to process data in cognitive contexts.

The following figure (1) illustrates the environment of setting an AI powered machine learning environment. The figure shows the model by Pearson (2016) about building an internal representation of the learner to adapt a learning environment based on machine learning.

Figure (1) Data processing in machine learning cognitive models



learning English. Students' extrinsic motivation was higher compared to intrinsic motivation in that the former factor "(P.4). There are various Artificial Intelligence powered tools that are used in language learning and assessment which include Reader pro, Andy, Elsa speak, AI grammar, Google Documents, A-chat Bot, Google Lens, G-translate, Google Assistant. These tools are used in word recognition, sentence and paragraph translation, grammar checking, style correction, plagiarism checking and text source finding.

Therefore, due to the value of AI powered tools, there is a need to integrate such tools in English language courses as well as the high-scale proficiency tests such as TOEFL. The main research aims at integrating some of these AI-powered tools in the instruction of reading comprehension and academic writing sections of TOEFLITP test.

Artificial Intelligence AI is a field of computing that utilizes both tools "hardware" and applications "software" that function "smart" commands. Al Mukhallafi (2020) tracked the history of AI and expressed the view that "AI was first recognized by John McCarthy in 1956. At that time, it generated a considerable number of disputes and controversies around "Can machines think?" and the difference between human intelligence and AI was studied" (p.42). According to Al-Shawabkha (2017) AI is "the abilities transmitted to computers to enable many performance systems to be smart and resemble humans in their behavior" (P. 23). It includes the process of study, design and development of computer systems that stimulate human intelligence.

Artificial intelligence (AI) is the use of technology whether software or hardware to execute tasks and assignments which are smart assimilating human intelligence. Luckin, et al. (2016) defined AI as "Computer systems that have been designed to interact with the world through capabilities (for example, visual perception and speech, recognition and intelligent behaviors) assessing the available information and then taking the most sensible action to achieve a stated goal) that we would think of as essentially human" (p. 14). AI technology "tools" include hardware such as smart boards or VRs which are though useful but expensive while software includes many applications that are not as easy to use and cheap.

AI-powered tools that can be used in language learning due to the positive impacts they have for learners. Azevedo, A., et al. (2020) expressed the view that "AI-powered tools in education are seen as potentially beneficial to both students and teachers since they offer the opportunity to experience personalized, flexible, inclusive, and engaging learning. They also provide teachers and learners with the tools that allow them to respond to how it is being learned, and how the student feels rather than what is being learned"(P. 8).

AI powered tools have positive impacts on both the learning environment and learner autonomy. For instance, Aly (2020) further expressed the benefits of using AI-powered tools in language learning and assessment stating that "AI and flipped learning amalgamate in the blended classes and this combination provides many positive impacts to the learning of the language. In terms of self-efficacy, it was found that students were more positive in

Adopting recent technologies in the instruction of TOEFL affects both students' attitudes and teachers' practices positively. The traditional "Teach-Model-Practice-Explain" is no more effective in a mobile-based classroom. In this view, Wang (2019) conducted a study about the impact of TOEFL on instructors' course content and teaching methods. The study with its qualitative design and running over a sample of students and teachers indicated that most teachers rely on text books to teach and practice test-taking strategies. The study also showed that teachers' beliefs have shaped their teaching methods and their different beliefs led to students' varied attitudes towards the TOEFL class.

The instruction of TOEFLITP has been widely discussed in pertinent literature, for instance, Fadhilla, 2019; Hidayat, 2020; Kamil et al. 2020; Netta, 2019. The majority of the studies that investigated TOEFL were concerned with the whole test rather than its sections. There are some studies that dealt with reading and writing sections separately. For instance the reading section was examined in the studies of Dooden, 2015; Philips, 2014; and Roger, 2005, other studies dealt with writing such as Chon, Kim, & Shin, 2021; Setiawan, Shabbir & Nazari, 2021. These studies dealt with implementing strategies for instruction or suggested class activities to excel in reading and writing sections of the test. These studies lacked the application of technology in the preparation for the test compared to the main study that suggests Artificial Intelligence applications use in the instruction of these sections of the test.

viewed TOEFL differently by implementing a fairly new discipline which is Artificial Intelligence AI in the instruction of the test. The following section discusses the literature related to AI and how to use its applications in instruction and assessment.

In the light of the above review of literature, the following skills were selected to be integrated in the module:

A. Reading:

1. To recognize vocabulary using structural and contextual clues.
2. Identifying factual information in a passage.
3. Identifying negative factual information in a passage.
4. To infer key ideas in a passage.
5. Recognizing rhetorical purpose ideas in a passage.
6. To recognize the structure and types of sentences in a passage.
7. To recognize key ideas, key details and summary in a passage.
8. To identify the organization of ideas in the passage.
9. To skim a passage for main ideas.
10. To scan a passage for minor ideas.

B. Academic writing:

1. To recognize the structure of the paragraphs.
2. To recognize the layout of the academic essay.
3. To use a variety of ideas generating techniques.
4. To use correct grammar, punctuation and spelling.
5. To develop an academic argument.
6. To follow a correct essay organization and layout.
7. To master proofreading skills.
8. To follow effective drafting techniques.
9. To follow a citation style.
10. To develop a thesis and a center claim.
11. To use effective transition words.
12. To keep coherence and cohesion.

to some administrations of the Test of English as a Foreign Language TOEFL" (P. 1). With this major addition of TWE section, there are four sections for the TOEFLITP test.

Reading and writing skills and strategies are core sections in the test-taking preparation materials of TOEFLITP. These test-oriented skills have been core variables to develop using AI applications. For instance, Setiawan, Shabbir & Nazari (2021) examined the application of Artificial intelligence powered digital writing assistants in higher education: randomized controlled trial. The study was run over a sample of 120 students using a writing tool based on AI. Results showed that the test-takers in the experimental group outperformed the control group in the cognitive, affective and behavioral aspects. The type of engagement that the participants showed was significant and stressed that using AI tools in writing classes can develop the writing skills of the test-takers.

Similarly, Chon, Kim, & Shin (2021) conducted a study comparing L2learners' writing against parallel machine translated texts: Raters' assessment, linguistic complexity and errors. The study compared between three different writing modes and compared between the different types of students' errors. Results showed that MT narrowed the difference of writing ability between the skilled and less skilled learners.

Literature in both reading and writing sections of TOEFL test discussed instruction strategies, assessment strategies or approaches to follow (see Chon, Kim & Shin, 2021; Dooden, 2015; Philips, 2001; and Setiawan, Shabbir & Nazari, 2012). The main study

Reading and writing are key sections of TOEFLITP test. There are four main sections in the test: the first is the listening section that includes 3 main types of listening tasks and lasts for 30-40 minutes. According to Educational Testing Service (2018), TOEFLITP Test takers have to respond to various reading comprehension strategies such as inference, guessing, meaning identification, reference, skimming, and scanning. The second section is the structure and written expression that includes 40 items and lasts for 25 minutes. The third section is the reading comprehension which includes 50 items and lasts for 25 minutes. The fourth section which was added to the test in 1986 is the Test of Written English TWE part which lasts for 30 minutes.

In the writing section, test-takers have to respond to an academic topic and to write an essay about it. These writing tasks are paper-based compared to the written tasks in the other online version of TOEF Test (Wang, 2019). This Test of Written English (TWE) includes academic writing tasks which are scored through writing rubrics. According to Akbarian (2012), the measures of writing ability continued to evolve as more students are pursuing higher education in English medium universities. Given the wide use of the TOEFL in admissions decisions in many universities have grown to support and help students to prepare for the test. The writing tasks of the test include academic topics where test takers have to write academic essay in 30 minutes. According to Kroll (2021), "In 1986, Educational Testing Service (ETS) added the Test of Written English (TWE), which requires the production of a 30-minute writing sample,

Introduction

Test of English as a Foreign Language TOEFL is a standardized test aims at measuring the test-takers' proficiency in the English language. According to Brown (2005), it is a test assessing the general knowledge or skills commonly required as an entry prerequisite in an academic institution. According to Abboud and Hussein (2011), TOEFL is administered in four formats; The Paper-Based TOEFL (PBT), The Computer-Based TOEFL (CBT), The Internet-Based TOEFL (IBT), and Institutional Testing Program (ITP). This research investigates the ITP format of the test, mainly reading and writing sections.

Test of English as a Foreign Language TOEFL (ETS, 2018) is the English proficiency criteria for international students to gain university admissions in English speaking countries. The test has two main forms: Institutional (paper form) and internet-based (online) forms. The main research is designed to the institutional (paper) test form due to its common use inside higher educational institutions in Egypt. The test has four main sections: the listening section, structure and written expression, reading, and academic writing section. This research scope is directed to the reading and writing sections of the test. TOEFL has been investigated in many studies with relevance to proficiency, achievement, communicative competence and language skills using various techniques (see Al Taie, 2014; Khairy& Kamil, 2014; and Razak, 2011). These studies recommend using various technologies in the instruction as well as the design of TOEFL preparation materials.

Implementing Artificial Intelligence-Powered Tools in Enhancing TOEFL-ITP Test Takers' Reading and Writing skills

Abstract

The research aimed at identifying the effect of an English language module based on AI-powered tools for developing Tests of English as a Foreign Language- Institutional Test Preparation TOEFLITP- oriented reading and writing language skills. The main TOEFLITP skills were delimited to reading and writing sections. The module utilized 9 Artificial Intelligence based tools (Reader pro- Andy – Elsa speak – AI grammar –Google Documents- chat Bot –Google Lens- G-translate- Google Assistant). Instruments of the study included TOEFLITP- oriented reading skills questionnaire, TOEFLITP- oriented writing skills questionnaire, AI-powered tools apps questionnaire, AI-powered apps module, A standardized sample TOEFLITP test, and Writing rubric for assessing academic writing section (Based on ETS guiding rubric). The study followed the one-group quasi-experimental design with its pre and post testing procedure over the participants (N. 21) randomly selected test-takers. Results of the study showed that there were significant mean differences between participants' scores in the pre and post testing of TOEFLITP- oriented reading and writing skills at significance level (0.01). The research recommended using AI tools in reading and writing instruction as part of preparing test-takers for the test. It also recommended integrating further AI technologies in the instruction of TOEFL-iBT and TOEFLITP tests.

Keywords

Artificial Intelligence – Reading – Writing – TOEFLITP



*Implementing Artificial Intelligence-Powered Tools in
Enhancing TOEFL-ITP Test Takers' Reading and
Writing skills*

**تضمين أدوات الذكاء الاصطناعي في تحسين مهارات القراءة والكتابة
لدى المتحنيين بالاختبار المؤسسي للغة الإنجليزية كلغة أجنبية**

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