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The Impact of Artificial Intelligence on Accelerating English language acquisition at the university level:

A case study of third-year English major students at White Nile University

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Abstract

The paper aimed to investigate the effect of artificial intelligence in enhancing and accelerating the acquisition and learning of English language. The paper adopts both the quantitative and qualitative methods, in which the experimental approach as well as the descriptive analytical approach are adopted. The two variants communities of the study are the students (Ss) of the third level of White Nile University (WNU) who are majoring in English Language and the lecturers of English Language at some White Nile universities and colleges. the sample of the third level students consists of 26 Ss who are randomly picked, they are divided into two equal groups of 13 each, for the Purpose of applying the experiment of the application of the AI in English language classes, to their impact and effect in accelerating and enhancing the acquisition and learning of English language at tertiary level. This is applied to group (A), whereas group (B) is left solely to the traditional classroom instruction. The second sample consists of 25 lecturers of English language who are of White Nile State higher education institutions, who are administered to a mini questionnaire to elicit their views on the effect of AI in the acquisition of English language at tertiary level. Tabulating the information taken from the samples and after the processing and the analysis, the result that is obtained from the oral test of the two groups of students i.e (A) and (B) have shown that group (A) who are subjected to AI as subsidizing and enhancing for their instruction has shown headway and perfection in acquiring English, whereas group (B) is seen lagging behind and stays in its same normal standard in acquiring English language. As for the second sample .i.e of the English lecturers who are responding to a mini questionnaire has given a feedback of the effectiveness of AI in consolidating and accelerating the acquisition of English language at tertiary level. Based on the result reached, the paper highly recommends the application of AI in English language classes at higher education institutions.

Key words: Artificial Intelligence Acquisition, Accelerating Tertiary Level, Ss [students]

Introduction

One of the most difficult tasks for any educator is learning how to motivate and engage the learners with whom we interact. It has been widely accepted that learners who are motivated are actively involved in teaching and learning process, retain information more efficiently, relate new information to previous information, and ask questions while interacting with new information. One so late and recent factor for motivation is the consulting of artificial intelligence for the purpose of education .With the aid of modern technology teachers can integrate picture, images, animation. etc. into teaching material, making learning more interesting, it brought changes in teaching content, environment and learning from many studies have shown that modern technology can improve the outcomes of education. Due to this governments from all over the world have attached much importance to the modern technology such as integration of Al into education. Although, it is an undeniable fact that technology can significantly enhance the effectiveness of English education if it is used properly.

Statement of the Problem

The standard of English language isn't in anyway like it's used to be some decades back. This is due to a number of factors, among them the number of hours or time allotted for practicing outside, since it's very difficult to revise English classes only in class, since the environment is not encouraging to the students to go daily over their classes inside the classroom only. But luckily, now "The modern technology every now and then avail what could be a sort of help in this field. Today, artificial intelligence is a good help in the field of teaching and learning. But, could it be a sort of help to

accelerate the acquisition of acquiring English Language at tertiary level students? This is what this study attempts to answer.

Objectives

This study aims to realize the following objective:

-The importance of applying artificial intelligence in enhancing the acquisition of English language at tertiary level students.

Question of the study

-what's the impact of using AI in the learning and acquisition of English Language at tertiary level?

Hypothesis of the study

This paper is after verifying the following hypothesis:

-AI plays a pioneering role in enhancing and accelerating the acquisition of English Language.

Significance of the study

This study is very important since it investigates the effect of AI in enhancing the acquisition and learning of English language. Particularly, that AI nowadays appears a fashion and a tool that all people directed attention to in all aspects of life, and education is not an exception. AI might turn to be useful and a great help to tertiary level students and particularly to those who are majoring in English language.

Literature Review

Introduction

Globalization and the industrial era have created new creativity, opportunities, and challenges such as in modern technology. Rahman, (2009) states that artificial intelligent (AI) creates software that filters knowledge and other autonomous function, such as computation or student search. According to Ribero, (2020), states that artificial intelligence in English language teaching (ELT) is the most realistic way English language teachers can use.

What is artificial intelligence (AI)?

Artificial intelligence (AI) is the ability of a constructed machine, such as a computer, to simulate or duplicate human cognitive tasks. A machine with Al can make calculations, analyze data in order to create predictions, identify various types of signs and symbols, converse with humans, and help execute tasks without manual input. AI has its roots in the very beginnings of computers and mathematician Alan Turing was one of the first to describe how an artificially intelligent machine could function. All computers built since then are artificially intelligent on some level as they are able to perform computations that could previously only be done by humans. However, in recent decades, computers abilities, speed, and storage capacity have expanded rapidly .Today the term "AI" refers to the more advanced cognitive tasks that computers can do.

How does AI work?

Most AI is built on the analysis of big data sets that contain too much information for any human to analyze on their own in a reasonable time. An AI model is built to identify patterns in those data sets, and then use those patterns to predict future or additional patterns. AI models use probability and statistics analysis in order to do so. Some Al models are good enough at this to mimic human behaviors.

According to Muaz Ibn Masud, (2024)

States that artificial intelligence in education is the integration of intelligence systems designed to replicate and stimulate human intelligence in education settings.

These Al systems are capable of performing tasks traditionally handled by teachers and admin administrators, ranging from tutoring and grading to data management and Curriculum design.

What are the different types of AI

The ways of organizing various approaches to Al are constantly evolving in 2024, we can classify Artificial Intelligence, into at least seven distinct types: three capabilities-based types and four functionally -based types that loosely correspond to Maslow's hierarchy of needs. The simplest AI technological match with the basic survival of Maslow's model.

The four functional types of Al are:

1. Reactive machines-

2. limited memory.
3. Theory of mind.
4. Self-aware.

The three types of Al based on Capabilities are:

1. Artificial narrow intelligence.
2. Artificial general intelligence.
3. Artificial super intelligence.

What's narrow artificial intelligence?

Narrow intelligence, also known as Weak Al, refers to artificial intelligence systems designed to perform a specific task or solve a particular problem. These systems are trained on a limited dataset and excel in narrow domain, Such as:

1. Image recognition
2. Language Translation.
3. Speech recognition
4. Playing chess or go.

Narrow intelligence systems lack general intelligence, common sense, or the ability to apply their knowledge beyond their specific domain. They are designed to perform a particular function and are not capable of general reasoning or decision-making.

What is artificial general intelligence?

Artificial general intelligence (AGI) is the term for a computer's ability to think original thoughts, reason, plan, and otherwise duplicate human cognitive abilities. In simpler terms, an AGI program would be essentially, "human" or "conscious" in its intelligence. An AGI entity would have moved beyond statistical computation. It would be able to think and make decisions on its own, and it would be able to generalize from much smaller samples than is currently necessary for training AI programs. As an example of the latter, a human child may only need to see a few dozen examples of stop signs to be able to identify stop signs in a variety of contexts, whereas current Al programs need to see thousands or millions of images of stop signs before they can consistently do so. But an AGI would be able to learn about as quickly as a human, if not faster. To some extent, determining if AGI has been achieved is a philosophical question rather than a technical one. But regardless of how AGI is defined, most researchers and experts agree that it is at least several years away from being practical.

What's artificial super intelligence?

Artificial super intelligence (ASI) refers to a hypothetical Al system that possesses intelligence surpassing human intelligence in all domains, including:

1. Reasoning
2. Problem-solving
3. Learning
4. Creativity

ASI would be potentially helpful:

1. Outthink humans
2. Improve itself recursively
3. Solve Complex problems unsolvable by humans.

The development of ASI raises ethical, Safety, and existential questions, as its capabilities could significantly impact humanity some experts debate its potential benefits and risks, while others argue it's still speculative.

The history of AI in education

Muaz Ibn Masud, (2024) also explains that the history of Al in education cannot be discussed without first exploring the broader origins of artificial intelligence itself.

The concept of AI began taking shape in 1950s, when pioneers like Alan Turing started exploring the idea that machines could simulate human intelligence Turing's revolutionary work, including the Turing test, was a significant milestone in the evolution of AI. This test evaluated whether a machine could exhibit intelligent behavior in distinguishable from that of a human, essentially creating the

framework for modern Al development. While Turing's ideas were largely theoretical at that time, they set the stage for a technological revolution that would, in time, have a profound impact on education systems worldwide, in which the Sudan is not an exemption.

The advantages of using modern technology in teaching English

Wang et.al, (2019) states that for many years, English teaching methods in many countries are characterized by the traditional one-way teaching mode, known as test-oriented teaching methods. Words, expressing and collocations are learned by memorization, which constitutes a heavy burden for learning. In addition, under the traditional teaching mode, there is a lack of authentic English speaking environment which is important for language learning. Nowadays, teachers use modern technology, such as Al, to assist English teaching, enabling students (Ss) to rich resources and have more opportunities for exposure to a foreign culture, which will improve Ss interest in learning and in turn, change Ss altitudes towards English learning. Modern technology refers to any technologies that use computers and modern communication means obtain, transfer, restore, process and allocate information. In general, modern technology can benefit English teaching and learning in several ways:

1. Enabling access to rich resources from the internet.
2. Increasing participation and motivation in English learning
3. Creating an authentic learning experience.
4. Supporting individual learning modern technology enables individual learning.
5. Increasing interaction and cooperation in the teaching process-
6. Improving the outcomes of learning.

What are the disadvantages of Using AI in ELT/L?

Dr. Crompton et al, (2022) stated that the disadvantages and risks of Al systems in ELT/L did not appear to be as however, are a flexible solution for the educational system and are appropriate for some forms of assistance.

The problem of using machine teacher or robot

Senad Orhan in March, 2023 states that academic research into robot and machine ethics is active and developing, and it stimulates discussion and discourse similar to that of (human) ethics. According to Asimov, (1995), the three laws of robotics emphasize the following:

(A) Law 1: a robot may not intentionally harm people or through in action, permit someone to harm people.

(B) Law 2: a robot must follow human Commands unless they violate the first law. (C) Law 3: as long as the defence it is existence, on the other hand, teachers struggle to understand how or why robots can be used in the classroom and exhibit a limited understanding of the types. Of technology robots use (Hrasinski et al., 2019). For instance, the university of Memphis researchers created the intelligent tutoring program Auto tutor to instruct complex critical thinking ideas based on predetermined lessons, it offers step-by-step reading comprehension exercises. Much research has been done at Carnegie University on a tutoring program that teaches how the typical student learns. The software tests every approach to solving a problem based on machine learning algorithms and, as a result, automatically generates every possible educational path (Buchert, 2022).

The involvement of robots in the education process becomes an essential issue which raises various predictions. For example, Anthony Seldom, vice-chancellor of the University of Buckingham, predicts that by 2027, less than ten years from now, robots will replace teachers. In contrast, Matthew Long tin, a qualified writer for propane disagrees, He claimed that since robots lack a soul and com not inspire students the way people can, technology cannot replace human support and encouragement, these two contradictive statements, in the end, concluded by Sayeed, (2020), who stated that robots might be crucial to children education but will never fully replace teachers.

In the era of computer-assisted instruction, one of the main objectives of learning is to enable Ss to analyze fundamental knowledge and skills that can be mastered by a variety of machines. Such as speculative skills, practical skills, and collaborative communication skills, to foster curiosity and to help Ss develop a sense of lifelong learning, rather than just learning facts off by heart (Zhao and Liu, 2018), this condition was already tested in 2016 when a technology professor in Georgia used an artificial intelligence robot as an online teaching assistant, only at the end of the semester did he reveal

was to student, the set Ss were who he really astonished and stated they could not distinguish between the robot and a real person (Mehta, 2022).

A similar condition also appeared when Tae-Gyu, (2010) stated that robots are expected to replace some English-speaking teachers in South Korea. During the second decade which caught everyone's attention. The same article start stated that by 2015, robots should be able to assist teachers in English language classes, according to shin-Hwan, (2010) an economist at the Hyundai Research Institute.

By 2018, they ought to be able to interact with Ss and Learn independently. He asserted that robot will also develop from their current state (like an online learning environment) to become autonomous teachers who do not need human supervision (Tae-Gyu, 2010).

The study: Analysis and Discussion:

The study adopted two approaches to finalize perfectly the study in question. The first approach is experimental one which the participants (26) who are third level Ss of white Nile University who are majoring in English language. They are divided into two groups of (13) each. Group (A) Ss whose English classes' instructions are enhanced via Al activities and exercises. Whereas, group (B) students are traditionally instructed, this is for a whole semester. In subjecting the two groups to the oral test the scoring of the two groups has shown a significant variation in which group (A) scored the highest possible standard of perfection in oral English performance. Contrary to group (B), which scored less than expected, since their exposure to the traditional ways of teaching methods let them stays their grounds. Based on the collected information that is tabulated below the analysis would be read as follows:

Table (1): Scoring of group A in the oral test

Group A	5	6	1	1	-
	A	B	C	D	F

Table (2) group (B) which carried classes in traditional instruction the scoring in the oral test.

Group B	1	1	2	6	13
	A	B	C	D	F

Where the grades of A, B, C, D, and F.

Table (3) Take the following ranges of values; as read in the table below.

100-85	84-75	74-65	64-50	49-0
A	B	C	D	F

In Group A (the experimental group) 5 participants scored A (100-85), 6 scored B (84-75) 1 scored C (74-65) 1 scored D (64-50) no one scored F. As for Group (B) (of traditional instruction) its scoring comes as follows: 1 Ss scored A (100-85) 1 scored B (84-75) 2 scored C(74-65), 5 scored D (64-50) and 2 Scored F (49-0). The above reading clearly shows and verifies the impact and effect of AI in accelerating and chancing the acquisition and learning of English language of tertiary level Ss. The quantitative approach in finalizing is administered to the other participants who are lecturers at a number of universities at White Nile State. The researcher has chosen lecturers to represent the community of the study. Tabulating their responses, the analysis and discussion would be as follows:

Data Analysis and Discussion:

Table (4): Artificial intelligence in English language teaching creates an enhancing environment.

Statement	Percentage	Frequency
Strongly agree	52%	52
Agree	40%	40
Strongly disagree	0%	0
Disagree	4%	4
undecided	4%	4

From the table (4) the study notes that (52) respondents responded strongly agree, scoring (40%), respondents responded agree, (0) participant respondents responded strongly disagree undecided scoring (4%). Whereas for strongly disagree and disagree respondents scored (4) for each, reaching the

percentage of (4%). So, the vast majority of the respondents responded into the direction of strongly agree, hence AI accelerates and enhances acquisition and learning English language at tertiary level.

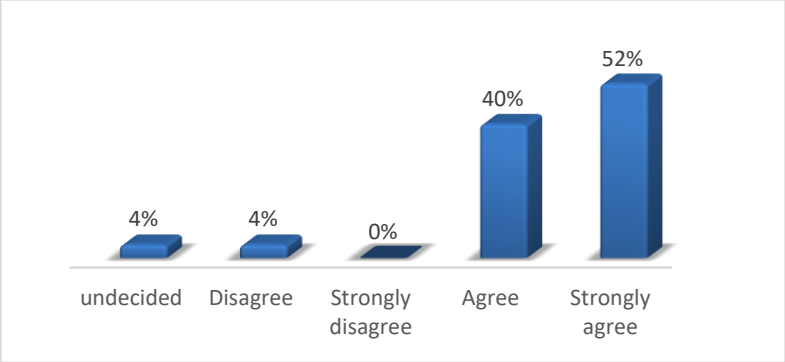

Fig (1) Artificial Intelligence in English language teaching creates an enhancing environment.

From the figure (1) the study notes that: (52) respondents responded strongly agree, (40) respondents responded agree, (0) respondents responded undecided scoring (0%). Whereas for strongly disagree and disagree respondents (4%).Thus, AI is so effective in accelerating the acquisition of English language. So, the vast majority of the respondents responded into the direction of strongly agree and agree, hence AI accelerates and enhances the acquisition and learning of English language at tertiary level.

Table (5): E-learning is more interactive, motivating, and self-directed for Ss.

Statement	Percentage	Frequency
Strongly agree	14%	14
Agree	9%	9
Strongly disagree	0%	0
Disagree	0%	4
undecided	2%	2

From the table (5) the study notes that (25) respondents responded strongly agree, scoring (14%), (9) respondents responded agree, scoring (9%), (2) respondents responded undecided scoring (14%).Whereas for strongly disagree and disagree respondents scored (0) for each, reaching the percentage of (0%). So, since E- learning is motivating and self-directed, and all these are features of AI, thus AI accelerates and enhances the acquisition and learning of English language at tertiary level.

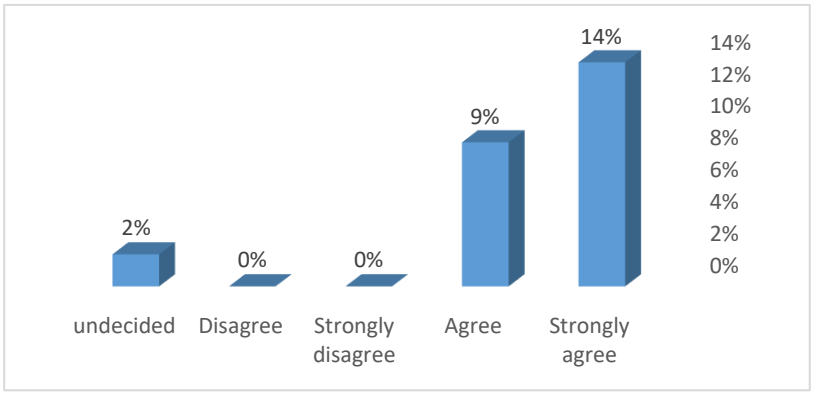

Fig (2).E-learning is more interactive, motivating, and self-directed for Ss.

From the figure (2) the study notes that: (14) respondents responded strongly agree scoring, (9) respondents responded agree, (2) respondent's responded undecided scoring. Whereas for strongly disagree and disagree respondents scored (0) for either, reaching the percentage of (0%). So, the vast majority of the respondents responded strongly agree and agree, thus E-learning which is self-directed and hence it is part of AI; so it is helpful in the perfection of acquiring and learning English language at tertiary level.

Table (6): AI increases student's engagement.

Statement	Percentage	Frequency
Strongly agree	15%	15
Agree	8%	8
Strongly disagree	0%	0
Disagree	0%	0
undecided	2%	2

From the table (6) the study notes that: (15%) respondents responded strongly, agree scoring (8%) respondents responded agree scoring, (2%) respondent's responded undecided scoring. Whereas for strongly disagree and disagree respondents scored (0) for each, reaching the percentage of (0%). Since most of the participants responded in the directions of strongly agree and agree, then AI increases students engagement and hence, it accelerates and enhances the acquisition and learning of English language at tertiary level.

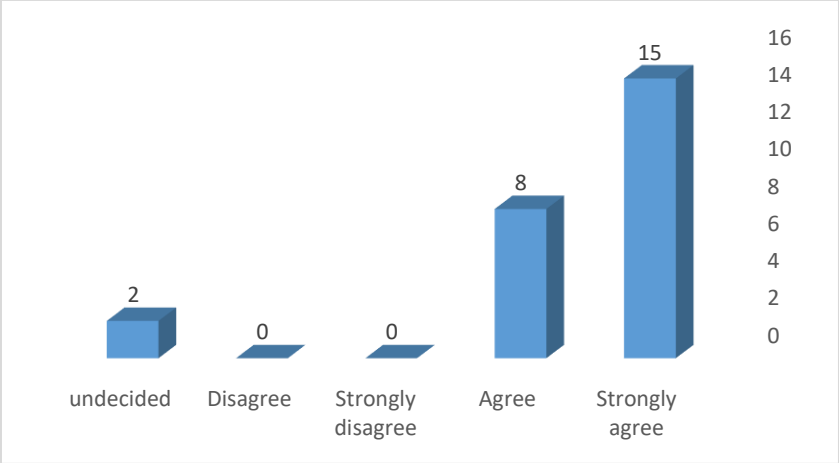

Fig (3).AI increases students engagement.

From the figure (3) the study notes that: (15) respondents responded strongly agree (8) respondents responded agree scoring, (2) respondents responded undecided scoring. Whereas for strongly disagree and disagree respondents scored zero for either, reaching the percentage of (0%). Since most of the participants responded in the directions of strongly agree and agree, then AI increases students engagement and hence increases the acquisition and learning of English language at tertiary level.

Table (7): AI helps improving speaking and pronunciation

Statement	Percentage	Frequency
Strongly agree	13%	13
Agree	7%	7
Strongly disagree	2%	2
Disagree	1%	1
undecided	1%	1

From the table (7) the study notes that (13) respondents responded strongly agree, (7) respondents responded agree, (1) respondents responded undecided. Whereas for strongly disagree (2%) and disagree respondents (1). The vast majority inclined to respond strongly agree and agree representing the highest percentage, thus AI helps improving speaking and pronunciation of English language and in its turn helps in acquiring the language at tertiary level.

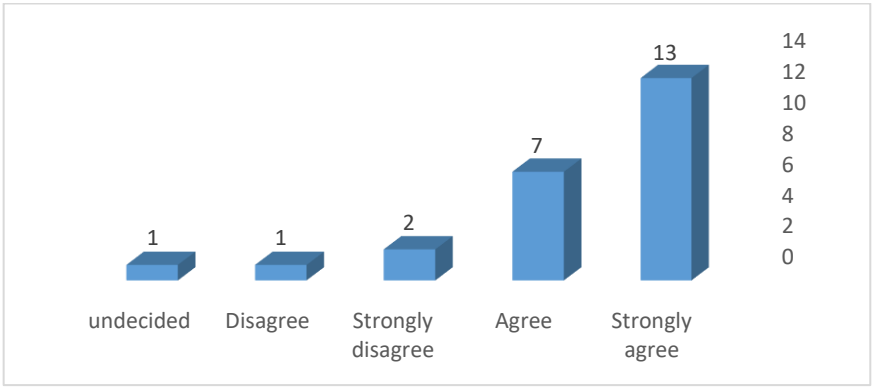

Fig (4).AI helps in improving speaking and pronunciation.

From the figure (4) the study notes that: (13) respondents responded strongly agree, (7) respondents responded agree, (2) respondents responded strongly disagree. Whereas for disagree and undecided respondents (1) for each. The vast majority of the respondents inclined to respond strongly agree and agree representing the highest percentage, thus AI helps in improving speaking and pronunciation and in its turn it helps in accelerating and enhancing the acquisition and learning of English language at tertiary level.

Table (8): AI provides students with authentic material.

Statement	Percentage	Frequency
Strongly agree	16%	16
Agree	9%	9
Strongly disagree	0%	0
Disagree	0%	0
undecided	0%	0

From the table (8) the study notes that (16) respondents responded strongly agree, (9) respondents responded agree, whereas for undecided, strongly disagree and disagree respondents scored (0) for either of each, reaching the percentage of (0%). So, all of the participants responded strongly agree and agree which shows that AI provides students with authentic material which is capable of accelerating and enhancing the learning and acquisition of English language at tertiary level.

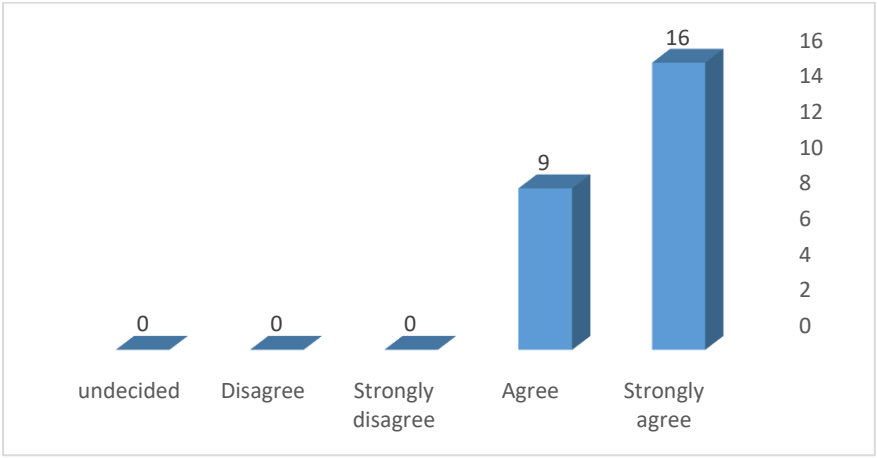

Fig (5).AI provides students with authentic material.

From the figure (5) the study notes that: (16) respondents responded strongly agree, (9) respondents responded agree, whereas for undecided, strongly disagree and disagree respondents scored (0) for either, reaching the percentage of (0%). So, all of the participants responded strongly agree and agree which shows that AI provides students with authentic material which is capable of accelerating and enhancing the learning and acquisition of English language at tertiary level.

Table (9). AI gives students a chance to learn on their own.

Statement	Percentage	Frequency
Strongly agree	18%	18
Agree	16%	16
Strongly disagree	1%	1
Disagree	0%	0
undecided	0%	0

From the table (9) the study notes that (18) respondents responded strongly agree, (16) respondents responded agree, (1) strongly disagree. Whereas for disagree and undecided respondents (0) for either of each. Most of the participants responded positively in the directions of strongly agree and agree, scoring in that the highest percentage; thus, AI gives students a chance to learn on their own and hence leads to the perfections, acceleration, and enhancement of acquisition and learning of English language at tertiary level.

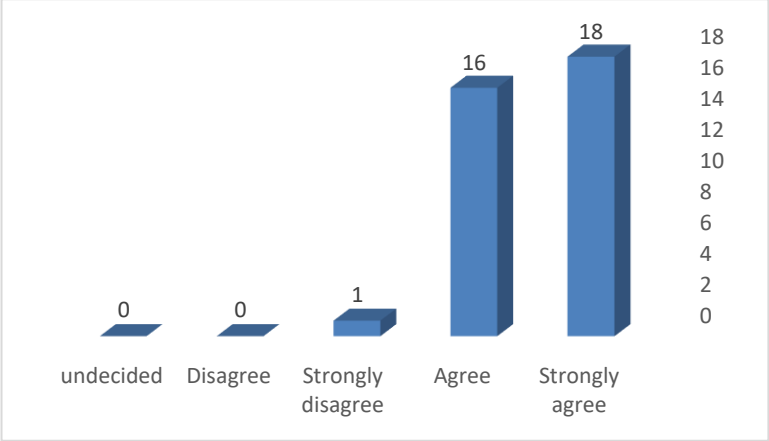

Fig (6). AI gives students a chance to learn on their own.

From the figure above the study notes that (18) respondents responded strongly agree, (16) respondents responded agree, (1) responded strongly disagree. Whereas for disagree and undecided respondents scored (0) for either. Most of the participants responded positively in the directions of strongly agree and agree; thus, AI gives students a chance to learn on their own and hence leads to the perfection, acceleration and enhancement of the acquisition and learning of English language at tertiary level.

In summary, from the tabulated data that is processed and analyzed, it appears that AI could accelerate and enhance the acquisition and learning of English language at tertiary level students. So, the hypothesis stated above is verified as true which is positively stated as the intended finding of the paper, and based on that the paper highly recommended the application of AI in the instruction of English classes at tertiary level and furthermore, suggested further future studies in the domain of AI in English language at tertiary level.

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