SALEE: Study of Applied Linguistics and English Education
Vol. 4, No. 2, July 2023

SALEE
Study of Applied Linguistics and English Education
P-ISSN: 2715-9795 E-ISSN: 2716-1617

Exploring English Language Education Major University Lecturers' and Students' Perceptions of AI-Based Applications in Post-Pandemic Learning

Yohana Nova Enzelina [1]

Made Hery Santosa [2]

A.A. Gede Yudha Paramartha [2]

[1] Corresponding author, English Education Department, Universitas Pendidikan Ganesha, Indonesia. yohana.nova@undiksha.ac.id

[2] English Education department, Universitas Pendidikan Ganesha, Indonesia

Received: 30 May 2023 *Accepted: 30 June 2023* *Published: 12 July 2023*

Abstract

This study investigated the lecturers' and students' perceptions and examined the affordances and challenges of AI-based applications in post-pandemic learning. The subject of this research is 6 lecturers and 211 sixth-semester students in English Language Education at Universitas Pendidikan Ganesha. The research method used was the Explanatory Sequential Mixed-Method. The questionnaire was used to investigate lecturers' and students' perceptions. Furthermore, the interview method was used as a follow-up to some questionnaire respondents. This research contributed to the following questions: (1) the perceptions of lecturers and students of AI-based applications in post-pandemic learning, and (2) the affordances and challenges of AI-based applications in post-pandemic learning. The findings showed that the students tend to have positive perceptions of AI-based applications. The students think that AI-based applications are innovative and helpful for improving learning English skills. However, lecturers tend to have negative perceptions in a few statements regarding AI-based applications in post-pandemic learning. The lecturers think that the implementation of AI-based applications must still take into consideration student motivation, pedagogical competence, and technological competency. Through this study, the lecturer will get information to design effective and efficient learning objectives using AI-based applications and the students could learn how to improve their English language learning skills.

Keywords: AI-based applications, ELT, perceptions, post-pandemic learning

To cite this article: Enzelina, Y.N., Santosa, M.H., & Paramartha, A.A.G.Y. (2023). Exploring English language education major university lecturers' and students' perceptions of AI-Based applications in post-pandemic learning. *SALEE: Study of Applied Linguistics and English Education*, *4*(2), 487-502. https://doi.org/10.35961/salee.v4i2.843

DOI: 10.35961/salee.v4i2.843

1. Introduction

The methods of teaching and learning have changed in Indonesia's educational system. This is a result of adjustments made to meet current demands. Planned and recreated educational system improvements that make greater use of technological advancements are created by educators, educational administrators, and educational institutions. Both educators and students require training and education to become used to the new educational system in consideration of the system's changes. Because of the covid-19, the learning system has changed to post-pandemic. Post-pandemic pedagogy refers to the adaptation of the educational system and student needs to the pandemic situation (Singh, J. et. al, 2021). Hybrid or blended learning is used for post-pandemic learning because this method is used in universities and schools to conduct scheduled and unscheduled class assignments in addition to face-to-face and virtual learning. To assist instructors and students in engaging in teaching and learning activities, hybrid learning requires technological media. This affected the learning in a positive way because the lecturers and students can find the most suitable media for learning English. According to Sutarto et al. (2020), students were fascinated by the concept of learning how to be adaptable and studying at home. Students came to the realization that they were dissatisfied with the learning process because it bored them, it is because felt overburdened by teachers' attempts to use apps to make learning much more enjoyable (Syauqi et al., 2020). Additionally, it led educators to determine the best platform and method for teaching and learning post-pandemic (Trusr & Whalen, 2020). As a result, these issues have provided an opportunity to increase English teachers' and students' knowledge of emerging technology to identify the most effective media for enhancing English learning.

One emerging technology that can be used to enhance language learning in post-pandemic circumstances is the AI-based application. AI-based application is one of the technologies that emerged from automation that can imitate human intelligence through language processing and can complete tasks using the information gained. Artificial Intelligence can be identified as a developed computer science branch known as the human-assistant machine (Sumakul et al., 2022). The educational environment is now necessary to familiarize students with AI-based applications in the classroom because AI-based applications has grown to be a major policy agenda, particularly in English Language Teaching (ELT) (Tuomi, 2018).

Replika, Cookie, Grammarly, Quillbot, Google Translate, ChatGPT, and other AI tools have been invented in ELT. Grammarly is one of the artificial intelligence tools with a writing enhancement domain that is supported by an interconnected system that combines rules, development, and artificial intelligence techniques such as machine learning, deep learning, and natural language processing (Fitria, 2021a). Then there is Quillbot, a popular free paraphrasing tool. QuillBot provides artificial intelligence-powered paraphrasing products (Dale, 2020). Google Translation is also an AI tool in the field of machine translation. Users can perform translations by specifying the source and destination languages. Then, write the text in the original language, and Google Translate will translate it into the destination language automatically. The last one is ChatGPT (Generative, Pre-trained, and Transformer) is one of the most advanced AI-powered chatbots. This technology enhances simple automatic tasks carried out by digital assistants like Siri and Alexa by automating the recognition of speech and processing of natural languages (Kohnke, et al. 2023). ChatGPT is made to have conversations back and forth with users. ChatGPT encourages learning a language by simulating real-life interactions. It can determine a word's meaning in relation to its context, explain grammatical errors, create texts of different genres (such as emails, stories, and recipes), create quizzes, annotate texts, and provide dictionary definitions, example sentences, and translations. These AI applications combine deep learning with a variety of natural language analysis approaches. Various application challenges and limitations have been discovered even though many new technologies have emerged that appear to be promising. Several AI studies have been done to determine teachers' and students' perceptions of the use of AI-based applications in the classroom. Sumakul et al (2022) found that all teachers and students mentioned the benefits of AI in the classroom, indicating a positive perception of AI-based applications. However, university students in the 2018-2019 academic year perceived a negative of the idea of AI-based applications (Keleş & Aydın, 2021a). The effectiveness of AI-based applications in the field of education is thought to be influenced by generational differences as well as these different perceptions. It might be different because everyone will perceive things differently, especially in a different environment.

Few researchers conducted this study because the research on AI-based applications in the context of learning is still new and promising, specifically regarding the perception of the use of AI-based applications. As a result, the researcher is motivated to conduct a study to investigate lecturers' and students' perceptions of AI-based applications in English post-pandemic learning. The study is conducted at English Language Education UNDIKSHA Singaraja because there are very limited studies that investigate university lecturers' and students' perceptions of AI-based applications in post-pandemic learning in Indonesia specifically in Bali. The researcher observed the faculty of English Language Education at UNDIKSHA to identify the problem, which made it difficult for many students to learn English after the pandemic, especially when trying to access media like AI-based

applications. Many students have only used AI-based applications with limited options, like voice assistants or recommendation systems. Even though English lecturers already recognize AI-based applications as promising possibilities to assist students in learning the language, the lecturers have yet to identify the best AI-based applications to use in order to enhance the English learning environment. Therefore, the research question in this study is to find out lecturers' and students' perceptions and affordances and challenges of AI-based applications in post-pandemic learning.

1.1. Theoretical Framework

1.1.1. Constructivism Theory

The use of learning objectives that are focused on the needs of the students is important for the success of learning. According to Huitt and Hummel (2003), Piaget developed his cognitive constructivism theory based on an interest in how children think and how they acquire and grow knowledge. The use of technology is one of the essential components of cognitive constructivism's success. This theory will be the basis of this research because constructivism offers ideas and principles about learning that have significant implications for the design of technology-supported learning environments (Tam, 2000). Higher-order thinking abilities like problem definition, information assessment, problem-solving, and appropriate conclusion drawing were successfully developed by computers. It is essential that computer-supported constructivist environments do not use knowledge and intelligence to direct and structure learning processes, but instead should create contexts and provide resources that encourage students to use their own cognitive potential to the difficulty of students (Lancy, 1990). To assist teachers in teaching more effectively, educational Artificial Intelligence focuses on improving student engagement through computers and teaching platforms (Sun, 2021). Teachers can greatly benefit from AI in terms of raising their teaching standards. The use of artificial intelligence can assist teachers in modifying their lesson plans, expanding their knowledge, and determining the level of student acceptance.

1.1.2. English Language Teaching and Communicative Language Teaching

Indonesia's educational curriculum specifically in English language teaching has been through many changes to raise the standard of education. English Language Teaching (ELT) has also continued and developed to grow because of the internet. English Language Teaching (ELT) is a sophisticated technique for achieving the needed proficiency in foreign institutions (Al-Mahrooqi, R. & Troudi, 2014). Therefore, it is necessary to know the suitable technique for English learning. The process and objectives of classroom learning are defined by Communicative Language Teaching (CLT) (Savignon, 2004). Communicative Language Teaching (CLT) can be described as a collection of ideas about the goals of language teaching, the best classroom activities for learning, and the roles of teachers and students in the classroom (Armnazi & Alakrash, 2021). It is necessary to employ technology to give the

frame structure for their discussion. Additionally, it helps students develop their learning competencies. This theory is important to be the base of this study in order to know the best English language teaching learning in the classroom.

1.1.3. Mobile Assisted Language Learning (MALL)

Mobile Assisted Language Learning (MALL) is a methodology for teaching languages that can be used to provide speaking, reading, listening, and writing activities for teaching and learning. It can also assist in research, critical thinking, and academic studies (Gholami & Azarmi, 2012). It also stated, MALL is directly related to the application of mobile technology, which is not only used in language learning but can also be used outside of the classroom because it can be used anywhere and at any time. It is a type of professional learning in English teaching and learning in which it becomes one of the strong criteria in providing a comfortable environment and its use is given by many communities. It is also realized to improve student achievement and provide a difference in teaching and learning (Miangah, 2012). MALL can be identified as one of the basis theories in this study because it can provide a methodology that used technology applications in learning English.

1.1.4. Artificial Intelligence-based Applications in Education

AI in education (AIEd) is a powerful tool for supporting formal education and the learning process by creating an adaptive learning environment using various efficient and effective artificial intelligence in education tools (Luckin et al., 2016). AIEd is a technological advancement that can perform cognitive tasks, typically related to learning and problem-solving, to aid in the learning and teaching of English (Baker et al., 2019). Artificial Intelligence applications can improve the effectiveness of English learning (Hou, 2021). It is stated, students can easily use artificial intelligence tools as a system for understanding and processing natural language. They can use the system to engage in interactive listening training and follow-up activities. Intelligent machine translation technology, an essential part of artificial intelligence, has made significant advancements in the translation output of English learning. English language learners should set aside their concerns because of the advancements in machine translation to take advantage of the tools' speed, richness, and comparability to boost the impact of translation tasks. For instance, AI integrated into robots as well as supporting technology enable the development of robots that enhance student learning beginning with the most fundamental form of education, early childhood education.

1.1.5. Perception Theory

Perception is defined as one's point of view on something, how one observes things with one's senses (vision, hearing, etc.), and how quickly one understands or notices something (Robbin & Judge, 2013). Based on the following, perception can be defined as the process by which lecturers and students decipher or respond to information received through their five senses. There are several reasons for differences in individual perceptions of information

views, particularly those based on AI. Differences in a person's views are caused by differences in learning motivation, self-confidence or willpower, behavior or characteristics, or the selection of learning materials in learning, which can cause the lecturer or student's perception to run on a positive or negative perception. According to Baron & Byrne (1994), three aspects can construct a perception. Those three aspects are the cognitive component, affective component, and conative component.

2. Method

The research method used was the Explanatory Sequential Mixed-Method. The subject of the study were 6 lecturers and 211 sixth-semester students in English Language Education at Universitas Pendidikan Ganesha, in the academic year of 2022/2023. The number of the participant used by using the purposive sampling technique. The data was gathered in two ways. The questionnaire distributed in the study is a Google Form sheet containing 10 items by adopting Aljohani's (2021) work, which is filled with only closed questions to limit each answer and make it easier to classify each answer. This type of questionnaire was closed-ended, and the questionnaire given adopted the Likert scale as the measurement, which had an order from Strongly Agree to Strongly Disagree. After the quantitative data analysis results are obtained and varied data results are discovered, the interview was conducted by interviewing teachers or lecturers and some selected students from the sample, so that they can share affordances and challenges in using AI-based applications in post-pandemic learning. The criteria for participants who fill out the perception of AI-based applications questionnaire are as follows.

1. The sample must be the lecturers and the 6th-semester students of the English Language Education major at Universitas Pendidikan Ganesha.
2. The lecturers and students have experience in using AI-based applications in post-pandemic learning (a total of 6 EFL lecturers and 211 from the sixth semester of EFL students who have experience using AI-based applications in post-pandemic learning).

In addition, 1 lecturer and 6 students were recruited for this study with 3 students with positive perceptions and 3 students with negative perceptions as the representative in the interview session. The following criteria are used to collect qualitative data for interviews using the purposive sampling technique (1) participated in the perception of AI-based applications in post-pandemic learning surveys that are being conducted; (2) involved in the post-pandemic learning era; and (3) willing to voluntarily conduct interviews.

3. Findings

This research was carried out by distributed to some lecturers and 6th semester of English Language Education at Universitas Pendidikan Ganesha which contains 10 questions that

were answered by lecturers and students. To determine each lecturer and students' perception level, the questionnaire point was summed up and calculated using the frequency diagram from Microsoft Excel. Furthermore, after calculating and checking the value of the perception based on the criteria score, the frequency data can be seen in Figure 1 & 2

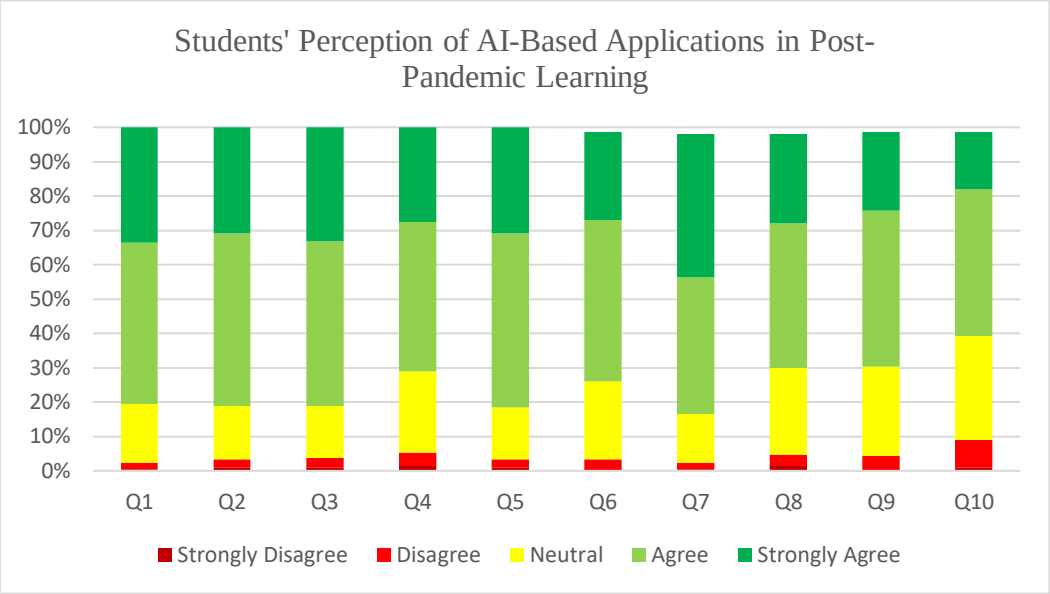

Figure 1. The Percentage Students' Perception of AI-Based Applications in Post-Pandemic Learning Frequency

Regarding the frequency data of students' perceptions of AI-based applications, it was found that the frequency median from the data tends to agree with AI-based applications in post-pandemic learning. It is because the median percentage in each questionnaire statement is green which can be concluded that students have positive perceptions of AI-based applications. It can be seen that the median agree point in Figure 1 is 45%. The percentage of lecturers' perceptions can be seen in Figure 2

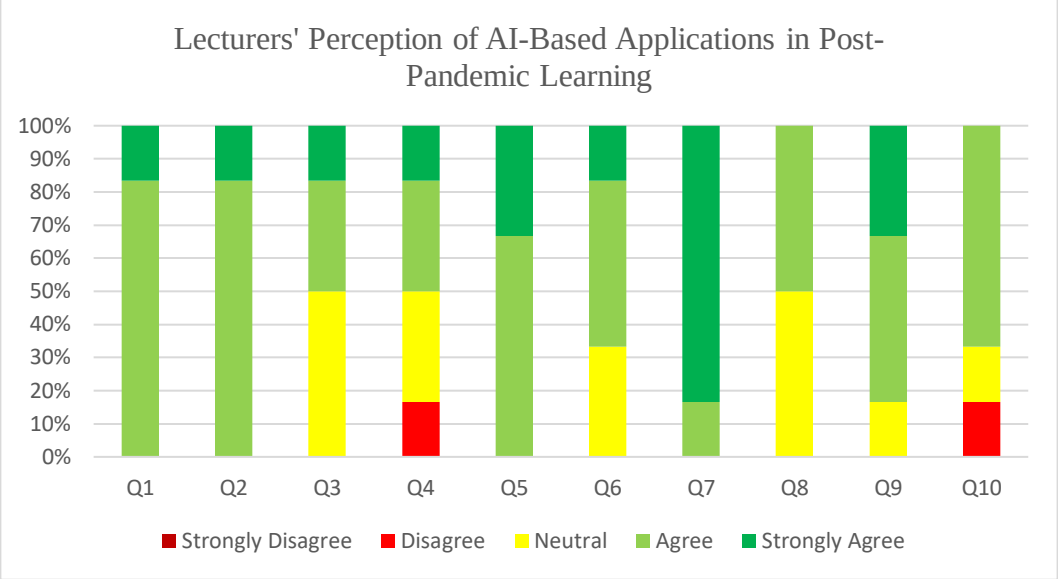

Figure 2. The Percentage Lecturers' Perception of AI-Based Applications in Post-Pandemic Learning Frequency

Meanwhile, the frequency data of lecturers' perceptions of AI-based applications tend to positive but questions number 3, 4, and 8 tend to be negative. The median in question 3 is 50% neutral and 33% agree. In question 4 is 33% neutral and 33% agree, and question 8 is 50% neutral and 50% agree. According to Figures 1 and 2, lecturers and students have different perceptions of statements number 3, 4, and 8. Therefore, it was found that there were unique differences in lecturers' and students' perceptions of AI-based applications in post-pandemic learning. The uniqueness of these differences in perception will be discussed further in the discussion.

3.1 Students' Affordances and Challenges of AI-Based Applications in Post-Pandemic Learning

Even though the students had positive perceptions of AI-based applications in post-pandemic learning, there are still several challenges faced by the students of AI-based applications. In the post-pandemic era, students' perceptions of AI-based applications are described using data from interviews. There are 6 students from the sixth English semester from The Language Education Department at UNDIKSHA with three of the students who expressed a positive perception and three of the students who expressed a negative perception. Using the Zoom app, interviews were conducted by recording conversations with the help of an interview guide.

Regarding Figure 1, it can be seen the students tend to agree with the statements. There are statements that support the positive perception of AI-based applications and

disagreements with those who did not agree with the statements. Some statements that support the affordances and positive perception of AI-based applications are, first AI-based applications are innovative and helpful. Second, AI-based applications can help distance learning to be effective and improve English skills. Third, AI-based applications are beneficial for learning English and improve the learning atmosphere.

Some challenges and disagreements with those who did not agree with the statements are first, AI-based applications still do not have proper instruction and reduce the ability to communicate with lecturers. Second, AI-based applications are less effective in English learning. Third, AI-based applications are not effective in improving personality in learning. Last, the use of AI-based applications requires correct and precise instructions from lecturers.

3.2 Lecturer's Affordances and Challenges of AI-Based Applications in Post-Pandemic Learning

According to Figure 2, the lecturers have various perceptions of the statement AI-based applications in post-pandemic learning. There is one lecturer who suits the criteria from The Language Education Department at UNDIKSHA who expressed a positive perception. Using the Zoom app, interviews were conducted by recording conversations with the help of an interview guide. It can be seen from Figure 2 that the questions from numbers 3, 4, and 8 have more neutral answers which can mean the lecturers have negative perceptions about those questions.

Some affordances that support the positive perception of AI-based applications are, first AI-based applications are helpful in learning English. Second, language learning in the classroom becomes faster and more varied. Last, AI-based applications improve students' English language skills.

Meanwhile, there are also some challenges of AI-based applications in post-pandemic learning. First, learning using AI-based applications must be appropriate. Second, AI-based applications cannot fully assist in completing learning content. Last, AI-based applications influence the communication process between lecturers and students.

4. Discussions

The research had the purpose to investigate lecturers' and students' perceptions of AI-based applications in English post-pandemic learning and to examine the affordances and challenges of AI-based applications for lecturers and students in English post-pandemic learning in The Language Education Department at UNDIKSHA. This sub-chapter discusses the lecturer and students' perceptions, affordances, and challenges of AI-based applications in post-pandemic learning after presenting all the data collected through data collection.

The findings of the lecturers' and students' perceptions in The Language Education Department at UNDIKSHA based on the questionnaire result show that the diagram of the

frequency lecturers and students' perceptions of AI-based applications in post-pandemic learning revealed that students tend to have positive perceptions meanwhile lecturers tend to have negative perceptions in questions number 3, 4, and 8 of AI-based applications in post-pandemic learning. The result is consistent with the previous research that educated university students have positive perceptions about the effectiveness of AI in education (Keleş & Aydın, 2021). It can be predicted that students feel helped by AI-based applications in learning English because the use of AI-based applications can facilitate students in learning vocabulary, the writing process, grammar, and theoretical concepts in writing (Sumakul et al., 2022). It means that most students thought that AI-based applications are helpful and beneficial in learning. It is supported by the observation result which revealed that AI-based applications are innovative and helpful for improving learning English skills. It also stated that the students find AI-based applications helpful when it is difficult to understand the meaning in English and help them in improving their English skills. The results are similar to the previous study about the use of Grammarly which is one of the applications of AI in education to improve students' performances in English skills and the use of chatbots as AI implementations, particularly in the form of student services for learning support (Fitria, 2021). Lancy (1990) stated that the use of learning in technology can provide resources that encourage students to use their cognitive potential to the difficulty of students. Regarding the interview, AI-based applications can help distance learning be effective and improve the learning atmosphere. Vygotsky (1978) also stated that students who are better able to maintain interpersonal relationships with classmates are more likely to succeed than those who are not in terms of academic performance. AI-based applications can improve students' motivation because of the learning atmosphere. The results are consistent with the previous study that has shown artificial intelligence-based education can help to enhance education in situations of emergencies, such as recent pandemics and natural disasters (Şeren & Özcan, 2021).

Moreover, lecturers' perceptions also tend to be positive but questions number 3, 4, and 8 have negative perceptions of AI-based applications in post-pandemic learning. It can be seen from the diagram, statements number 3, 4, and 8 tend to be neutral and question number 7 tends to strongly agree. Statement number 3 is that AI-based applications contribute to language development faster which revealed the results are 50% agree and 50% neutral. It is supported by the interview session that revealed AI-based applications can accelerate the development of English learning because each application has features and components that can help users help and learn English. Meanwhile, the neutral result is in line with the previous study from Sumakul et al (2022) which states that the perceptions of teachers said AI plays a role in English classes, but the implementation of AI must still take into consideration of student motivation, pedagogical competence, and technological competency. This is also in line with cognitive and social constructivism because constructivism approaches can be adapted to facilitate learning by providing students with

options and engaging and meaningful language practices (Schcolnik & Abarbanel, 2006). Therefore, the development of English learning can be supported using AI but using the right method or training will make English learning more optimal and faster. The statement contrasts with students' perceptions stating that they have positive perceptions that AI-based applications contribute to language development faster. It is supported by the interview session that said AI-based applications can help them to solve their problems faster like correcting the grammar and searching new vocabularies. Fitria (2021b) said that AI reduces working time so that activities can be more efficient, and the students become faster in making decisions and carrying out activities. Therefore, students have a different perception from lecturers because students like a more instant and faster way while lecturers want optimal learning using the right method for students rather than just using AI as an instant way to learn English.

Statement number 4 is that AI-based applications cater to the needs of all age groups and faster the ability of the language in English language learning which revealed the results are 33% neutral and 17% disagree. It can be said that some lecturers have negative perceptions of the statement. The lecturers who were perceived as positive and negative are supported by the interview session that revealed the use of AI-based applications features can support the need of all age groups but introducing the use of AI-based applications must be careful because the needs and wisdom of each age are different. It is supported by cognitive and social constructivism which stated that the use of technology like artificial intelligence can assist teachers in modifying their lesson plans and determining the level of student acceptance (Sun, 2021). It can be interpreted that, lecturers who say neutral and disagree and have negative perceptions about this statement argue that the use of AI-based applications in learning cannot be applied to all age levels. In implementing the use of AI-based applications, it must be accompanied by guidance that is in accordance with the ability of students to understand a problem. The study from Buckingham (2007) said that one of the ways that use media technology in English Language teaching is by applying and addressing the creative potential and the pedagogical challenges of digital technology. It is in line with the one of lecturer's statements in the interview that stated the needs of each age level are different therefore the implementation of the pedagogical is also different. It contrasts with students' perception of this statement which is perceived as positive. The students argue that they agree that AI-based applications cater to the needs of all age groups and faster the ability of the language in the English language. It is because AI-based applications can be adjusted to the use of images, songs, or animations for low age levels meanwhile for the higher level, it is possible to focus on more intensive grammar that is supported by the interview session. These features in AI-based applications can make them better understand and be comfortable with learning English. It is in line with the previous study from Ocaña-Fernández et al (2019) that the challenges of university education are being used at all levels and shows promise for improvement in learning English. The result also is in line with the previous research by

Krashen & Terrell (1983) which also found that the use of technology in learning can provide comfort and reduce anxiety in the classroom. It can be concluded that the perception of the lecturers is that AI-based applications must be implemented with suitable pedagogical and guidance for each age level meanwhile the students can use the features that suit their ability. Therefore, the perception of this can be different based on their experience in using AI-based applications in learning.

The last statement that can be said to be unique because of the difference in perception between lecturers and students is statement number 8. It is stated that learning through using AI-based applications will make learning language less terrifying than learning it using the traditional way, which the result is the lecturers tend to be perceived as negative meanwhile the students tend to be perceived as positive. This is supported by an interview from the lecturer that stated, it is more frightening if students only learn from AI-based applications because it tends to obey what is told by the users. So, it will be dangerous for students if they don't use it wisely, students will rely heavily on AI-based applications without learning English properly. It is in line with the previous study by Khare et al (2018) that stated the educational institutions that have adopted AI still consider the limitations and benefits of AI that relate to ethical, cultural, economic, political, social, and technological factors. The ethical is one of the reasons related to the statement of the lecturer who stated that the use of AI will be scary for students because it will make students dependent on AI. It is also supported by the theory of Savignon (2004) Communicative Language Teaching (CLT) that stated the best classroom activities for learning and the roles of lecturers and students in the classroom can help students develop their learning competencies. The study from Jeon (2021) stated that teachers should more actively play the role of a mediator during conversational exercises by correcting students' requests and clarifying challenging responses provided by conversational AI. Therefore, learning in the classroom will not be scary if the activities of the lesson plan and how lecturers teach in the classroom are carried out communicatively and effectively.

It can be different from students' perceptions of this statement that states learning using the traditional way makes many psychological factors that make students uncomfortable and afraid to study while using AI-based applications in learning becomes more comfortable so that students can get what they need quickly and easily. It is in line with the previous study from Sumakul et al (2022) that stated the use of Artificial Intelligence (AI) in the classroom particularly gives benefits to students. It assisted the students in identifying and correcting writing errors easily. Thus, these benefits give the students comfort in learning English rather than learning using the traditional way. It is also in line with the study from Ji et al (2023) that stated conversational AI has the potential to lessen language learning performance and achievement foreign language anxiety. Thus, anxiety of students can decrease due to using AI in learning. It is also supported by Zhang & Zou (2020), AI offers more flexible ways for

language learners to engage with it. In an environment that is less intimidating than traditional classrooms, they can also get scaffolding and feedback. Therefore, different perceptions of this statement can occur because of the supported statements from the lecturer and students and the previous studies.

5. Conclusion

Based on the finding above, it can be concluded that the lecturers' and students' perceptions of AI-based applications were perceived as positive although in statements number 3, 4, and 8 some lecturers were perceived as negative. It is in line with some previous research that reported similar results that educated university students have positive perceptions about the effectiveness of AI in education meanwhile AI plays a role in English classes, but the implementation of AI must still take into consideration of the student motivation, pedagogical competence, and technological competency. Thus, the lecturers perceive as positive of AI-based applications but in some statements, the lecturers think that the suitable method and pedagogical for students must be implemented because it will not make the students rely on AI-based applications. The students perceive as positive of AI-based applications because they can learn and improve their English skills faster and give them comfort in learning. This study could provide lecturers with information to help them create more effective and suitable ways of using technology like AI-based applications in English learning. Since teaching and learning activities have been greatly enhanced using technology such as AI-based applications, lecturers will have the opportunity to require information such as students' strengths and weaknesses to improve students' skills and knowledge about the English language. Even though students participate in most learning activities, the lecturer still plays a key role as a facilitator by monitoring the students' progress and ensuring that the learning runs effectively. The lecturers will also get information to design effective and efficient learning objectives using AI-based applications by considering cognitive constructivism practice. The government of education can also develop rules through this study about the use and implementation of AI-based applications in learning, particularly in English learning. This is due to the usage limitations placed on each student.

Therefore, through this study, the students could learn how to improve their English language learning skills. According to the interview results, students believe that using AI-based applications in learning can improve their English skills, make learning more comfortable, and provide many useful learning resources. Even though the teacher only served as a facilitator during the learning, students should avoid relying solely on AI-based applications. As a result, they require the role of lecturer to direct their learning and be aware of the consequences of their actions. The students could also learn easily from this study because they can learn at their own pace, review the material, and highlight concepts they find challenging to understand.

According to the results found during the study, there are several suggestions that can be given to the students. First, the students need to be more responsible and wiser in using AI-based applications in learning English. Second, the students should consider AI-based applications as learning support tools that can help improve English language skills and to recognize their strengths and weaknesses. Meanwhile, the suggestions for the lecturers are first the lecturers must plan the whole activities in learning using AI-based applications for the students properly, particularly by creating the rules and guidelines for a discussion and organizing the activities to be carried out. Last, the lecturers should provide kinds of methods to improve the atmosphere and communication of learning comfortably.

References

Aljohani, R. A. (2021). Teachers and Students' Perceptions on the Impact of Artificial Intelligence on English Language Learning in Saudi Arabia. *Journal of Applied Linguistics and Language Research*, *8*(1), 36-47.

Armnazi, M., & Alakrash, H. (2021). Factors Affecting the Application of Communicative Language Teaching CLT in Syrian Schools. *TESOL and Technology Studies*, *2*(1), 1–14. https://doi.org/10.48185/tts.v2i1.143

Baker, T., Smith, L., & Anissa, N. (2019). Educ-AI-Tion Rebooted? Exploring the Future of Artificial Intelligence in Schools and Colleges.

Buckingham, D. (2007). Media Education Goes Digital: An Introduction. In Learning, Media, and Technology, 32(2), 111–119. https://doi.org/10.1080/17439880701343006

Dale, R. (2020). Natural language generation: The Commercial State of the Art in 2020. *Natural Language Engineering*, *26*(4), 481-487.

Fitria, T. N. (2021a). Grammarly as AI-powered English Writing Assistant: Students' Alternative for Writing English. *Metathesis: Journal of English Language, Literature, and Teaching*, *5*(1), 65. https://doi.org/10.31002/metathesis.v5i1.3519

Fitria, T. N. (2021b). QuillBot as an Online Tool: Students' Alternative in Paraphrasing and Rewriting of English Writing. *Englisia: Journal of Language, Education, and Humanities*, *9*(1), 183. https://doi.org/10.22373/ej.v9i1.10233

Gholami, J., & Azarmi, G. (2012). An Introduction to Mobile Assisted Language Learning. *International Journal of Management, IT and Engineering*, *2*(8), 1–9.

Hirtle, J. St. P. (1996). Coming to Terms: Social Constructivism. *The English Journal*. https://doi.org/10.2307/821136

Hou, Z. (2021). Research on Adopting Artificial Intelligence Technology to Improve Effectiveness of Vocational College English Learning. *Journal of Physics: Conference*

Series, *1744*(4). https://doi.org/10.1088/1742-6596/1744/4/042122

Huitt, W., & Hummel, J. (2003). Piaget's Theory of Cognitive Development. *Educational psychology interactive*, *3*(2), 1-5.

Ji, H., Han, I., & Ko, Y. (2023). A Systematic Review of Conversational AI in Language Education: Focusing on the Collaboration with Human Teachers. *Journal of Research on Technology in Education*, *55*(1), 48-63.

Keleş, P. U., & Aydın, S. (2021). University Students' Perceptions About Artificial Intelligence. *Shanlax International Journal of Education*, *9*, 212–220. https://doi.org/10.34293/education.v9is1-may.4014

Kirschner, F., Paas, F., & Kirschner, P. A. (2009). Individual and Group-Based Learning from Complex Cognitive Tasks: Effects on Retention and Transfer Efficiency. *Computers in Human Behavior*, *29*(2), 306–314.

Krashen, S., & Terrell, T. (1983). The natural approach. *Stanford Education*.

Kohnke, L., Moorhouse, L. B., & Zou, D. (2023). ChatGPT for Language Teaching and Learning. *RELC Journal*, 1-14 https://doi.org/10.1177/00336882231162868

Lancy, D. F. (1990). Microcomputers and social studies. *OCSS Review*.

Luckin, R., Holmes, W., Griffiths, M., & Forcier, L. B. (2016). Intelligence unleashed: an argument for AI in education.

Ocaña-Fernández, Y., Valenzuela-Fernández, L. A., & Garro-Aburto, L. L. (2019). Artificial Intelligence and Its Implications in Higher Education. *Journal of Educational Psychology - Propositos y Representaciones*.

Ratheeswari, K. (2018). Information Communication Technology in Education. *Journal of Applied and Advanced Research*, *3*, 45–47. https://doi.org/10.21839/jaar.2018.v3is1.169

Savignon, J. S. (2004). Interpreting Communicative Language Teaching: Contexts and Concerns in Teacher Education. *Studies in Second Language Acquisition*. https://doi.org/10.1017/s0272263104251051

Schcolnik, M., & Abarbanel, J. (2006). Constructivism in theory and practice: *English Teaching Forum*.

Singh, J., Steele, K., & Singh, L. (2021). Combining the Best of Online and Face-to-Face Learning Hybrid and Blended Learning Approach for COVID-19, Post Vaccine, & Post-Pandemic World. *Journal of Education.*

Sutarto, S., Sari, D. P., & Fathurrochman, I. (2020). Teacher strategies in online learning to increase students' interest in learning during COVID-19 pandemic. Jurnal Konseling Dan Pendidikan, 8(3), 129. https://doi.org/10.29210/147800

Sumakul, D. T. Y. G., Hamied, F. A., & Sukyadi, D. (2022). Students' Perceptions of the Use of AI in a Writing Class. *Advances in Social Science, Education and Humanities Research*, 624 https://doi.org/10.2991/assehr.k.220201.009

Sun, X. (2021). 5G Joint Artificial Intelligence Technology in the Innovation and Reform

of University English Education. *Wireless Communications and Mobile Computing*. https://doi.org/10.1155/2021/4892064

Syauqi, K., Munadi, S., & Triyono, M. B. (2020). Students' perceptions toward vocational education on online learning during the COVID-19 pandemic. International Journal of Evaluation and Research in Education, 9(4), 881– 886. https://doi.org/10.11591/ijere.v9i4.20766

Tam, M. (2000). Constructivism, Instructional Design and Technology: Implications for Transforming Distance Learning. *Educational Technology & Society*, *3*(2).

Tuomi, I. (2018). The Impact of Artificial Intelligence on Learning, Teaching, and Education Policies. *Science for Policy*. https://doi.org/10.2760/12297

Trust, T., & Whalen, J. (2020). Should Teachers be Trained in Emergency Remote Teaching? Lessons Learned from the COVID-19 Pandemic. In Jl. of Technology and Teacher Education (Vol. 28, Issue 2).

Vygotsky, L. S. (1978). Mind and society: the development of higher psychological processes. *Harvard University Press*.

Zhang, R., & Zou, D. (2020). Types, Purposes, and Effectiveness of State-of-the-Art Technologies for Second and Foreign Language Learning. *Computer Assisted Language Learning,* 35(4), 696–742.