# Using Google Bard as an Al-Powered Chatbot Tool for Writing English Essays

Tira Nur Fitria Institut Teknologi Bisnis AAS Indonesia tiranurfitria@gmail.com

Abstract - This research describes the use of Google Bard as an Al-Powered Chatbot Tool for writing English essays. This research is descriptive qualitative. The analysis shows that Bard is an Al-powered chatbot tool designed by Google to simulate human conversations using natural language processing and machine learning. Besides supplementing Google search, Bard can be integrated into websites, messaging platforms, or applications to provide realistic, natural language responses to user questions. Users can collaborate with Bard to brainstorm ideas, spark creativity, and accelerate writing productivity. Several ways to use Google Bard are: Visit the official website https://Bard.google.com or https://Bard.google.com/chat and make sure that we have logged in to our Google account. A chat room of Bard will open. Type and send prompts (commands/questions). Bard will read the prompts and present the responses. Bard has alternative answer drafts based on the criteria we want. Click on one of the three drafts that fit our criteria. The researcher does several trials using Bards. The view shows "Hi, I'm Bard. Tell me what's on your mind, or pick a suggestion. I have limitations and won't always get it right, but your feedback will help me improve". The researcher asks "Hallo, good afternoon. Can you help me to do my English assignment?", then Bard answer "Bard answers "Yes, I can help you to do your English assignment", then adds several tips for writing an essay and mentions specific types of assignments i.e essays, research papers, and creative writing assignments. The researcher asks Bard specifically "Can you write English an essay which consists of 1 paragraph about "The Importance of AI in English Language Teaching (ELT)?". Bard answers "Sure, here is a 1-paragraph essay about the importance of AI in ELT. Bard explains the benefits of AI in ELT and also explains AI-powered apps and games in ELT. As stated by Bard "Bard is an experiment". As we try, Bard may give inaccurate or offensive responses or information. It is certainly possible to carry out further research to find out about the quality results of English essays written by Bard which include grammar, spelling, punctuation, or other aspects.

Keywords: Al-Powered Chatbot Tool, Chatbot, English essays, Google Bard, writing

#### I. INTRODUCTION

The opinions on which education influences technology or how education influences new technologies remain debatable [1]. In the present context, "technology" refers to any instrument that has been intentionally created for a specific purpose. The pursuit of specific aims through the use of specific methods characterizes Artificial Intelligence (AI) research. Reasoning, knowledge representation, planning, learning, processing natural language, vision, and the capacity to move and control things are all a part of the study that goes into artificial intelligence. Researchers in AI have adapted and incorporated a broad variety of problem-solving approaches to overcome these difficulties [2]. These techniques vary from assisting physicians, scientists, and researchers early to allowing individuals to access information in their language. In addition to this, new opportunities arise that have the potential to significantly enhance the quality of life for billions of people.

An additional technological advancement that garnered considerable interest in the late 20th century was Artificial Intelligence (AI). AI, a state-of-the-art technology, has surfaced and is gaining momentum in public discourse owing to its capacity to assist humans in resolving routine challenges. This AI is renowned for its technology and programs that can be nearly equal to humans [3]. This technology inspires inquisitiveness. There have always been discussions that have the potential to spiral out of control and infiltrate human society. AI is one of the most profound and recent topics of study and inquiry in the modern world. The investigation of AI is guided by specific objectives and employs particular tools (Singh et al., 2023). An emerging technological advancement is generative AI, which possesses the capability to generate innovative responses to inquiries posed by humans. The technology generates, among other things, text responses, images, videos, and code by utilizing large language models [5].

Comparable to the early years of the internet in the 1980s, the emergence of AI and chatbots began modestly but progressively integrated into our daily lives [6]. There is a growing public consciousness regarding AI, and this innovative technology is being implemented in various routine activities [7]. AI is evolving in the education system [8]. The use of Google's artificial intelligence tool, known as 'Google Bard', holds potential inside the realm of education [9]. The integration of AI into the education sector has facilitated the processing of teaching and learning [10], [11]. The implementation of AI has brought about a paradigm shift in the domain of education through the fundamental modifications of teaching and learning methodologies [12]. AI can aid educators in personalized learning and educational support. It can identify specific areas in which students may be encountering difficulties and offer tailored recommendations to aid in their development [6]. AI tools are employed to support the development of adaptive learning systems, which modify the level of difficulty of assignments and assessments following the unique needs and capabilities of each student. This not only facilitates a customized learning experience but also enables educators to accurately evaluate the progress of individual students.

The fast development of conversational AI has led to the creation of sophisticated language models that capable of creating messages that are are indistinguishable from those produced by humans [13]. According to Ilgaz & Celik (2023), in Artificial Intelligence (AI) and Natural Language Processing (NLP), the creation of Large Language Models (LLMs) represents a significant development already utilized in numerous applications, including chatbots, machine translation, and question-and-answer systems, LLMs possess the extraordinary capability of processing and comprehending natural language data. Generative AI and chatbots have contributed to developments in the domains of AI and NLP [15].

According to Piercey (2023), chatbots with generative capabilities are transforming how teachers teach and engage with students. With the ability to comprehend and provide answers to inquiries posed in natural language, these conversational tools powered by Al offer immediate assistance to teachers as well as students. Acquiring proficient Al skills will enable teachers to facilitate a more captivating and productive educational environment for their pupils. A substantial disparity exists between the prompts. Discuss video games concerning the prompt.

Chatbots rely on large language models (LLMs), which are the next generation of internet search products [17]. A chatbot is a software application that is specifically engineered to replicate human discourse through online interactions involving text or voice [18]. Bots possess a wide range of applications that transcend industries. They serve to streamline procedures, enhance user experiences, and facilitate interactions, rendering them invaluable assets for both enterprises and individuals [19]. Chatbots possess the capability to execute a multitude of tasks, including but not limited to customer support, inquiry resolution, recommendation provision, and informal discourse. Usually developed to replicate conversational patterns reminiscent of human beings, these programs are prevalent on messaging platforms, websites, and mobile applications. These programs, which are powered by artificial intelligence, are engineered to execute conversations with users using natural language. Frequently, they employ machine learning (ML) and natural language processing (NLP) algorithms to better comprehend and respond to user inputs [20].

of humanity's Unquestionably one most astonishing accomplishments, the creation of the AI-Chatbot has enabled the harnessing of a level of power and potential that has never been seen before. It is anticipated that in the not-too-distant future, AI-powered chatbots will emerge as useful tools in the educational sector, assisting students in their pursuit of knowledge [21]. Rudolph et al. (2023) describe the field of chatbots has witnessed rapid and significant advancements since the latter part of November 2022. There appears to be an abundance of news each day. Competitor chatbots are engaged in a fierce battle amidst an AI arms race and gold rush. Higher education is being significantly influenced

by these swift advancements, as millions of students and academics have begun employing algorithms such as ChatGPT, Bing Chat, Bard, Ernie, and others for a variety of objectives.

According to Kumar et al. (2023), since November 2022, the utilization of the Chat Generative Pre-Trained Transformer (ChatGPT), a large language model (LLM) developed by OpenAI in San Francisco, California, United States, has captivated the globe. Microsoft introduced its chatbot AI, Bing, in February 2023 (Microsoft Corporation, Redmond, Washington, United States), and Google AI released Bard in March 2023 (Google LLC, Mountain View, California, United States). It is added by Sabry (2023) that on February 6, 2023, Google launched Bard, a conversational Al chatbot driven by LaMDA, in response to OpenAl's ChatGPT chatbot's surprising popularity. Bard, Google's conversational Al chatbot, which is similar to ChatGPT [25]. Both ChatGPT and Bard are examples of artificial intelligence chatbots that are built on Large Language Models (LLM) and have the potential to offer a variety of applications across a range of domains such as in education [26]. Within the domain of AI, generative large language models (LLMs) have surfaced as a technologically revolutionary advancement, possessing the ability to produce textual material that emulates the caliber of human-authored texts in various languages [27]. Although LLMs have been in existence for several years, their utilization has significantly increased in 2022 and 2023 as a result of the introduction of user-friendly chatbots.

AI chatbots are currently garnering significant attention due to recent developments in Large Language Model (LLM) technology [28]. There are currently several publicly accessible chatbots in use, such as Google Bard, My AI by Snap, Microsoft's AI-powered Bing, and others [29]. Promising capabilities have been demonstrated by large language models (LLMs), including ChatGPT-3.5, Google Bard, and Microsoft Bing, across a range of natural language processing (NLP) tasks [30]. Chatbots powered by AI, including Google's Bard and Open AI's ChatGPT (Generative Pretrained Transformer), have significantly transformed how humans engage with technology [31]. ChatGPT and Google Bard, two of the most well-known LLMs, have received considerable recognition for their ability to comprehend textual information and produce contextually appropriate responses.

Large Language Models, also known as LLMs, have developed as strong tools capable of digesting and creating text that appears to have been written by humans as a result of significant improvements in natural language processing. These LLMs, which include ChatGPT (which was developed by OpenAI Incorporated and is based in the Mission District of San Francisco, United States), Google Bard (which was developed by Alphabet Inc. and is based in California, United States), and Microsoft Bing (which was developed by Microsoft Corporation and is based in Washington, United States), have been applied across a variety of domains, demonstrating their potential to help with the resolution of difficult tasks and the improvement of information accessibility [32]. However, LLMs require large amounts of training data to develop accurate responses [33].

The increasing progress of AI has garnered considerable interest in its implementation within the realm of education. Google Bard, a language model created by Google, has been suggested as a resource that could aid students in resolving challenges about a wide range of educational disciplines [34]. According to Ram & Verma (2023) Google, a prominent player in the search engine industry, has recently unveiled Bard, an artificial intelligence-powered automaton. It establishes that Google's most recent AI technology is capable of notifying consumers of the most recent events and locates the most recent, accurate responses to inform users. Because ChatGPT has only been trained on data through 2021, it frequently only provides accurate information through that date.

There are several previous studies related to chatbots. The utilization of AI and LLMs has garnered considerable interest within the realms of higher education and research [35]. All of these (ChatGPT, Bard, Jasper Chat, Socratic, Bing AI, DialoGPT, and others) are influencing how education and research are conducted. Qin et al. (2023) describe that the advent of the digital age has witnessed significant advancements in education due to the incorporation of AI, which has fundamentally altered instructional approaches, curriculum development, and student participation. This review paper extensively examines the dynamic realm of digital education by contrasting the functionalities and consequences of OpenAI's groundbreaking text generation tools, including Bing Chat, Bard, and Ernie, with particular emphasis on the innovative ChatGPT. Ventayen (2023) describes that the lower similarity index and limited dependence on internet sources exhibited by ChatGPT indicate a greater inclination toward generating original content. This highlights its potential in tasks that require distinctiveness. On the other hand, Bard and Bing exhibit elevated similarity indices, an indication of their more extensive integration of accessible online content. This may prove beneficial for applications that heavily rely on context. Although ChatGPT and Bard demonstrate proficiency in comprehending context, producing substantial content, and offering pertinent insights, they still have shortcomings in terms of precision and uniformity across inquiries. Significantly, Bing prioritizes content creation assistance over direct essay generation demonstrating the variety of strengths that AI models possess. The continuous improvement of AI technology and the resolution of inconsistencies will serve to enhance the practicality of models in a wide range of contexts. The aforementioned results enable individuals to make wellinformed choices by customizing AI applications to suit their particular content needs and guaranteeing the reliability of the results produced.

The conversational and creative tools introduced in late 2022 later referred to generically as generative Al are amassing enormous followings [38]. OpenAI (an Al research and deployment company) introduced ChatGPT. ChatGPT was introduced in November 2022 and other natural language processing AIs (e.g. Google Bard), have found applications in diverse sectors such as healthcare, customer service, and language translation and many more areas [39]. This chatbot engages in conversations with users to assist with various tasks such as code writing and debugging, essay composition, destination recommendations, document summarization, story creation, and answer generation for inquiries like "How do I decorate my room?".

Google announced Bard (Experiment version and henceforth Bard) and Meta revealed LLaMA shortly thereafter in 2023. After deciphering a user's inquiries, these chatbots invoke distinct models to execute the desired duties (Singh, 2023). For instance, if the request necessitates document summarization as opposed to paraphrasing, a distinct model is invoked. The aforementioned are widely recognized illustrations of conversational chatbots that execute a variety of duties by integrating various fine-tuned models into large language models (LLMs).

Google Bard is designed as a large language model (LLM) interface that allows users to collaborate with generative AI such as answering complex questions, composing scripts, and text-based assignments, with the answers based on Google engine search results. Google Bard is an AI-powered chatbot engine designed by Google to simulate human conversation using natural language processing (NLP) and machine learning. In addition to complementing Google searches, Bard can be integrated into websites, messaging platforms, or apps to provide realistic natural language responses to user questions. Google Bard was initially announced on February 6, 2023, with an unclear release date. This application then started to open on March 21, 2023. Then, only on May 10, 2023, Google opened access to the chatbot application it designed in 180 countries and regions. This application can be used by anyone who is 18 years of age or older and has a personal Google account. Like other AI chatbots, Bard must learn and be trained to provide correct answers from inaccurate or misleading information, as seen in its first demo. AI training is a never-ending, compute-intensive process because there is always new information to learn automatically.

Google Bard is a conversational language model chatbot developed by Google AI. These chatbots are trained using large datasets of text and code and can generate text, translate languages, write various types of creative content, and answer our questions informatively. So far, there are quite a lot of types of tasks that Bard can do. For example: following our instructions and completing our requests carefully. Answers our questions comprehensively and informatively, even if they are open-ended or challenging. Bard is a very powerful tool that can be used for many different purposes. This chatbot can be used for education and other. Even though it is still in the development stage, Bard has great potential to revolutionize the way we interact with computers.

Bard is a conversational AI tool by Google. Users can collaborate with Bard to brainstorm ideas, spark creativity, and accelerate productivity. Bard uses our location and your past conversations to provide you with its best answer. Bard is an experimental technology and may sometimes give inaccurate or inappropriate information that does not represent Google's views. The feedback Opens in a new window will help make Bard better. Bard is an experiment. As we try Bard, we need to remember that Bard will not always get it right. Bard may give inaccurate or offensive responses. When in doubt, we use the Google button to double-check Bard's responses. Bard can use extensions. To connect us with useful content, Bard may share parts of our conversations and other relevant info, like our location, with other services. These services may use that info for their improvement, even if we later delete our Bard activity. We can turn extensions off anytime on the Extensions page. We can learn more in the Bard Privacy Help Hub Opens in a new window. Bard will get better with our feedback.

There are several terms of use. Google Bard does not support user accounts under 18 years of age. For Google Workspace account users, Workspace administrators are required to activate the feature before using it. If it has not been activated in Workspace, users will see the message "This Google Account is not supported". The first prompt provides a starting point or direction for the Bard. The response follows the same tone, context, and style as the command.

One of the considerations for users when using chatbot services to obtain written text is the style resulting from the previous command. Sometimes the commands used do not produce writing as expected. Therefore, with the new Google Bard feature which relates to formal and casual writing styles, this could be a solution. This feature allows Bard's responses to easily match tone and style. There are five style choices simple, professional, long, short, and casual.

There are several features in Google Bard: 1) Explore text in various formats. Bard AI can generate text in a variety of formats, including pdf, word, and HTML. This of course makes it very easy for users to carry out their tasks, for example, we can explore HTML files from website pages for Bard ai to summarize. This is certainly the best way to get to the heart of a long and complicated article. Apart from that, we can also adjust the length and level of detail of the summary according to our needs. 2) Can read pictures. Although Bard is not multimodal like Open AI's ChatGPT-4. Google's chatbot can now read images intelligently and respond to them. This can happen because Bard is integrated directly with google lens. This integration allows it to read all types of images and also be able to respond directly to them. 3) Image generator with adobe firefly. Adobe firefly is a family of creative generative ai models that can quickly produce highquality images just through words according to user requests. However, this feature is not yet available in the chatbot, so to make things easier for users, the company will soon integrate the adobe firefly model directly into Bard. This means that Bard users can directly ask the chatbot via a prompt to create an image only via text. You can even further edit Bard's ai-generated images. 4) Google services integration. Apart from being a chatbot, Bard will also be integrated with google services. To simplify workflows, the company created seamless connections between Bard and other services, such as Google sheets, docs, and even maps. This will allow all services to work together and bring more new features to the tool. 5) Interact using voice. Bard can interact using voice, which is certainly very easy for users. You can use it to input voice to dictate long texts or ask complex questions. Apart from that, Bard can also read its responses to the user, so users don't have to bother reading it themselves. This feature is also useful for the pronunciation of certain words and languages. 6) Can save conversations. In Bard's new interface, users have the option to save, create, resume, and edit conversations with Bard. 7) Explaining program code. Bard can explain code, which is a great way to learn a new programming language or to debug existing code. We simply paste the code you want to understand into the chatbot, then Bard will provide us with a clear and detailed explanation of the code. We can also ask Bard specific questions about the code, such as what it does, how it works, or why it produces a certain output. After knowing the various Bard features that can make life easier, the next step is how to use them. 8) Supports Indonesian. At the start of its release, language support for Bard ai was very limited, users could only use English. However, google is making developments, by expanding its language support to more than 40 languages, including Indonesian. With this improvement, users in Indonesia can ask questions or give tasks to Bard more easily and efficiently. The chatbot will also respond to questions or tasks in Indonesian.

# II. RESEARCH METHODS

This research is descriptive qualitative research. Qualitative descriptive research is a research method that utilizes qualitative data and is described descriptively. Qualitative research generates narrative data that is, data described in words instead of numbers [41]. It means that qualitative research is more descriptive and does not use numbers. For the reader as well as the researcher, a description of the data gathered throughout the research process is crucial.

In this research, the researcher uses documentation to collect data. Documents are key sources of data in qualitative research [42]. Thus, documents, be they visual, textual, or electronic, have become an increasingly prevalent type of qualitative data over time [43]. Over time, documents, whether they be written, visual, or electronic, have evolved into an increasingly widespread type of qualitative data [44]. In this research, the researcher uses electronic documents in the form of an online chatbot namely Google Bard.

The researcher analyzes data qualitatively using data reduction, data display, and conclusion as proposed by Miles et al. (2018). Data reduction is an activity of summarizing, sorting, selecting important points, and

### International Journal of Computer and Information System (IJCIS) Peer Reviewed – International Journal Vol : Vol. 05, Issue 03, September 2024 e-ISSN : 2745-9659 https://ijcis.net/index.php/ijcis/index

focusing on important aspects of the data obtained from the field. After reduction, the data is displayed it will be clearer and the data collected will be easier with the figure, table, or pictures. If the data is foreign, unknown, and unpatterned data is found. This data will certainly be the focus of the research. Next, the author presents the data. Data display is a structured collection of information, which provides the possibility to draw conclusions and take action. In this case, narrative text is most often used to present data in qualitative research. Next, the researcher concludes. Qualitative research concludes that it may be a discovery that has never happened before. The conclusion results are displayed based on research objects in descriptive form.

## III. RESULT AND ANALYSIS

#### Results

In this finding, the researcher describes the ability of Google Bard as an Al-Powered Chatbot Tool for writing English essays. The home view of Google Bard can be seen below:





Figure 1. The View of Bard Homepage (https://Bard.google.com/chat)

There are several ways to use Google Bard: Visit this website https://Bard.google.com/ or https://Bard.google.com/chat and make sure we have logged in to our Google account. Then, click "Try Bard" and agree to the Terms & Privacy provided by clicking "I agree". The "Terms & Privacy" consists of:

- Our data and Bard. This notice and our Privacy 1 Policy opens a new window to describe how Google handles our Bard data. Bard is provided by Google LLC (each referred to as Google, as applicable). Google collects our Bard conversations, related product usage information, info about our location, and our feedback. Google uses this data, consistent with our Privacy PolicyOpens in a new window, to provide, improve, and develop Google products and machine learning technologies, services and including Google's enterprise products such as Google Cloud. By default, Google stores our Bard activity in a new window with your Google Account for up to 18 months, which we can change to 3 or 36 months. Info about our location, including the general area from your device, IP address, or Home or Work addresses in our Google Account, is also stored with our Bard activity. To help with quality and improve our products, human reviewers read, annotate, and process our Bard conversations. We can protect our privacy as part of this process includes disconnecting our conversations with Bard from our Google Account before reviewers see or annotate them.
- 2. Configuring our settings. Visit our Google AccountOpens in a new window to access settings and tools that let us safeguard our data and protect our privacy. If we want to use Bard without saving our conversations to our Google Account, we can pause saving our Bard activity and open a new window. We can review our prompts or delete our Bard conversations from our Bard activity. Bard conversations that have been reviewed or annotated by human reviewers (and related data like language, device type, location info, or feedback) are not deleted when we delete our Bard activity because they are kept separately and are not connected to our Google Account. Instead, they are retained for up to three years. Even when Bard Activity is off, our conversations will be saved with our account for up

https://ijcis.net/index.php/ijcis/index

to 72 hours. This lets Google provide the service and process any feedback.

If we turn off this setting or delete our Bard activity, other settings, like Web & App Activity or Location, may continue to save location and other data as part of our use of other Google services. When we integrate and use Bard with other Google services, they will save and use our data to provide and improve their services, consistent with their policies, and the Google Privacy Policy opens in a new window. We can request opens in a new window for the removal of content under our policies or applicable laws. We can export opens in a new window our information. We can see Bard Product FAQ and Bard Privacy to learn more about how Bard works and how Google uses our Bard data.

There are several things to know. Bard uses our location and our past conversations to provide us with its best answer. Bard is an experimental technology and may sometimes give inappropriate information that doesn't represent Google's views. We do not rely on Bard's responses as medical, legal, financial, or other professional advice. Our feedback Opens in a new window and will help make Bard better.

3. Terms of Service. We agree that our use of Bard is subject to the Google Terms and the Generative AI Additional Terms.

Bard is an experiment. As we try Bard, we need to remember that Bard will not always get it right. Bard may give inaccurate or offensive responses or information that does not represent Google's views. When in doubt, use the Google button to double-check Bard's responses. Bard can use extensions in the browser. To connect us with useful content, Bard may share parts of our conversations and other relevant info, like our location, with other services. These services may use that info for their improvement, even if we later delete our Bard activity. We can turn extensions off anytime on the Extensions page. We can rate responses and flag anything that may be offensive or unsafe. We can stay updated on Bard's improvements. There is the option to receive email updates about Bard. Our data will be processed by Google to send those emails following Google's Privacy Policy.

| $e \rightarrow \sigma$ is backgooglocenychat                     |   |   | ¥ G ± A ► 🖬 🕻                                       |
|--|---|---|---|
| Bard Reading   |   |   | ១ លី 🕫 🗉  |
| + New Orat   | *   |   | c   |
|  | Hi, I'm Bard  |   |   |
|  | Tell me what's on your mind, or<br>holp me improve.                               | pick a suggestion. I have limitations an                          | d won't always get it right, but your feedback will |
|  | Understand  | Create  | Explore   |
|  | whet's behind a trend   | with 531  | Endalizary  |
|  | complex topic   | sales altch   | bost places to visit in                             |
|  | economic concepts   | design a schema   | sports recommendations                              |
|  | <ul> <li>Humon medievens may process you<br/>doubt - Don't above again</li> </ul> | r fischenzenselens for quality purposes. Dee's erti               | er sereddae infa: Lasers orgen                      |
|  | Enter a prompt here   |   | <ul> <li>€</li> </ul>                               |
| Certal Jana, Indonesia     Francyou (Pladoctor - Lodale receiper | Bari  | nay disilayine sande or silieraire information that court technol | Clough's views Bard Privacy Notice                  |

Figure 2. The View of Bard Source: <u>https://Bard.google.com/chat/</u>

After that, a chat room with Bard AI will open. Type, then send a question or command to the Bard AI.

Journal IJCIS homepage - https://ijcis.net/index.php/ijcis/index

Next, Bard AI will read the question or command and immediately respond to the response in the conversation room. There are some general rules for writing prompts for Bard: 1) Start simple - start with simple commands and build from them. 2) Call to Action – start the command with an action word like "Write", "Create", or "Summary" instead of "Can you". 3) Add Context - add specific and relevant context to the task we want to perform. 4) Add Expectations - add clear and direct expectations for the content, such as how long it should be and what should be included. The figure above shows "*Hi, I'm Bard. Tell me what's on your mind, or pick a suggestion. I have limitations and won't always get it right, but your feedback will help me improve*".

We can start by typing the question we want to ask in the "Enter a prompt here" column such as "Hallo, good afternoon. Can you help me to do my English assignment?". We wait until Bard answers our question. Any commands or questions we have asked Google Bard can be easily edited. If we are not satisfied with the answers Google Bard produces. Bard has several alternative answer drafts that we can choose from, according to the criteria we are looking for. We can do this by Clicking the "View other drafts" option in the top right corner, and waiting until several draft options appear. After that, click on one of the drafts we want to review. Search and select the best draft that fits our criteria.

| Band (transform)   |  |  |  | ಶ ್ ಠಿ ತ  |
|--|--|--|--|---|
| - New chat   | 👔 Helo, grad alternacis. Can yau help me to da   | rry English ansigrment?  |  | 1   |
|  | -  |  |  |   |
| English assignment tips  |  |  | v  | lew other don'ts 🔨 📦  |
|  | The second second second to your Registransignment.  | (See 3)<br>Yes, i can help yes rock yes finglet endpriver.<br>Here was any period type.  | (Dentral)<br>Sizes, Li con helje yne te de yner ferglikk oer<br>Tearr ein werne general tiget  | anne. 🖉   |
|  | A Bread Aller and an and a second second distances and   | L - realization and mission an advanced  | Les materier de contracer estat  | unu IU  |
|  | 🔶 No, I can belo you with your finglish assignm  | erc. Hara are some tips:   |  |   |
|  | <ol> <li>Road the assignment carefully. Vake so<br/>requirements?</li> </ol>   | m you understand what is being asked of you.   | What type of assignment is it? What  | are the specific  |
|  | 2. Do your research. Oather information fr   | on credible sources to support your arguments  | and ideas.   |   |
|  | <ol> <li>Brainstorm and organize your thoughts<br/>thoughts. This will help you to write a car</li> </ol>  | <ul> <li>Choe you have a good understanding of the tr<br/>ar and concluse assignment.</li> </ul>   | spilo, take some time to brainstorm id   | tees and organize your  |
|  | 4. Write a draft. Don't wony about making  | your draft perfect. Jast get your ideas down on  | poper (or screen).   | And a second second   |
|  | <ol> <li>Revise and edit your draft. Once you have free of errors.</li> </ol>  | we a chart, take some time to revise and edit it. I  | Noke sure your assignment is well-w  | others organized, and   |
|  | <ol> <li>Proofread your ossignment carefully. D<br/>spelling.</li> </ol>   | efore you cubmit your assignment, proofread it   | carefully to catch any errors in gram  | mer, punctuation, or  |
|  | -  |  |  |   |
|  | Erter a prompt here  |  |  |   |
| Contra Loos, estancia<br>Non par Produces - Operationales<br>-> C (# Bandago aglier ann (1947)/1671  | Ref on data  | incomment of the Gerbin and Art the strends operand for  | er'r c'wr Raef Blony Melice  | # 4 2 A .   |
| Series Ann, Hanness<br>Anne par Plattice - Ignorida et al<br>  | Ref cos della  | knowners of the decision of a most superson for  | erry over keel hinney blacke   | ॥ < 20 x x x x x x x x x x x x x x x x x x  |
| Source Jan. Harrows - Speech and a<br>-> C & backgoogle conclusion<br>= Bard (speech and<br>+ New chat   | Renow deep   | tocome the information that mean operations  | (b) chur Reelfhiosuytheise   | ******  |
| Source and Internet<br>Non-participantic states<br>O ( to bondy any provide state<br>E Band (toper lawer)<br>F New chast<br>Record   | Acrossites   | inserne the density of the next speed of the second speed speed of the second speed of the second speed of   | introver Basel Allowy Bases  | ≋ < ⊵ a > ।<br>यै ©ै क्षा<br>fyour main   |
| Constance search<br>→ C ( the hard perpension<br>= Band (segmean)<br>+ New chat<br>- New chat<br>- rem<br>- regists assignment tips  | Autorities   | is may be helpful:<br>is may be helpful:<br>to be placed at the beginning of your ierr<br>vidence. Don't just make assertions - p  | er and concise statement of<br>aduction.   | ब य छ के न<br>में 🕈 🔮 🕃<br>fyour main<br>sources to support   |
| Transfer Annual State (State State S | Automatica<br>Mere are some additional flos th<br>Use strong thesis stateme<br>argument or point, it should<br>be sport your chillins with<br>upon chilms.   | stances their there is a second  | en and concise statement of<br>observant concise statement of<br>observant.<br>covide evidence from credible<br>plox sentences.  | 확 속 교 값   |
| brok ale weeks     brok ale weeks     control of the second       | Merce where<br>Automatical<br>Here are some additional flost the<br>Bug attrong thesis statement<br>argument are pairs. It should<br>be support, your chilen with the<br>pairs chilen.<br>Bug does not denotes have<br>eithing your sources. It is in<br>eithing your sources.   | transmit - Mark Market Market Market Alexandri<br>It may be herefold:<br>Its: Your thesis statement double on a<br>be glassed at the baginging of your the<br>selection. Don't just mark selections - g<br>page, Andia safet just go your sources correctly, t<br>ces.   | en and conclose statement of<br>objection.<br>envide exidence from credible<br>plax sontences.<br>especially if you are using quo  | ब ् ् र ् के के ।<br>मि कि  |
| Contraction and Contractions     Contractions     Contraction  | Automatication and a set of the s | t may be headed.<br>It may be headed:<br>the sport of sport and back of the second sport of the sport of sport of the sport of sport of the sport of sport of the sport of sport  | letr ner kethlen, kes<br>der and conclus statement of<br>eduction.<br>noide eldence from credible<br>spocially if you are using quo<br>case feel free to ask rea. I am   | a a a a a a a a a a a a a a a a a a a   |
| Toroda de anteresa entre a la serie de la  | Autoritation Autoritation Here are some additional (os the - Support your claims with - support your claims with - support your claims with - support your claims Use claim and days greaters - Support your claims Use claim and any specific field and a assistance Beele note in All an additional of the solution - Beele note in All an Alls Beele note in Alls Beele note in All an Alls Beele note in Alls Beele note in All an Alls Beele note in Alls  | transmit i think interest the sector associate<br>It may be helpful:<br>It may be helpful:<br>It was be helpful:                               | letro and conclusions statuted<br>for and conclusions statuted<br>induction.<br>excide evidence from credible<br>per sentences.<br>Especially if you are using quo<br>asserted free to saik new. I are il<br>crockle perfect assistance. It on | キュービーの ・<br>ご の を に<br>your main<br>recurses to support<br>tes or paraphrasing<br>heapy to provide<br>weeks; twill do my  |
| C & Long system (Left)     C & Long system (Left)     C & Long system (Left)     C & C & Long system (Left)     C & C & Long system (Left)     C & C & Long system (Left)  | Annone Mark  | t may be headed.<br>It may be headed:<br>the flow of the second statement should be a to<br>be global at the headpoint of source of the<br>source boot just make assertion - p<br>widence. Don't just make assertion - a<br>portart to all your sources correctly or<br>sons.<br>angeot of your English ansignment, pl<br>development, and I may not be able to jo<br>an angement to the base of my slittly.   | Internet Mathlem, Mark<br>Son and concluse statement of<br>adviction.<br>Incode exidence from credible<br>pice sentences.<br>Incode if free to advice 1 are 1 are<br>costo feel free to advice 1 are<br>costo feel free to advice 1 are        | स्  |
| brod all average and the second seco  | Automatication of the second according to the second a | to many the helpful:<br>at may be helpful:<br>be provided at the helpful at the selections -<br>page, Andel and provided at the selections -<br>to at the selection -<br>the selection -<br>th | entropy testificany test   | R         C         R         R         R           R         C         R         R         R         R           If your main         sources to support         sources to support         R< |
| the second       | Administration of the set of the  | scenes - Manufacture in each association<br>at may be helpful:<br>etc. Your brains statement should be a s<br>be placed at the beginning of your lare<br>widelence. Durity ist maine assertions - p<br>agage, Anoli or List maine assertions - p<br>agage, Anol or List maine assertions - p<br>cest, comport of your English statighteem, pl<br>development, and I may not be able to j<br>a assignment to the test of regulations.   | Internet testificany test  | typer main<br>tes or paraphrasing<br>hoppy to provide<br>weeker, I will do my   |

Figure 3. Example of Bard Answer (Draft 1)

First, in Draft 1, Bard answers: "Yes, I can help you with your English assignment. Here are some tips such as: 1) Read the assignment carefully. 2) Do your research. 3) Brainstorm and organize your thoughts. 4) Write a draft. 5) Revise and edit your draft. 6) Proofread your assignment carefully. Here are some additional tips that may be helpful such as 1) Use strong thesis statements. 2) Support your claims with evidence. 3) Use clear and

### International Journal of Computer and Information System (IJCIS) Peer Reviewed – International Journal Vol : Vol. 05, Issue 03, September 2024 e-ISSN : 2745-9659 https://ijcis.net/index.php/ijcis/index

concise language. Avoid using jargon or overly complex sentences. 4) Citing your sources. 5) If you need help with any specific aspect of your English assignment, please feel free to ask me. I am happy to provide feedback and assistance. Please note that I am still under development, and I may not be able to provide perfect assistance. However, I will do my best to help you to

complete your assignment to the best of my ability.



Figure 4. Example of Bard Answer (Draft 2)

First, in Draft 2, Bard answers: Yes, I can help you to do your English assignment. Here are some general tips such as 1) Clarify the task. 2) Do the research early. 3) Leave a strong paper trail.. 4) Brainstorm, make notes, jot down ideas as they occur, and begin by writing the stuff you do know. 5) Get feedback. This can help you to identify any areas that need improvement. Here are some additional tips for specific types of English assignments such as Essays, Research papers, and Creative writing. If you need more specific help with your English assignment, please feel free to ask me specific questions. I am happy to help you in any way that I can.

| <ul> <li></li></ul>       | 2544 3 /94303113964e   |   | 2  | 9.12 4 9 1   |  |  |  |
|---------------------------|--|---|--|--------------|--|--|--|
| = Bard(textine)           |  |   | Ø  | ជ ៤ ខ        |  |  |  |
| + Nea.crat                | Hote, good attansion. Can you hoto me ta-  | to my linglish posignment?  |  | 1            |  |  |  |
| General.                  |  |   |  |              |  |  |  |
| D English assignment tips |  |   | Vew other de   | - 4)         |  |  |  |
|                           | 2981   | Ovit2   | (CD)   |              |  |  |  |
|                           | Vision and telepistic of the telepistic length of any generative sector and the  | the four hep yours do your Digit's and present.<br>Here a sector grow of you                          | Gam 1 tanchelo pra te de vec: English ant present.<br>A contact superspectal fact. | 0            |  |  |  |
|                           | 1 8 - 1 8  | A deliver berneter  | A second contraction of the second   |              |  |  |  |
|                           | 🔹 Sure, Lean help sou to do your English assis   | ment, Here are some general tips:   |  |              |  |  |  |
|                           | <ol> <li>Understand the assignment. Coroluly<br/>is the word count? What are the regulation</li> </ol>   | read and understand the assignment instructs<br>ements for formating and scale?                       | ers. What are you 📴 ng asked to do? What is the                                    | topic 7 What |  |  |  |
|                           | <ol> <li>Gather your sources. Crick you under<br/>resources. Be sure to choose sources.</li> </ol>   | stand the assignment, start gameing your assist<br>that are credible and relevant to your topic.      | oos, Th's may include books, articles, websites, o                                 | i ochor      |  |  |  |
|                           | <ol> <li>Oreste en patiex. Orne you have gall<br/>a clear and concise coscy.</li> </ol>  | wend your annexes, crease ar action to help yo  | e mparias yr a chonghes and i dons. This will rialgo                               | you to write |  |  |  |
|                           | 4. While a draft. Once you have an outline, start writing a draft or your essay. Be sure to support your claims with evidence from your sources. |   |  |              |  |  |  |
|                           | 5. Review and edit. Once you have finish<br>controlation arrors. Ask a friend on fair  | sel activing a chaft, take nome time to review and a<br>Ny momber to road your usawy and give you for | eff your easing Procedured for gramming spalling .<br>dback                        | wet          |  |  |  |
|                           | Here we are additional tips that may had   | nipliat for specific types of finglish ansigments   |  |              |  |  |  |
|                           | fine a possible  |   |  | •            |  |  |  |
|                           |  |   |  |              |  |  |  |

| e o o u nanjonjkovajostara  | 1911938 4 4 E P  |
|---|--|
| Bard(bpurieut)  | ច ជឺ 🕫 🕸   |
| + New chat  | <ol> <li>Revise and edit. Once you have finished writing a draft, take some time to revise and edit your essay. Proofread for<br/>grammar, spelling, and ounctuation errors. Ask a friend or family member to read your essay and give you feetback.</li> </ol>  |
| Report  |  |
| D English assignment tips   | Here are some additional tips that may be helpful for specific types of English assignments:   |
|   | <ul> <li>Essays: When writing an essay, be sure to have a clear thesis statement, Your thesis statement should state your main argument or claim. The body of your ensay should support your thosis statement with avidence from your sources. Neur conclusion should summing your main points and restate your thesis statement.</li> </ul> |
| <ul> <li>Research papers: Research papers require more in-depth research than essays. You should<br/>to support your claims. Be sure to cite your sources correctly.</li> </ul> |  |
|   | <ul> <li>Creative writing assignments: Creative writing assignments, such as poems, stories, and plays, give you the opportunity to express your creativity. Be sure to follow the specific instructions for your assignment.</li> </ul>   |
|   | If you have any specific questions about your English assignment, please feet free to ask me, I am happy to hep in any way that I can.   |
|   | ch φ # < G ;   |
|   | Enter a prompt here  |
| Control Long. Information   | Bed the display trace are offensive information that down't recreated Graph's years Band Privacy Matipa  |

Figure 5. Example of Bard Answer (Draft 3)

First, in Draft 3, Bard answers: Sure, I can help you to do your English assignment. Here are some general tips such as: 1) Understand the assignment. Carefully read and understand the assignment instructions. 3) Create an outline. 4) Write a draft. 5) Revise and edit. Once you have finished writing a draft, take some time to revise and edit your essay. Proofread for grammar, spelling, and punctuation errors. Here are some additional tips that may be helpful for specific types of English assignments such as essays, research papers, and creative writing assignments. If you have any specific questions about your English assignment, please feel free to ask me. I am happy to help in any way that I can.

The researcher asks Bard specifically, such as "Can you write English an essay which consists of 1 paragraph about "The Importance of AI in English Language Teaching (ELT)"?"

| € → C (# bailgoopleane/dia/500  | Had MDak   | ଅନ୍ତ ସ   | 2 \$ | * 🛛 🔁 🗄 |
|---|--|--|------|---------|
| Bard (Sector)   |  | 5  | ್ ರಿ | s : O   |
| Image: Second | Image: Section 1         Margin: Section 2   | a de beaching<br>sea beaching<br>receitor<br>moment and<br>researcher<br>kalante leans<br>sea and<br>sea an |      |         |
| <ul> <li>In the second case</li> </ul>  | Extension being ware to a characteristic sector and the sector and the sector of | •  | y.   |         |

Figure 6. Result of Bard's Writing about English Essay in 1 Paragraph (Draft 1)

Sure, here is a 1-paragraph essay about the importance of AI in English language teaching (ELT): The Importance of AI in English Language Teaching (ELT)

Artificial intelligence (AI) is rapidly transforming many industries, including education. AI has the potential to revolutionize English language teaching (ELT) by providing personalized and interactive learning experiences, automating tasks for teachers, and providing new tools and resources for students. One of the most important benefits of AI in ELT is its ability to personalize learning. AI-powered learning platforms can track students' progress and identify their strengths and weaknesses. This information can then be used to create customized learning plans for each student. This is especially beneficial for students with learning disabilities or who are struggling to keep up with the pace of the class. AI can also be used to automate many tasks for teachers. For example, AI can be used to grade essays, provide feedback on student work, and create lesson plans. This frees up teachers to focus on more important tasks, such as teaching and interacting with students. Finally, AI is providing new tools and resources for students to learn English. For example, there are now many AI-powered chatbots and virtual assistants that can help students practice their speaking and listening skills. Some AI-powered apps and games can help students learn new vocabulary and grammar in a fun and engaging way. Overall, AI has the potential to significantly improve the quality and effectiveness of ELT. By providing personalized learning experiences, automating tasks for teachers, and providing new tools and resources for students, AI can help all students reach their full potential in English language learning. In conclusion, AI is a powerful tool that can be used to improve ELT in many ways. By personalizing learning, automating tasks for teachers, and providing new tools and resources for students, AI can help all students learn English more effectively and efficiently.



Figure 7. Result of Bard's Writing about English Essay in 1 Paragraph (Draft 2)

Sure, here is a 1-paragraph essay about the importance of AI in English language teaching (ELT): The Importance of AI in English Language Teaching

Artificial intelligence (AI) is rapidly transforming many industries, including education. AI has the potential to revolutionize English language teaching (ELT) by providing personalized and interactive learning experiences, automating tasks for teachers, and providing new tools and resources for students. One of the most important benefits of AI in ELT is its ability to personalize learning. AI-powered learning platforms can track students' progress and identify their strengths and weaknesses. This information can then be used to create customized learning plans for each student, ensuring that they are receiving the support they need to succeed. AI can also be used to automate many tasks for teachers, such as grading essays, providing feedback on student work, and creating lesson plans. This frees up teachers to focus on more important tasks, such as teaching and interacting with students. Finally, AI is providing new tools and resources for students to learn English. For example, there are now many AI-powered chatbots and virtual assistants that can help students practice their speaking and listening skills. Some AI-powered apps and games can help students learn new vocabulary and grammar in a fun and engaging way. Overall, AI has the potential to significantly improve the quality and effectiveness of ELT. By providing personalized learning experiences, automating tasks for teachers, and providing new tools and resources for students, AI can help all students reach their full potential in English language learning.



Figure 8. Result of Bard's Writing about English Essay in 1 Paragraph (Draft 1)

Sure, here is a 1-paragraph essay about the importance of AI in English language teaching (ELT):

Artificial intelligence (AI) is rapidly transforming many industries, including education. In English language teaching (ELT), AI has the potential to revolutionize the way we teach and learn English. One of the most important benefits of AI in ELT is its ability to personalize learning. AI-powered learning platforms can track students' progress and identify their individual needs. This information can then be used to create customized learning plans for each student. This is especially beneficial for students with learning disabilities or who are struggling to keep up with the pace of the class. AI can also be used to automate many tasks for teachers, such as grading essays, providing feedback on student work, and creating lesson plans. This frees up teachers to focus on more important tasks, such as teaching and interacting with students. Finally, AI is providing new tools and resources for students to learn English. For example, there are now many AI-powered chatbots and virtual assistants that can help students practice their speaking and listening skills. Some AIpowered apps and games can help students learn new vocabulary and grammar in a fun and engaging way. Overall, AI has the potential to significantly improve the quality and effectiveness of ELT. By providing personalized learning experiences, automating tasks for teachers, and providing new tools and resources for students, AI can help all students reach their full potential in English language learning.

## Analysis

Bard is an artificial intelligence (AI) system developed by Google. Bard is designed to analyze, understand, and produce high-quality texts such as poetry or song lyrics. Bard uses deep learning techniques and natural language processing (NLP) to learn human language patterns and produce structured and creative text. Bard is powered by a complex transformer model involving billions of parameters. This model was trained using machine learning techniques by utilizing the large computing resources owned by Google. Bards learn language patterns and structures from a variety of textual sources, including poetry and classical literature.

Currently, Bard is still in the experimental stage. We can check our approval for updates about Bard sent to email or directly click "Continue" Finally, Bard is ready to use. We can start by typing the question we want to ask in the "Enter a prompt here" column. Wait until Bard answers our question. Any commands or questions we have asked Google Bard can be easily edited. The ways are: Select the pencil icon to the right of the question to start editing the text. Delete the old question and type a new question or command in the box provided. Finally, click "Update". If we are not satisfied with the answers Google Bard produces. Bard has several alternative answer drafts that we can choose from, according to the criteria we are looking for. We can do this by Clicking the "View other drafts" option in the top right corner, and waiting until several draft options appear. After that, click on one of the drafts we want to review. Search and select the best draft that fits our criteria.

When we interact with Bard, Google will collect our conversations, our location, your feedback, and usage information, as described in more detail in Google's Privacy Policy and Bard's Privacy Notice. This data helps us provide, improve, and develop Google's products, services, and machine-learning technology, as described in the Google Privacy Policy and the Bard Privacy Notice. For example, we use our feedback to help make Bard safer and to help minimize some of the challenges inherent in large language models. Additionally, Bard uses our previous interactions with Bard and your location to generate its responses. We can change our location settings at any time. Learn more at g.co/privacypolicy/location. Google has a standardized and rigorous review process to improve the quality of Bard, which includes reviewing conversations reported with negative feedback. This helps us identify common types of problematic responses and how Bard can improve.

According to Anderson (2023) By logging in with a Google account at Bard.google.com, users can access the Bard interface and initiate interactions with the model. To commence a dialogue with Bard, users need only input a prompt or query into the designated text field. After that, Bard will produce a reply following the input. Google furnishes users with arbitrary prompt suggestions to aid in initiating conversations. These prompts exhibit variability with each new launch of Bard, providing users with novel opportunities to engage. Google Bard also provides several topics related to the question or command we asked. This is quite interesting and useful if we want to know more about the information we asked about previously. The ways are: Click on the "Google it" option in the lower left corner. Wait until the related topic options appear. Select and click on the topic we want to

search for, we will be taken to the Google search engine page.

Bard has the potential to change the way we interact with text and art. There are some of the impacts such as; 1) Creative Inspiration. With its ability to produce beautiful poetry and song lyrics, Bards can be a source of inspiration for writers, poets, and musicians. Bards can provide new creative stimuli and help in the process of creating works of art. 2) Text-Based Application Development. Bard can be used as an intelligent text search engine or as a component in natural language processing applications. This can improve the user's experience in searching for information or communicating with machines. 3) Literary Research. Bards can be a valuable tool for literary researchers. Bards can analyze language patterns in literary works and assist in exploring deeper meaning and structure.

Bard is distinguished from other chatbots by the incorporation of additional features and functionalities. Bard provides two alternative manuscripts of the identical response for each response. Individuals can examine additional iterations of the generated response by selecting the "View other drafts" option from the menu. In addition, users have the option to activate "Regenerate drafts" to request Bard to produce alternative responses. While the outcomes of regenerating manuscripts are frequently comparable, users are allowed to revise the prompt or submit an entirely new one to obtain a more refined response.

Every conversation between the user and Bard is presented in a solitary window that can be scrolled. However, the conversation history is deleted when the window is closed. Fortunately, Google provides the functionality to directly export responses to Google Docs or Gmail. Bard additionally offers users who are involved in coding endeavors the capability to export their responses to Replit, a widely used online coding platform. This functionality guarantees that users can retain and retrieve their discussions and replies for subsequent consultations or cooperative endeavors.

Google Bard is utilized in an extensive variety of domains and use cases. It is a valuable asset for ideation, outlining, and collaboration in its capacity as an Al chatbot. Bard enables users to compose essays, articles, and communications, in addition to participating in artistic endeavors like poetry and narrative. Significantly, Bard has been extended to support coding activities, enabling users to compose and troubleshoot code via its user interface. Although Google Bard provides users with the capability to search the internet for pertinent content and access current information, certain limitations and concerns should be acknowledged. Bard's responses may occasionally contain inaccuracies or hallucinations, which compromises their accuracy. For example, it might present inaccurate information about contemporary events or particulars. It is imperative to exercise caution when interpreting and verifying the generated responses regarding this aspect. Apart from its experimental designation, Bard's availability and expansion potential render it a valuable supplement to the Al landscape.

Google intends to integrate text-to-image conversion, like Microsoft's Bing.

We can review the images we uploaded in our pinned chats and your recent chats in Bard. We can delete your command, which will also delete the images you uploaded to that command, in your Bard Activity. Images we upload in our Bard command are interpreted using Google Lens technology. For example, Google Lens can interpret the pixels of an image as a jumping cat. These interpretations will become part of our Bard's orders. Google uses this data the same as other Bard commands, as described in the Bard Privacy Notice. At this time, we do not use the actual images we upload or pixels from those images to improve our machine-learning technology, unless they are included in the input. If we submit feedback regarding Bard's responses, Google will include the image in our current conversation as part of that feedback and use this data like all other feedback we provide, as explained in more detail here. In the future, as we process images to provide new features and improve the quality of our services, we will be transparent if we change how handle your we images (https://support.google.com/Bard/answer/13594961?)

Siad (2023) states that Google AI has developed a big language model known as Bard, which was educated using a massive dataset of text and code. It is capable of generating text, translating languages, writing a variety of creative material, and providing us with helpful responses to your inquiries, among other things. Bard generates exhaustive and informative responses to user inputs by employing sophisticated language models that have been trained on an extensive corpus of textual data [48]. It has been demonstrated that Bard is successful in a wide variety of scientific applications, including the analysis of data, the planning of experiments, the examination of relevant literature, and the production of scientific papers.

There are several previous studies about the use of ChatGPT and Bard. [49] A lot of interest and controversy has surrounded the emergence of chatbots powered by generative artificial intelligence (AI) tools, such as OpenAI's ChatGPT and Google's Bard. The study's findings from Bhardwaz & Kumar (2023) suggest that there are substantial variations among the chatbot technologies concerning their performance metrics. In comparison to its competitors, ChatGPT demonstrated superior performance in terms of accuracy and relevance, whereas Bard maintained the quickest response time. Microsoft Bing exhibited the most substantial levels of user engagement and satisfaction. Additionally, the research unveiled the significance of machine learning and natural language processing in augmenting the efficacy of chatbots.

Patil et al. (2023) incorporated 318 questions into the analysis. ChatGPT provided considerably more precise responses than Bard. In contrast, the response length of Bard was considerably longer than that of ChatGPT. In contrast to Bard, ChatGPT exhibited a noticeably prolonged response time ( $26.79 \pm 3.27$  seconds versus 7.55  $\pm$  1.88 seconds, P <.0001). In comparison to Bard, ChatGPT exhibited superior performance in the following domains: general physics and nuclear medicine (85.39% vs 68.54%, P <.001), pediatric radiology (93.75% vs 68.75%, P =.03), and ultrasound (100.00% vs Р 63.64%, <.001). Regarding the remaining subspecialties, ChatGPT and Bard's performance were not significantly dissimilar. ChatGPT demonstrated a greater understanding of radiology than Bard. Although both chatbots exhibit satisfactory levels of radiology expertise, their utilization should be approached with abreast of their inherent limitations and fallibility. Both chatbots furnished answer explanations that were either incorrect or illogical, and they did not consistently attend to the pedagogical aspect of the inquiries. [52] ChatGPT-4.0 exhibited a higher degree of accuracy, as evidenced by the 'satisfactory' rating of 80.6% for responses, in contrast to 61.3% for ChatGPT-3.5 and 54.8% for Google Bard (Pearson's chi-squared test, all  $p \leq 0.009$ ). Mean comprehensiveness scores for all three LLM-Chatbots were exceptionally high (4.35 for Google Bard, 4.23 for ChatGPT-4.0, and 4.11 for ChatGPT-3.5, out of a possible 5). Furthermore, all LLM-Chatbots exhibited considerable self-correction capabilities: 60% (3 in 5) of Google Bard's responses improved after self-correction, compared to 66.7% (2 in 3) of ChatGPT-4.0's and 40% (2 in 5) of ChatGPT-3.5's. The performance of the LLM-Chatbots was uniform across all domains, except "treatment and prevention." Nonetheless, ChatGPT-4.0 maintained its superior performance in this particular field, securing 70% of 'good' ratings, in contrast to 40% for ChatGPT-3.5 and 45% for Google Bard (Pearson's chi-squared test, all  $p \le 0.001$ ).

Rahsepar et al. (2023) explain that ChatGPT-3.5 responded to a total of 120 inquiries, of which 85 (70.8%) were accurate, 14 (11.7%) were partially accurate, and 21 (17.5%) were inaccurate. In contrast, Google Bard furnished responses for 97 out of 120 queries (80.8%), failing to address 23 of them (19.2%). The responses provided by Google Bard received the following ratings: 62 (51.7%) were deemed correct, 11 (9.2%) were deemed partially correct, and 24 (20%) were deemed incorrect. Bing provided responses to 120 queries, of which 74 (61.7%) were accurate, 13 (10.8%) were only marginally accurate, and 33 (27.5%) were incorrect. The Google search engine provided responses to 120 queries, of which 66 (22.5%) were correct, 27 (22.5%) were partially correct, and 27 (22.5%) were incorrect. By an approximate 1.5-fold margin, ChatGPT-3.5 outperformed Google Bard in terms of the likelihood of providing correct or partially correct responses (odds ratio [OR] = 1.55, P =.004). The likelihood of consistency was found to be approximately seven times greater for ChatGPT-3.5 and the Google search engine, respectively, compared to Google Bard (OR = 6.65 [P = .002] for ChatGPT-3.5 and 28.83 [P =.002] for the Google search engine). While ChatGPT-3.5 exhibited a superior accuracy rate when compared to alternative tools, none of them, including Google Bard, Bing, or Google search engines, provided precise and consistent responses to each question.

Coskun et al. (2023) used 23 MTX-related questions from a previous study. To examine accuracy

and completeness, two reviewers used Likert scales to evaluate each model's replies to these questions in the LLMs. GPT models answered 100% correctly, whereas BARD and Bing earned 73.91%. GPT-4 got 100%, GPT 3.5 86.96%, BARD and Bing 60.87% for output correctness. BARD had 17.39% wrong and 8.7% nonresponses, whereas Bing had 13.04% for both. ChatGPT and GPT-4 were more accurate than Bing and BARD in the "mechanism of action" and "side effects" categories, etc. The "lifestyle" models were not statistically different. GPT-4 produced 100%, GPT-3.5 86.96%, BARD 60.86%, and Bing 0%. ChatGPT and BARD generated more extensive "mechanism of action" outputs than Bing. ChatGPT was more thorough than Bing in "side effects" and "lifestyle". GPT models, especially GPT 4, provided extremely accurate and complete patient information regarding MTX use. However, the investigation found errors and flaws in the replies.

Stevenson et al. (2023) explain that ChatGPT and Google Bard achieved accurate interpretations in 20.0% and 33.3% of the 15 presented cases, respectively. In contrast to Google Bard, 66.7% of ChatGPT responses to patient-posed queries were deemed secure, when compared to 60.0% of Google Bard responses. Although both AI tools demonstrated the capability to detect primary hypothyroidism and hyperthyroidism, they were unable to distinguish subclinical manifestations, nonthyroidal conditions, or secondary hypothyroidism. As this study has illustrated, AI tools are presently incapable of producing consistently accurate interpretations and secure recommendations for patients; therefore, they should not be employed in place of seeking guidance from a certified medical practitioner. In this situation, available AI in its current state cannot supersede human clinical expertise.

Al-Ashwal et al. (2023) explain that the specificity of a subscription utility utilized as a benchmark varied between 0.372 (ChatGPT-3.5) and 0.769 (Microsoft Bing AI). Furthermore, in terms of performance, Microsoft Bing AI exhibited the maximum level of accuracy (0.788), while ChatGPT-3.5 maintained the lowest accuracy rate (0.469). When the reference tool was changed to a free DDI source, the performance of all the programs improved; however, ChatGPT-3.5 maintained the lowest specificity (0.392) and accuracy (0.525), while Microsoft Bing AI exhibited the highest specificity (0.892) and accuracy (0.890). When evaluating the accuracy consistency between two distinct drug classes, ChatGPT-3.5 and ChatGPT-4 exhibited the greatest degree of accuracy variability. Furthermore, specificity fluctuations were greatest for ChatGPT-3.5, ChatGPT-4, and Bard when comparing two medications of the same drug class. In terms of accuracy and specificity, Bing AI exhibited superior performance compared to Google's Bard, ChatGPT-3.5, and ChatGPT-4. The results underscore the considerable capacity that these AI tools possess to revolutionize the provision of healthcare for patients. Although the AI platforms that are presently being assessed do have some drawbacks, their capacity to rapidly and sensitively analyze potentially critical interactions indicates a positive development in the direction of enhanced patient safety.

Hallal et al. (2023) explain that the accuracy percentages of the ChatGPTs for a range of tasks are as follows: identifying functional groups from condensed structures (94 percent) and InChi (65-50 percent); converting condensed structures to molecular formulas (86-73 percent), IUPAC (38%), InChi (22-17% percent), and SMILES (56-44 percent); converting InChi to IUPAC (65-50 percent); and converting SMILES to condensed structures (28-11 percent). Bard, in contrast, performed abysmally in the majority of assignments. Particularly limited were the InChi and SMILES notations, which have been effectively implemented in machine learning, on both chatbots. In contrast, GPT-4, an updated iteration of ChatGPT, exhibited marginal progress across the majority of the assessed domains, except for the interpretation of SMILES notations. Although these sophisticated AI chatbots can serve as enduring educational resources in organic chemistry and prompt a reassessment of pedagogical approaches, their integration should be closely observed, especially in light of the swift progression of technologies.

Nguyen et al. (2023) state that Bard was able to reach a performance of 38.8%, which places it in third place behind ChatGPT and BingChat, which both obtained significantly better ratings of 58.8% and 60% respectively. It is essential to keep in mind that the process of translating from Vietnamese to English might potentially affect this performance. As a direct consequence of this, it is strongly discouraged for students in Vietnam to rely on Google Bard for the solution to mathematical issues. Moons & Bulck (2023) illustrate the positive effects of combining ChatGPT and Google Bard to improve the readability of messages and make them easier to understand. Even while ChatGPT did not achieve the reading level that is suggested for students in the 6th grade, it performed significantly better than Bard, which eliminated texts up to 83% of the time. Ilgaz & Celik (2023) demonstrated that the capacities of the models to execute these tasks varied in terms of precision. ChatGPT and Google Bard did not substantially differ in their ability to answer queries. The accuracy with which both models produced multiple-choice questions was quite high. Gupta et al. (2023) explain the progression of Generative AI (GenAI) models has without a doubt been the pinnacle of digital transformation throughout 2022. As GenAI models such as ChatGPT and Google Bard continue to increase in complexity and capability, it is essential to comprehend their cybersecurity implications. Numerous recent occurrences have showcased the offensive and defensive applications of GenAI tools in the realm of cybersecurity, with an emphasis on the technology's social, ethical, and privacy implications.

A new product called Bard by Google, which is a direct rival to ChatGPT was only announced recently. By gaining an understanding of the relative performance of these various chatbots, one may gain valuable information about their respective strengths and shortcomings, as well as which jobs those chatbots are most suited to do [51].

Bard, an AI-generated conversational tool powered by Google, features a comprehensive database as its backend [59]. Within the realm of conversational artificial intelligence, Google's Bard has quickly established itself as a powerful adversary to OpenAI's ChatGPT [36]. Notably, Bard has recently received an upgrade that enables it to process visual inputs in addition to text cues while conversations are taking place. We investigate Bard's capabilities in terms of comprehending and interpreting visual data (pictures), with comprehension and interpretation being conditioned by text inquiries. This is in light of Bard's remarkable track record in handling textual inputs. This investigation has the potential to provide new insights and difficulties for Bard and other emerging multi-modal Generative models. This is especially true in the context of tackling complicated computer vision issues that need correct visual and linguistic understanding.

In the field of AI-powered chatbots, Google's creation of Bard AI marks a big step forward in terms of technological growth. This cutting-edge artificial intelligence is programmed to mimic human interactions by responding to a diverse range of questions and commands posed by users. Bard can provide replies to user inputs that are both complete and useful since it has been trained on a large dataset including text data and uses advanced language models. While ChatGPT-3.5 exhibited a superior accuracy rate when compared to alternative tools, none of them, including Google Bard, Bing, or Google, provided precise and consistent responses to each question. The advent of publicly available large language models, exemplified by ChatGPT and Google Bard, has presented an array of prospective advantages and obstacles [53].

Both Google's Bard and OpenAI's ChatGPT are AI chatbots designed to interact with people through the use of natural language models and machine learning. Both use large language models (LLM), which are machine learning models for generating and creating conversational text. ChatGPT uses generative AI that can generate original content. For example, users can ask it to write a thesis on the advantages of AI. Google Bard can do this too, although it has a slightly different function. Bard is geared towards making searches more natural and rewarding and discovering new information.

One of the bigger differences between the two is that ChatGPT's responses are based on data available through 2021, whereas Google Bard will be based on current and up-to-date data. For ChatGPT to be viable as a search engine technology, it must be able to answer questions with current data, not two-year-old data. OpenAI is aware of the potential for plagiarism with ChatGPT and offers a plagiarism detection tool for educators to catch students using it for homework assignments. So far, there is no knowledge of whether Google Bard has its plagiarism detection tool or not. However, Bard sometimes cites other content in his responses and links to the source.

AI chatbot applications, namely Google Bard and ChatGPT, are now in the main spotlight in the world of

artificial intelligence development. Based on the latest information, Google Bard has several advantages, namely related to updating the database used. Bard can search for information on the internet and process it into new responses. Apart from that, the ability to present responses with the latest time context from Bard is also owned by Microsoft's Bing AI. Meanwhile, ChatGPT's ability to respond is still limited to the time context only until 2021. In terms of generative capabilities, Bard and ChatGPT are both designed to be able to explain complex problems more simply. Both ChatGPT and Bard can distill complex information and multiple perspectives into an easy-to-digest format, but the most obvious difference is Bard's ability to include current events in responses.

AI chatbot applications, namely Google Bard and ChatGPT, are now in the main spotlight in the world of artificial intelligence development. Based on the latest information, Google Bard has several advantages, namely related to updating the database used. Bard can search for information on the internet and process it into new responses. Apart from that, the ability to present responses with the latest time context from Bard is also owned by Microsoft's Bing AI. Meanwhile, ChatGPT's ability to respond is still limited to the time context only until 2021. In terms of generative capabilities, Bard and ChatGPT are both designed to be able to explain complex problems more simply. Both ChatGPT and Bard can distill complex information and multiple perspectives into an easy-to-digest format, but the most obvious difference is Bard's ability to include current events in responses.

## VI. CONCLUSION

Google Bard is an Al-powered chatbot tool designed by Google to simulate human conversations using natural language processing and machine learning. In addition to supplementing Google search, Bard can be integrated into websites, messaging platforms, or applications to provide realistic, natural language responses to user questions. Users can collaborate with Bard to brainstorm ideas, spark creativity, and accelerate writing productivity. Several ways to use Google Bard are: Visit the official website https://Bard.google.com or https://Bard.google.com/chat and make sure that we have logged in to our Google account. A chat room of Bard will open. Type and send prompts (commands/questions). Bard will read the prompts and present the responses. Any commands/questions we have asked Bard can be edited if we are not satisfied with the answers. Bard has alternative answer drafts to be chosen based on the criteria we desire. We can do this by Clicking the "View other drafts" option in the top right corner, and waiting until several draft options appear. Then, click on one of the three drafts we want to review. Search and select the best draft that fits our criteria. The researcher does several trials using Bards. In the first view, it shows "Hi, I'm Bard. Tell me what's on your mind, or pick a suggestion. I have limitations and won't always get it right, but your feedback will help me improve". The researcher asks "Hallo, good afternoon. Can you help me to do my English assignment?", then Bard answer "Bard answers

# International Journal of Computer and Information System (IJCIS) Peer Reviewed – International Journal Vol : Vol. 05, Issue 03, September 2024 e-ISSN : 2745-9659

https://ijcis.net/index.php/ijcis/index

"Yes, I can help you to do your English assignment", then adds several tips for writing an essay and mentions specific types of English assignments i.e essays, research papers, and creative writing assignments. The researcher asks Bard specifically, such as "Can you write English an essay which consists of 1 paragraph about "The Importance of AI in English Language Teaching (ELT)?". Bard answers "Sure, here is a 1-paragraph essay about the importance of AI in English language teaching (ELT). Bards explains the benefits of AI in ELT and also explains AI-powered apps and games in ELT. As stated by Bard "Bard is an experiment". As we try Bard, we need to remember that Bard will not always get it right. Bard may give inaccurate or offensive responses or information that does not represent Google's views. When in doubt, use the Google button to double-check Bard's responses. It is certainly possible to carry out further research to find out about the quality results of English essays written by Bard which include grammar, spelling, punctuation, or other aspects.

## REFERENCES

- [1] A. Baytak, "The Acceptance and Diffusion of Generative Artificial Intelligence in Education: A Literature Review," *Current Perspectives in Educational Research*, vol. 6, no. 1, pp. 7–18, Aug. 2023, Accessed: Oct. 15, 2023. [Online]. Available: https://cuperjournal.org/index.php/cuper/article/vie w/7
- [2] B. Ram and P. Verma, "Artificial intelligence AIbased Chatbot study of ChatGPT, Google AI Bard and Baidu AI," *World J. Adv. Eng. Technol. Sci.*, vol. 8, no. 1, pp. 258–261, Feb. 2023, doi: 10.30574/wjaets.2023.8.1.0045.
- [3] M. Afifah *et al.*, "Pemanfaatan Teknologi Metaverse dalam Komunikasi Layanan Publik," *karimahtauhid*, vol. 2, no. 4, pp. 1212–1228, Aug. 2023, doi: 10.30997/karimahtauhid.v2i4.8875.
- S. K. Singh, S. Kumar, and P. S. Mehra, "Chat GPT & Google Bard AI: A Review," in 2023 International Conference on IoT, Communication and Automation Technology (ICICAT), Jun. 2023, pp. 1–6. doi: 10.1109/ICICAT57735.2023.10263706.
- [5] D. M. West, Comparing Google Bard with OpenAIs ChatGPT on political bias, facts, and morality. Brookings Institution, 2023. Accessed: Oct. 15, 2023. [Online]. Available: https://policycommons.net/artifacts/4140046/comp aring-google-bard-with-openais-chatgpt-onpolitical-bias-facts-and-morality/4948950/
- [6] T. Alqahtani *et al.*, "The emergent role of artificial intelligence, natural learning processing, and large language models in higher education and research," *Research in Social and Administrative Pharmacy*, vol. 19, no. 8, pp. 1236–1242, Aug. 2023, doi: 10.1016/j.sapharm.2023.05.016.
- [7] E. Stevenson, C. Walsh, and L. Hibberd, "Can artificial intelligence replace biochemists? A study comparing interpretation of thyroid function test

results by ChatGPT and Google Bard to practising biochemists," *Ann Clin Biochem*, p. 00045632231203473, Sep. 2023, doi: 10.1177/00045632231203473.

- [8] M. Agarwal, P. Sharma, and A. Goswami, "Analysing the Applicability of ChatGPT, Bard, and Bing to Generate Reasoning-Based Multiple-Choice Questions in Medical Physiology," *Cureus*, vol. 15, no. 6, p. e40977, Jun. 2023, doi: 10.7759/cureus.40977.
- [9] O. Arabiat and H. Alshurafat, "The Integration of Google Bard in Accounting Education: A Viewpoint," SSRN Journal, 2023, doi: 10.2139/ssrn.4566816.
- [10] T. N. Fitria, "The Use Technology Based on Artificial Intelligence in English Teaching and Learning," *ELT Echo: The Journal of English Language Teaching in Foreign Language Context*, vol. 6, no. 2, pp. 213–223, Dec. 2021, doi: 10.24235/eltecho.v6i2.9299.
- T. N. Fitria, "Artificial Intelligence (AI) In Education: Using AI Tools for Teaching and Learning Process," *Prosiding Seminar Nasional & Call for Paper STIE AAS*, vol. 4, no. 1, pp. 134– 147, Dec. 2021, Accessed: Mar. 20, 2023. [Online]. Available: https://prosiding.stieaas.ac.id/index.php/prosenas/article/view/106
- [12] X.-Q. Dao, "Performance Comparison of Large Language Models on VNHSGE English Dataset: OpenAI ChatGPT, Microsoft Bing Chat, and Google Bard." arXiv, Jul. 19, 2023. doi: 10.48550/arXiv.2307.02288.
- [13] I. Ahmed, M. Kajol, U. Hasan, P. P. Datta, A. Roy, and M. R. Reza, "ChatGPT vs. Bard: A Comparative Study," Jul. 2023, doi: 10.13016/m20j3i-lsdp.
- [14] H. B. Ilgaz and Z. Çelik, "The Significance of Artificial Intelligence Platforms in Anatomy Education: An Experience With ChatGPT and Google Bard," *Cureus*, Sep. 2023, doi: 10.7759/cureus.45301.
- [15] O. A. G. Valencia, C. Thongprayoon, C. C. Jadlowiec, S. A. Mao, J. Miao, and W. Cheungpasitporn, "Enhancing Kidney Transplant Care through the Integration of Chatbot," *Healthcare*, vol. 11, no. 18, Art. no. 18, Jan. 2023, doi: 10.3390/healthcare11182518.
- [16] D. Piercey, 50 Strategies for Integrating AI into the Classroom ebook. Teacher Created Materials, 2023.
- [17] M. Marks and C. E. Haupt, "AI Chatbots, Health Privacy, and Challenges to HIPAA Compliance," *JAMA*, vol. 330, no. 4, pp. 309–310, Jul. 2023, doi: 10.1001/jama.2023.9458.
- T. N. Fitria, "Artificial intelligence (AI) technology in OpenAI ChatGPT application: A review of ChatGPT in writing English essay," *1*, vol. 12, no. 1, pp. 44–58, Mar. 2023, doi: 10.15294/elt.v12i1.64069.
- [19] G. Z. Salazar *et al.*, "Efficacy of AI Chats to Determine an Emergency: A Comparison Between

## International Journal of Computer and Information System (IJCIS) Peer Reviewed – International Journal Vol : Vol. 05, Issue 03, September 2024 e-ISSN : 2745-9659

https://ijcis.net/index.php/ijcis/index

OpenAI's ChatGPT, Google Bard, and Microsoft Bing AI Chat," *Cureus*, vol. 15, no. 9, p. e45473, Sep. 2023, doi: 10.7759/cureus.45473.

- [20] V. Plevris, G. Papazafeiropoulos, and A. J. Rios, "Chatbots put to the test in math and logic problems: A preliminary comparison and assessment of ChatGPT-3.5, ChatGPT-4, and Google Bard." arXiv, May 30, 2023. doi: 10.48550/arXiv.2305.18618.
- [21] K. Hallal, R. Hamdan, and S. Tlais, "Exploring the potential of AI-Chatbots in organic chemistry: An assessment of ChatGPT and bard," *Computers and Education: Artificial Intelligence*, p. 100170, Oct. 2023, doi: 10.1016/j.caeai.2023.100170.
- [22] J. Rudolph, S. Tan, and S. Tan, "War of the chatbots: Bard, Bing Chat, ChatGPT, Ernie and beyond. The new AI gold rush and its impact on higher education," *Journal of Applied Learning and Teaching*, vol. 6, no. 1, pp. 364–389, Apr. 2023, doi: 10.37074/jalt.2023.6.1.23.
- [23] M. Kumar, U. A. Mani, P. Tripathi, M. Saalim, and S. Roy, "Artificial Hallucinations by Google Bard: Think Before You Leap," *Cureus*, vol. 15, no. 8, p. e43313, Aug. 2023, doi: 10.7759/cureus.43313.
- [24] F. Sabry, *Chatbot: Fundamentals and Applications*. One Billion Knowledgeable, 2023.
- [25] A. G. Dawson, *Artificial Intelligence and Academic Integrity*. Aspen Publishing, 2023.
- [26] A. Khademi, "Can ChatGPT and Bard Generate Aligned Assessment Items? A Reliability Analysis against Human Performance," *JALT*, vol. 6, no. 1, May 2023, doi: 10.37074/jalt.2023.6.1.28.
- [27] A. Urman and M. Makhortykh, "The Silence of the LLMs: Cross-Lingual Analysis of Political Bias and False Information Prevalence in ChatGPT, Google Bard, and Bing Chat." OSF Preprints, Sep. 08, 2023. doi: 10.31219/osf.io/q9v8f.
- [28] T. N. Fitria, N. E. Simbolon, and A. Afdaleni, "Chatbots as Online Chat Conversation in the Education Sector," *International Journal of Computer and Information System (IJCIS)*, vol. 4, no. 3, Art. no. 3, Aug. 2023, doi: 10.29040/ijcis.v4i3.116.
- [29] S. Ghayyur, J. Averitt, E. Lin, E. Wallace, A. Deshpande, and H. Luthi, "Panel: Privacy Challenges and Opportunities in {LLM-Based} Chatbot Applications," 2023, Accessed: Oct. 15, 2023. [Online]. Available: https://www.usenix.org/conference/pepr23/presenta tion/panel-privacy-challenges-and-opportunties
- [30] A. Kumari *et al.*, "Large Language Models in Hematology Case Solving: A Comparative Study of ChatGPT-3.5, Google Bard, and Microsoft Bing," *Cureus*, vol. 15, no. 8, p. e43861, 2023, doi: 10.7759/cureus.43861.
- [31] A. McGowan *et al.*, "ChatGPT and Bard exhibit spontaneous citation fabrication during psychiatry literature search," *Psychiatry Research*, vol. 326, p. 115334, Aug. 2023, doi: 10.1016/j.psychres.2023.115334.

- [32] A. K. D. Dhanvijay, M. J. Pinjar, N. Dhokane, S. R. Sorte, A. Kumari, and H. Mondal, "Performance of Large Language Models (ChatGPT, Bing Search, and Google Bard) in Solving Case Vignettes in Physiology," *Cureus*, vol. 15, no. 8, p. e42972, Aug. 2023, doi: 10.7759/cureus.42972.
- [33] N. C. Hurley, K. M. Schroeder, and A. S. Hess, "Would doctors dream of electric blood bankers? Large language model-based artificial intelligence performs well in many aspects of transfusion medicine," *Transfusion*, vol. 63, no. 10, pp. 1833– 1840, 2023, doi: 10.1111/trf.17526.
- [34] T. Hana, P. X. Nguyen, P. D. H. Nguyen, L. C. T. Cao, P. Bruneau, and J. Wang, "Evaluation of Google Bard on Vietna mese High School Biology Examination," *ScienceOpen Preprints*, Aug. 2023, doi: 10.14293/PR2199.000327.v1.
- [35] J. Crawford, M. Cowling, S. Ashton-Hay, J.-A. Kelder, R. Middleton, and G. Wilson, "Artificial Intelligence and Authorship Editor Policy: ChatGPT, Bard Bing AI, and beyond," *Journal of University Teaching & Learning Practice*, vol. 20, no. 5, May 2023, doi: 10.53761/1.20.5.01.
- [36] H. Qin, G.-P. Ji, S. Khan, D.-P. Fan, F. S. Khan, and L. V. Gool, "How Good is Google Bard's Visual Understanding? An Empirical Study on Open Challenges," *Mach. Intell. Res.*, vol. 20, no. 5, pp. 605–613, Oct. 2023, doi: 10.1007/s11633-023-1469-x.
- [37] R. J. M. Ventayen, "OpenAI ChatGPT, Google Bard, and Microsoft Bing: Similarity Index and Analysis of Artificial Intelligence-Based Contents," *SSRN Journal*, 2023, doi: 10.2139/ssrn.4532471.
- [38] J. Powell and A. Kleiner, *The AI Dilemma:* 7 *Principles for Responsible Technology.* Berrett-Koehler Publishers, 2023.
- [39] M. L. Magruder, R. E. Delanois, J. Nace, and M. A. Mont, "ChatGPT and Other Natural Language Processing Artificial Intelligence Models in Adult Reconstruction," *The Journal of Arthroplasty*, vol. 38, no. 11, pp. 2191–2192, Nov. 2023, doi: 10.1016/j.arth.2023.06.030.
- [40] J. Singh, Natural Language Processing in the Real World: Text Processing, Analytics, and Classification. CRC Press, 2023.
- [41] E. R. Monsen and L. V. Horn, *Research: Successful Approaches*. American Dietetic Association, 2007.
- [42] S. M. Madondo, Data Analysis and Methods of Qualitative Research: Emerging Research and Opportunities: Emerging Research and Opportunities. IGI Global, 2021.
- [43] M. Savin-Baden and C. H. Major, *Qualitative Research: The Essential Guide to Theory and Practice.* Taylor & Francis, 2023.
- [44] K. Bhattacharya, *Fundamentals of Qualitative Research: A Practical Guide*. Routledge, 2017.
- [45] M. B. Miles, A. M. Huberman, and J. Saldana, *Qualitative Data Analysis: A Methods Sourcebook*. SAGE Publications, 2018.

### International Journal of Computer and Information System (IJCIS) Peer Reviewed – International Journal Vol : Vol. 05, Issue 03, September 2024 e-ISSN : 2745-9659

https://ijcis.net/index.php/ijcis/index

- [46] D. Anderson, *ChatGPT Prompt Engineering Mastery Playbook.* Estalontech, 2023.
- [47] S. M. Siad, "The Promise and Perils of Google's Bard for Scientific Research," *Humanities Commons*, 2023, doi: 10.17613/yb4n-mc79.
- [48] E. Waisberg *et al.*, "Google's AI chatbot 'Bard': a side-by-side comparison with ChatGPT and its utilization in ophthalmology," *Eye*, pp. 1–4, Sep. 2023, doi: 10.1038/s41433-023-02760-0.
- [49] C. Merow, J. M. Serra-Diaz, B. J. Enquist, and A. M. Wilson, "AI chatbots can boost scientific coding," *Nat Ecol Evol*, vol. 7, no. 7, Art. no. 7, Jul. 2023, doi: 10.1038/s41559-023-02063-3.
- [50] S. Bhardwaz and J. Kumar, "An Extensive Comparative Analysis of Chatbot Technologies -ChatGPT, Google BARD and Microsoft Bing," in 2023 2nd International Conference on Applied Artificial Intelligence and Computing (ICAAIC), May 2023, pp. 673–679. doi: 10.1109/ICAAIC56838.2023.10140214.
- [51] N. S. Patil, R. S. Huang, C. B. van der Pol, and N. Larocque, "Comparative Performance of ChatGPT and Bard in a Text-Based Radiology Knowledge Assessment," *Can Assoc Radiol J*, p. 08465371231193716, Aug. 2023, doi: 10.1177/08465371231193716.
- [52] Z. W. Lim *et al.*, "Benchmarking large language models' performances for myopia care: a comparative analysis of ChatGPT-3.5, ChatGPT-4.0, and Google Bard," *eBioMedicine*, vol. 95, Sep. 2023, doi: 10.1016/j.ebiom.2023.104770.
- [53] A. A. Rahsepar, N. Tavakoli, G. H. J. Kim, C. Hassani, F. Abtin, and A. Bedayat, "How AI Responds to Common Lung Cancer Questions: ChatGPT versus Google Bard," *Radiology*, vol. 307, no. 5, p. e230922, Jun. 2023, doi: 10.1148/radiol.230922.
- [54] B. N. Coskun, B. Yagiz, G. Ocakoglu, E. Dalkilic, and Y. Pehlivan, "Assessing the accuracy and completeness of artificial intelligence language models in providing information on methotrexate use," *Rheumatol Int*, Sep. 2023, doi: 10.1007/s00296-023-05473-5.
- [55] F. Y. Al-Ashwal, M. Zawiah, L. Gharaibeh, R. Abu-Farha, and A. N. Bitar, "Evaluating the Sensitivity, Specificity, and Accuracy of ChatGPT-3.5, ChatGPT-4, Bing AI, and Bard Against Conventional Drug-Drug Interactions Clinical Tools," *Drug, Healthcare and Patient Safety*, vol. 15, pp. 137–147, Dec. 2023, doi: 10.2147/DHPS.S425858.
- [56] P. Nguyen, P. Nguyen, P. Bruneau, L. Cao, J. Wang, and H. Truong, "Evaluation of Mathematics Performance of Google Bard on The Mathematics Test of the Vietnamese National High School Graduation Examination." TechRxiv, Jul. 20, 2023. doi: 10.36227/techrxiv.23691876.v1.
- [57] P. Moons and L. V. Bulck, "Using ChatGPT and Google Bard to improve the readability of written patient information: a proof of concept," *European*

Journal of Cardiovascular Nursing, p. zvad087, Aug. 2023, doi: 10.1093/eurjcn/zvad087.

- [58] M. Gupta, C. Akiri, K. Aryal, E. Parker, and L. Praharaj, "From ChatGPT to ThreatGPT: Impact of Generative AI in Cybersecurity and Privacy," *IEEE Access*, vol. 11, pp. 80218–80245, 2023, doi: 10.1109/ACCESS.2023.3300381.
- [59] N. Pandey, "Future of Employer Branding in the Era of Bard, ChatGPT, Metaverse and Artificial Intelligence," *NHRD Network Journal*, vol. 16, no. 3, pp. 258–268, Jul. 2023, doi: 10.1177/26314541231170434.