



## The Use of Multimodal Discourse Analysis to Study the Relationship Between Visual, Lingual, and Written Text of Artificial Intelligence in TED (Technology, Entertainment, and Design) Talks YouTube Channel

Ferry Hadriyan<sup>✉</sup>, Januarius Mujiyanto, Dwi Rukmini

Universitas Negeri Semarang, Indonesia

### Article Info

#### Article History:

Accepted 09 May 2022

Approved 04 July 2022

Published 23

December 2022

#### Keywords:

Multimodal Discourse Analysis, Artificial Intelligence, Visual, Lingual, Written Text

### Abstract

This study was aimed to discover the types of processes used Multimodal Discourse Analysis (MDA) to study the relationship between Visual, Lingual, and Written text, and how they influence the authors to analyze of Artificial Intelligence Video' Alexandr Wang speech in TED (Technology, Entertainment, and Design) talks YouTube channel. Artificial intelligence is a set of sciences, theories, and techniques whose purpose is to reproduce by a machine the cognitive abilities of a human being. Machine-based systems can give a set of human-defined objectives and make predictions, recommendations, or decisions that influence real or virtual environments. AI systems interact with us and act on our environment directly or indirectly. Often, they appear to operate autonomously and can adapt their behavior by learning about the context, (UNICEF 2021: 16). AI systems are algorithmic models that carry out cognitive or perceptual functions in the world that were previously reserved for thinking, judging, and reasoning human beings. (Leslie et al. 2021: 8). MDA is a term that is used to refer to the way people communicate using different modes at the same time (Kress & van Leeuwen, 1996), which is defined as the use of several semiotic methods in product design, or semiotic events simultaneously, and in a certain way these modes combined with strengthening, compliment, or be in a certain arrangement (Kress and van Leeuwen, 2001).

<sup>✉</sup>Correspondence Address:

Jl. Kelud Utara III No.15, Kel. Petompon, Kec. Gajahmungkur,  
Kota Semarang, Jawa Tengah 50237

E-mail : fhadriyan@gmail.com

**p-ISSN 2087-0108**

**e-ISSN 2502-4566**

## INTRODUCTION

At this time, artificial intelligence, called AI, is developing very fast. AI can create text and answer all that we ask, AI can create images with just typing command prompts, AI can make design presentations and design layouts with just typing commands, AI can even be used in the world of education, just like supervising students in learning, student response activities, student achievement scores, even all activities carried out by students in class, so there is no more privacy for these students. Lately, AI has taken over the creative world and design, so I have almost been replaced and lost to AI. Will AI completely replace humans one day? Some AI can already be used: Scale AI for mapping areas, people, military, education, business, and e-commerce. Open AI in Chat GPT can be used in textual communication and active chat like humans. This AI will answer all questions in continuous communication and is relevant in context. Stable Diffusion, Mid Journey, AI that can take pictures by giving orders in a prompt or typing. Those are some of the AI popular today for authors, and there are many more AI advancing very fast.

In this paper, the author describes a problem created by AI. Technological changes are so fast, and we, especially as educators, must be able to adapt to AI. Do we give up, or are we friends with AI. AI is just a tool that makes things easier for humans, and it's up to humans to react to it. Artificial intelligence in today's world is rapidly evolving with new and advanced technological innovations every day. Artifacts exercise artificial intelligence, and systems are generally considered computers. AI systems are used daily in business, medicine, engineering, the military, education, and many more. AI is used in common problems such as pattern recognition and natural language processing. This system works all over the world as an artificial brain. Intelligence contains mechanisms, and AI research has revealed how to make computers do some of them and not others. Computer programs can perform very impressively on those tasks if they require only currently well-understood mechanisms. Therefore, related to

the similar task of using computers to understand human intelligence.

According to (Wallace, 2021), intelligence is an overall mental capacity for thinking, critical thinking, and learning. Because of its general nature, knowledge coordinates psychological capacities, for example, perception, attention, memory, language, or planning. Human intelligence revolves around adjusting to the climate utilizing a mix of a few intellectual cycles. Artificial Intelligence centers on planning machines that can copy human conduct. This way, the simple capacity to copy human conduct is considered Artificial Intelligence. Artificial Intelligence (AI) is the capacity of a PC program or a machine to think and learn. So, the future goal of AI is to make everything perfect. It improves human activity and provides better solutions to problems than humans can. In the long run, automated. Systems that take over all human functions, from automobile control to computerized business systems and tasks. (Bhattacharya & Pal, 2020). Artificial Intelligence (AI) could be defined as the ability of computer software ware and hardware to do things we, humans, recognize as intelligent behavior. (I. Ali, 2013).

The education system in organizational leadership has changed because technology is getting more advanced every day and has transformed the economy and Society to digitalization. To survive, organizations should prepare and follow its changes (Harto et al., 2022). The 21st-century skills are vital for the rapidly changing work environments (Luckin et al., 2016; Van Laar et al., 2017) and the future age of artificial intelligence (AI). Education must prepare students to contribute well to the forthcoming digitalization and automation. Individuals must solve complex problems with innovative reasoning, disciplined thinking about vast amounts of knowledge, and collaboration (Woolf, 2010a). Unfortunately, the current education system has some flaws and was designed to meet the demands of the industrial economy, developing the skills valuable in a society of industries, bureaucracies, and ledger ink rather than to prepare students for the

growing age of automation (Seldon & Abidoeye, 2018; Andreas Schleicher, 2018), According by (Channa & Education, 2021). Educators can manually examine and grade the exercises or by using automated tools. Automated tools significantly reduce the effort required for such a task, especially when there are a significant number of students; however, they are usually limited to a quantitative evaluation and cannot provide specialized feedback to the students (Douce et al. 2005), according by (Samarakou et al., 2014).

One of the basic human rights is the right to education. However, accessibility has always been a great challenge to this, given the limitations of remote learning programmers. With the increase in global online connectivity and the development of AI, quality education through remote learning is constantly improving (4). AI-based language translation also plays a major role in reaching indigenous groups in third-world countries and providing material in users' language. (Tahiru & Agbesi, 2021). Artificial intelligence (AI), a machine-based method that uses algorithms to make decisions, diagnoses, and recommendations, has grown in importance within the educational community for its potential to support learning in diverse contexts in recent years (Hwang et al., 2020a). The field of AI in education (AIEd) has demonstrated technological advances, theoretical innovations, and successful pedagogical impact (Roll & Wylie, 2016), with diverse applications such as intelligent tutors for content delivery, feedback provision, and progress supervision (Bayne, 2015). The affordances of AIEd are widely recognized. AI can provide specialized support and raise knowledge-gap awareness, enabling instructors to teach effectively and efficiently through personalized and adaptive instruction (Guan et al., 2020). AI also provides algorithm-based decisions which enable effective real-time assessment of complex skills and knowledge (Chen et al., 2021). Additionally, AI-empowered educational systems can be used to analyze classroom dynamics and student engagement, which in turn helps to identify at-risk students in

real-time mode, thus enabling timely intervention (Tsai et al., 2020), according to (Campbell, 2022).

Meanwhile, in analyzing the data, the researcher employed a systemic functional approach to multimodal discourse analysis (SF-MDA) proposed by O'Halloran (2008) and Kress and Leeuwen (2006) to analyze the meaning of the pictures or visual imagination displayed in the visual textbook and also displayed in multimedia used as the pedagogical tools, (As'ari, 2017). According to Fraenkel et al. (2012, p. 423), qualitative research is a research methodology that refers to studies investigating the quality of relationships, activities, situations, or materials. This study uses qualitative research in discourse analysis to picture the framework of visual grammar (Kress & Leeuwen, 2006). the research uses qualitative research in line with Creswell (2009: 156), who states that "qualitative research is a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem." (Farida et al., 2018). Learners may therefore require direction and particular metalanguage to read these multimodal texts to benefit from those affordances. Cited from Unsworth, 2006, p. 1165, 1202; language teachers should play important roles in giving instructions to their children to make sense of and explore the visual and verbal resources in the texts, which is the "image-text relations" or the "co-articulation of image-verbiage." Thus, based on those pedagogical interests, this research aims to contribute to the discussions regarding image analysis to foster learning, more specifically, learning English as a foreign language. As cited by Christie, 2005; Heberle, 2010; Unsworth, 2001, 2013; the analysis of images is necessary because communication is increasingly multimodal, especially in educational contexts (Nisak & Rukmini, 2021), In their research paper Mullen and Wedwick (2008) say that modern technology should be implemented into classroom instruction in order for students to develop the skills needed in our new digital society (Alias et al., 2013).

This research resources taking from YouTube videos. YouTube is a multidimensional

resource that offers easily accessible videos in all areas of knowledge. YouTube technology can be considered a valuable learning tool as more and more research has shown significant findings driving the integration of YouTube video clips in education. As Mayer has mentioned earlier, video is very effective, especially for introductory courses, because it can facilitate difficult concepts and attract students' attention (Mayer, 2001), according to (Anggrarini & Faturokhman, 2021). This video was taken by Alexandr Wang on the TED YouTube channel. Alexandr Wang is the CEO of Scale AI, the startup he cofounded in 2016 to help companies use their raw data for AI and machine learning. The California-based outfit helps some 300 clients, including General Motors and Flexport, on projects like autonomous driving and supply chain efficiency. Wang, just 25, is the world's youngest self-made billionaire; he owns an estimated 15% of Scale, which investors valued at \$7.3 billion in 2021. The New Mexico native landed full-time engineering jobs in Silicon Valley at age 17 with fintech Addepar and then the question-and-answer site Quora. At age 19, after a brief stint at MIT to study machine learning, Wang dropped out to attend the Y Combinator accelerator and launch Scale. And research interests are remote sensing of arctic, boreal and urban ecosystems, land cover, and surface climatology. High-performance computing, machine learning, and time series analysis. Field methods in environmental and ecological sciences; thermal remote sensing; sun-induced fluorescence, according to <https://www.forbes.com/profile/alexandr-wang> and journal (Wang, 2019).

According to (Mujiyanto, 2019), the text is in the form of verbal language and non-verbal images such as audio, visual, and gestural. Translation studies must explore these images. They must be able to explain phenomena that arise from the transfer of verbal text into visual images, audio images, gestural images, and vice versa, and so on. Therefore, there has been a shift in the research focus on translation. In other words, translation studies have expanded their fields, including linguistic, visual, gestural,

digital, and other translations. In discourse analysis, verbal and visual elements are used in analyzing advertisements using a multimodal approach (Lubis et al., 2014). Advertisements, as an example of discourse, can generally be separated into three broad groups: print advertisements (magazines, newspapers, and other print advertisements), audio (radio), and audio-visual (TV and internet sites) advertisements (Srikandiati & Luluk 2015). According to Kress and Van Leeuwen (2006), multimodal discourse analysis quickly develops new research areas, according to (Azkiyah et al., 2021). In writing this final project, according to the TED YouTube channel, "Why AI will never replace humans by Alexandr Wang on TED talks,

<https://www.youtube.com/watch?v=iXCmoQDEoe4>. The writer chose the topic, "The Use of Multimodal Discourse Analysis to Study the Relationship Between Visual, Lingual, and Written Text of Artificial Intelligence in TED (Technology, Entertainment, and Design) Talks YouTube Channel".

The main concerns are creating sustainable solutions in real environments, building high-quality, comprehensive systems for data education, and data quality. Make AI research relevant in education, while one can reasonably expect AI research in education will increase. The education sector had an education inventory and important research for practice and policy-making. AI raises many ethical concerns related to access to educational systems, referrals to individual students, centralization of personal data, liability, impact on work, privacy, and more. Regulation of AI, therefore, requires a public debate on ethics, accountability, transparency, and safety. In this age of big data, we all leave behind individual information footprints, resulting in an abundance of data, allowing human and societal behavior to be objectively quantified and, therefore, easily tracked, modeled, and to a certain extent, predicted. This phenomenon surrounding information footprints is referred to as 'datafication' (Mayer-Schönberger & Cukier,

2014) and also affects the education sector. (Unesco, 2019).

### **Multimodal Discourse Analysis**

Multimodal is a term that is used to refer to the way people communicate using different modes at the same time (Kress & van Leeuwen, 1996), which is defined as the use of several semiotic methods in product design, or semiotic events simultaneously, and in a certain way these modes combined with strengthening, compliment, or be in a certain arrangement (Kress and van Leeuwen, 2001), according to (Al Fajri, 2018). Multimodal learning refers to an embodied learning situation involving multiple sensory systems and learner action systems (Lustyantje & Arung, 2020; Massaro, 2012), according to (Djamdjuri et al., 2021). This phenomenon of multimodality is not new. Conversation, for example, was always multimodal; we resort to several modes beyond language – gestures, gaze, posture, and proxemics – to make meaning. Jewitt (2008) claims that the way knowledge is represented, along with the mode and media chosen, is a crucial aspect of knowledge construction that makes the form of representation a full part of the meaning and learning more generally, according to (Moro et al., 2019). Digital-based learning media is presented in multi-mode or multi-media or multimodal, which is a technique in the learning process by utilizing various kinds of resources (writing, images, sound, movement, etc.) with the aim of helping students easily learn and understand. Something (Faishol et al., 2021; Muzammil & Salwa, 2016), according to (Nurviyani et al., 2022).

As pointed out by Kramersch (2013), the semiotic perspective is based on the postmodernist view and analyses the inclusion of cultural dimensions in learning materials in a dynamic manner. It also draws on interactive, multimodal considerations. Indeed, this approach views culture as a discourse, or what is known as a social semiotic construction (Liu, 2022). Bezemer and Kress (2016) proposed the social semiotic multimodal approach, which this study uses to analyze how *ateji* produces meaning

in manga and how translators use available multimodal resources in the target social context to translate. This approach provides comprehensive concepts for systematic analysis; the ones adopted in this study are sign maker, motivated signs, modes, semiotic resources, modal affordances, multimodal ensembles, interest, agency, social change, transformation, and transduction. Sign maker refers to a sign's producer and interpreter, and interpreting is the remaking of a sign (Jewitt, Bezemer, and O'Halloran 2016), according to (Chow, 2021). Kress pays much attention to the pragmatics of communication: sign-maker issues a "prompt" (e.g., a gaze, a gesture, a spoken sentence, a touch) to an addressee or audience; the latter will then start interpreting the sign and respond to the prompt in accordance with their own interest. This approach is commensurate with the Relevance Theory model (Sperber and Wilson 1995, Wilson and Sperber 2004, Forceville 1996: chapter 5, 2005, 2009), according to (Forceville, 2011).

Regarding the multimodal discourse analysis (MDA), it is defined by O'Halloran (2011) as "the study of language per se to the study of language in combination with other resources, such as images, scientific symbolism, gesture, action, music and sound", it means that different discourse analysis framework can be combined for a better interpretation of the discourse. Therefore, I will analyze this video with systemic functional linguistics and visual semiotic frameworks, which are explained in the following sections. Multimodality can also be said as a "technical term that aims to show that the meanings we have used so far have made use of various semiotics" (Iedema, 2003). While Chen (2010) interprets multimodality as "Understanding how verbal and visual semiotic resources can be used to realize the types and levels of dialogic engagement, dialogic involvement in a textbook" (Hermawan, 2013). Multimodal discourse analysis is a new study in discourse studies to study text combined with images, colors, symbols, and other semiotic sources. The text and the semiotic resources are used to represent meaning, according to (Permata

Yanda, 2018). According to Paltridge (2012), Multimodal Discourse Analysis deals with how texts draw on modes of communication such as pictures, film, video, images, and sound in combination with words to make meaning (2012). Discourse analysis studies how stretches of a language used in communication assume meaning, purpose, and unity for their users: the quality of coherence (Johnson & Johnson, 1998), according to (Susanto et al., 2021). The focus of Multimodal Discourse Analysis is that readings are constructed not just by the use of words but by the combination of words with other modalities, such as pictures, film, video images, and sound (Paltridge, 2012), according to (Oey, 2019) and the use of several semiotic modes in product design, or semiotic events simultaneously, and in a certain way these modes are combined with strengthening, compliment, or be in a certain order (Kress and van Leeuwen, 2001), according to (Al Fajri, 2018).

#### **Language, Image, and Sound.**

Language is a system of systems in itself and also, at the same time, a system of systems embedded in higher-level systems, that is, its context. As Sinar (2011) said, the act of language as actual is essentially an act of meaning both at the textual and contextual levels, according to (Lubis, Duma Sari, T. Silvana Sinar, 2014). The orchestration of the linguistic, visual, and music selections function to foreground sure logical, experiential, and interpersonal meanings, which co-contextualize each other to powerfully communicate the meaning of the 'Dreams' advertisement where 'the emphatic climax that creates the desired impact' (O'Halloran, Tan and E 2013). according to (Norris et al., 2014). Languages change all the time, irrespective of whether we are aware of this or not. For instance, all the computer and internet terminology which we use all the time now did not exist some twenty years ago, simply because a browser and downloading did not yet exist in people's lives, and a mouse meant a totally different kind of thing, a small grey animal and not a pointing and clicking device (Schneider 2011, according to (Epoge, 2012). Digital-based learning media is

presented in multi-mode or multi-media, or multimodal, which is a technique in the learning process by utilizing various kinds of resources (writing, images, sound, movement, etc.) with the aim of helping students easily learn and understand something (Faishol et al., 2021; Muzammil & Salwa, 2016), according to (Nurviyani et al., 2022).

#### **Artificial Intelligence in Education**

The various connections between AI and education include what might be called "learning with AI," "learning about AI," and "preparing for AI." Learning with AI has also been called "artificial intelligence for education." According to (Wayne Holmes et al., 2022). The nature of technology has changed since a few years later Artificial Intelligence in Education (AIE) was conceptualized as a separate research community. AI techniques in education were claimed to create powerful learning environments and to increase positive interactive experiences for all students, according to (Hopcan et al., 2022).

An academic field of inquiry established in the 1980s primarily researches AI tools to support learning (i.e., learning with AI). According to (Wayne Holmes et al., 2022). AI will play a very important role in teaching and learning these new skills. In one dimension, 'AIED' has the potential to dramatically automate and help track the learner's progress in all these skills and identify where best a human teacher's assistance is needed. For teachers, AIED can potentially be used to help identify the most effective teaching methods based on students' contexts and learning background, according to (M. Ali & Emre, 2022).

#### **METHOD**

The researcher analyzed the Multimodal Discourse Analysis on YouTube Videos. The writer has explained that some AI would be discussed in a presentation about artificial intelligence, "Why AI will never replace humans by Alexandr Wang on TED x Berkeley." However, the author focuses on analyzing Video, Spoken, and Written Text between visual, verbal,

and textual on Youtube Videos. Multimodality refers to a combination of writing, speaking, visualization, sound, music, and many others for communication purposes (Ventola et al. in Kristina, 2018). The major strength of SF theory for MDA is Halliday's (1978, 2004) meta functional principle which provides an integrating platform for theorizing how semiotic resources interact to create meaning (e.g., Baldry and Thibault, 2006a; Kress and Van Leeuwen, 2006; Van Leeuwen, 1999, 2005).

The researcher determines that the descriptive qualitative research design is appropriate for this study. According to (Creswell, 1991), qualitative research is a type of research in which the researcher interprets the data using a non-experimental data collection method. The method that is used in this study is a descriptive qualitative method that uses a Multimodal Discourse Analysis (MDA) as an approach. The theory of multimodality by Kress and Van Leeuwen and the theory of systemic functional grammar by Halliday and Matthiessen, were applied to analyze the data (Technology, 2022). The researchers analyzed the data descriptively, and the result was in the form of an explanation. The multimodal analysis model was developed from a combination of multimodal theory (Anstey, M., & Bull, 2010) and multimodal analysis by Kress & Van Leeuwen, cited in (Bo, 2018). To analyze the data, the researchers carried out some stages, for instance, analyzing the linguistic, visual, audio, gesture, and spatial in the advertisement, interpreting the codes, writing the findings, and concluding the results. Machin & Mayr (2012) explained qualitative data analysis techniques:

- (1) Data documentation and data collection method,
- (2) Data organization/categorization into concepts,
- (3) Data link to show how one definition may influence another,
- (4) Corroboration/legitimization by testing alternative interpretations,
- (5) Disconfirming facts and looking for negative cases representing the account (reporting the findings), according to (Raharjo et al., 2020).

The researcher focused of this research is "Why AI will never replace humans by Alexandr Wang on TED x Berkeley." However, the author focuses on analyzing Video, Spoken, And Written Text on YouTube Videos. Multimodality combines writing, speaking, visualization, sound, music, and many others for communication purposes (Ventola et al. in Kristina, 2018). Alexandr wang explained that Artificial Intelligence will never replace humans, and he described how AI functions and how it impacts many spheres, including the industrial sector, society, and even education. The author intends to clarify how AI can be applied to the teaching and learning process and how teachers will learn with AI in the future.

**RESULTS AND DISCUSSIONS**



The writer found data analyst from video the AI in TED talks YouTube channel is realized in visual stages. Speech of Alexandr Wang talk about "why AI will never replace humans". And data from previous studies about artificial intelligence and multimodal discourse analysis in YouTube videos.

**Video Visual**

The appearance (visual) of video in the AI in TED talks YouTube channel is realized in visual stages. Speech of Alexandr Wang talk about "why AI will never replace humans", from intro into outro row by row of video.

**Table 1.** Visual video analysis

No.	Picture	Description
1.		Intro
2.		Alexandrs background

3.		AI at MIT (Massachusetts Institute of Technology)	
4.		Data bottleneck	
5.		Core setup of AI	
6.		Why AI will never replace human	
7.		AI in healthcare	
8.		Conclusion	
9.		Outro	

The writer has taken pictures part by part of Alexandr Wang's speech, to be transcribed into text. from opening to closing, I carefully analyze the verbal and nonverbal language in Alexandr Wang's video speech.

**1) Intro**

Alexandr Wang start says on opening, “When most people think about AI.” AI is not like fiction story, he says, “Terminator, Skynet, Black Mirror, Blade Runner, Westworld.” and therefore he actually inspired to start an AI company. That and he is background have had a huge impact on Alexandr Wang, and why he has started AI Scale.





Figure 1. Visual Intro

## 2) Alexandrs Background

Alexandr Wang parents were brilliant scientists of Los Alamos, who made meaningful contributions to plasma fluid dynamics and the beginnings of the universe. That is why he decided to become a programmer, and learn about artificial intelligence (AI).



Figure 2. Visual Alexandrs Background

## 3) AI at MIT (Massachusetts Institute of Technology)

Alexandr Wang was studying AI at MIT (Massachusetts Institute of Technology), he learns applications of AI for solving more



nuanced problems. where I worked on applying AI to human emotions. The goal was to take picture of human expressions and ultimately identify and understand the emotion through very subtle signals in facial expressions. In 2016, he learns electrical engineering majors are building robots.



Figure 3. studying AI at MIT (Massachusetts Institute of Technology)

#### 4) Data Bottleneck

He discovered what a bottleneck data can be to building meaningful and powerful AI systems. Building large-scale, high-quality datasets to power every single application. This was the impetus behind starting Scale: quality data, to create reliable AI outcomes, requires human insight and guidance.





### 5) Core Setup of AI

Alexandr Wang said, "If you think about the core setup of AI, the algorithms need data, and data needs humans." The constant alignment of AI to human intentions will always require humans, and human ideas and creativity can actually matter much more, with the power of AI behind them.



Figure 4. Data Bottleneck



Figure 5. a Core Setup of AI

### 6) Why AI will Never Replace Human

The long tale of real-world problems, and the fact that there is always unknown unknowns means that humans will never be fully removed from the AI development lifecycle. Much more so than Terminator or Westworld. That is again why I think AI will be a supercharger for humanity. Unlike the movies, AI developers aren't focusing their attention on building replacements for humans.



Figure 6. AI will Never Replace Human

### 7) AI in Healthcare

A good example about how AI can be used in practice is health care. According to the Association of American Medical Colleges, the United States could see an estimated shortage of between 38,000 and 124,000 physicians by 2034. AI could save doctors' time with rogue tasks and ultimately enable them to serve more patients and help more people. Health care is full of repetitive tasks which are right for AI. When a patient is sick, they go through all kinds of tests which produce all sorts of data: blood tests, imagery, lab results, X-rays, etc. Doctors then analyze all this data to make decisions about a case. AI can analyze all this data proactively and go through a list of possibilities by cross-referencing against all prior data in cases.



Figure 6. AI in Healthcare

Another good example, and potentially more concrete, is the Russia-Ukraine war. We've all seen the images of tanks lining up ready to enter Kiev. AI can help assess satellite imagery with superhuman speed and precision, so Ukrainian forces can respond faster.

At Scale, we're using our platform to do damage assessment in key areas affected by the war. We have rapidly analyzed over 2,000 square kilometers of Ukraine, identifying over 370,000 structures, including thousands not previously available via other datasets.

We focused on Kiev, Kharkiv and Dnipro, in which we provided some data directly to government and users. We also made the data publicly available to the broader AI community via Scale.

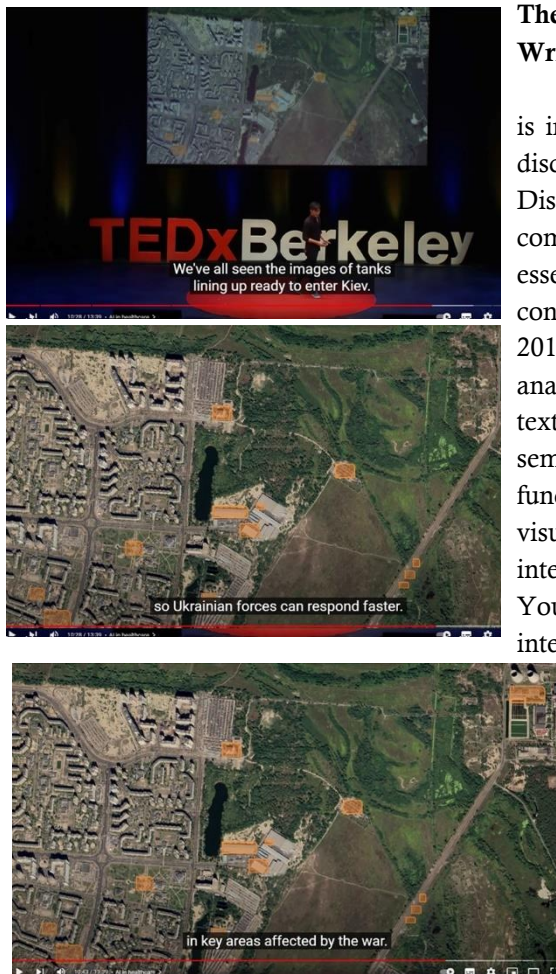


Figure 7. AI community via Scale.

We can also use this data to maximize allocations of resources, people or commodities. It is clear satellite data can be extremely useful in these types of situations. Thanks to satellite data, AI can analyze if planes or tanks have been moved from one place to another. This is called change detection. Algorithms can constantly be monitoring for this kind of data, and if it notices a change or movement, it will alert a human to further investigate, otherwise known as predictive modeling. AI can also help us understand the economic impacts of war. We can use AI to track farmland in Ukraine and measure the agricultural damage in real time. Ukraine is a major food supplier for much of the world. Understanding these impacts is absolutely critical.

### The Correlation Between Visual, Lingual and Written text

The correlation between these three things is indeed very related in the use of multimodal discourse analysis (MDA). Multimodal Discourse Analysis emphasizes that all tools of communication, such as verbal and nonverbal are essential in generating meaning because language contains informative meanings. (O'Halloran, 2011) states that multimodal analysis includes analysis of all types of communication that have text interactions and integration of two or more semiotic sources to achieve the communication function of the text. the writer after analyzing the visual, lingual, and written text of study artificial intelligence Alexandr Wang in the TED talk YouTube channel. finding harmony and interrelationships, Alexandr Wang conveys AI directly, what are the consequences, in terms of every in his speech starting from the intro, Alexandr's background, AI at MIT (Massachusetts Institute of Technology), Data Science, Core setup of AI, Why AI will never replace human, AI in healthcare, Conclusion, Outro. All the words, the manner in which they are conveyed, the verbal and non-verbal language, are in accordance with the facts.

My research when compared to research on multimodal discourse analysis is very much,

but only a few discuss AI in linguistics. As many educational institutions are based on "factory model education", they pay attention to a limited range of human intelligence and potential (Seldon & Abidoeye, 2018) and hardly inculcate 21st-century skills into learners. However, with the advent of AI-Ed, learners will develop modern skills and realize their multiple intelligence (Seldon & Abidoeye, 2018). AI learning systems have great potential to promote 21st-century skills among learners by helping them develop a growth mindset. so, use AI wisely to maximize the benefits of AI itself.

### **Speech of Alexandr Wang**

Alexandr Wang explaining artificial intelligence, whether AI will never replace humans, with gestures and how to convey it in a relaxed, detailed and firm manner. that AI will indeed replace humans but not completely, because AI can help humans work more quickly and efficiently. he explained the many benefits that are used, be it in the fields of education, health, military, business or non-profit. In language, he invites the audience to be wiser in responding to technological updates that are so fast, and to be able to make the most of AI, and not to think that AI is a fear that will threaten and replace the role of humans. In my experience as the writer of this research, in 2022 artificial intelligence start growing very rapidly, from how to change a work system that is practical and efficient. There are several AIs that are very popular, such as Open AI, which released a product called "CHAT GPT (Generative Pre-training Transformer)", where this AI can answer anything when the user asks and is always in tune and connected with the previous question. as we usually chat with someone, unlike Google which only answers based on data on existing websites, chat GPT immediately answers instantly, quickly, and precisely. On the negative side, many writers feel unrivaled because of this. There is an AI that can command by typing or is called "PROMPT" which can be an image, illustration, logo, etc. The AI is called "MIDJOURNEY", "STABLE DIFFUSION", which is so popular now, and AI SCALE which was invented by

Alexandr Wang himself, can analyze an area, analyze health, business, weather, etc. I think AI has positive and negative sides, and it's up to each of us how to use AI wisely.

### **Artificial Intelligence (AI) in Education**

AI in education has so many benefits to assist in learning and teaching activities. Teachers can take advantage of AI to get information so quickly. According to (Wallace, 2021), intelligence is an overall mental capacity for thinking, critical thinking, and learning. Because of its general nature, knowledge coordinates psychological capacities, for example, perception, attention, memory, language, or planning. Human intelligence revolves around adjusting to the climate utilizing a mix of a few intellectual cycles. Artificial Intelligence centers on planning machines that can copy human conduct. This way, the simple capacity to copy human conduct is considered Artificial Intelligence. The education system in organizational leadership has changed because technology is getting more advanced every day and has transformed the economy and Society to digitalization. To survive, organizations should prepare and follow its changes (Harto et al., 2022). The 21st-century skills are vital for the rapidly changing work environments (Luckin et al., 2016; Van Laar et al., 2017) and the future age of artificial intelligence (AI). Education must prepare students to contribute well to the forthcoming digitalization and automation. Individuals must solve complex problems with innovative reasoning, disciplined thinking about vast amounts of knowledge, and collaboration (Woolf, 2010a).

### **CONCLUSION**

From the finding and analysis, the researcher has concluded that my current study is new thing about artificial intelligence, from previous study rarely object to analyses about artificial intelligence. The analysis also shows that all semiotic systems in this study artificial intelligence in TED talk YouTube channel, emphasize on the characteristics each of the

visual, lingual, and written text to make them unique to the audience. The analysis also shows that there are three conclusions found in this speech of AI in TED talk YouTube video.

## REFERENCES

- Al Fajri, T. A. (2018). Pentingnya penggunaan pendekatan multimodal dalam pembelajaran. *WASKITA: Jurnal Pendidikan Nilai Dan Pembangunan Karakter*, 2(1), 57–72.
- Ali, I. (2013). Artificial life with artificial intelligence. *International Journal of Engineering Sciences & Research Technology*, 2(3), 1–6.
- Ali, M., & Emre, C. (2022). Artificial intelligence in education ( AIED ): A high - level academic and industry note 2021. *AI and Ethics*, 2(1), 157–165.
- Alias, N., Razak, S. H. A., ElHadad, G., Kunjambu, N. R. M. N. K., & Muniandy, P. (2013). A content analysis in the studies of YouTube in selected journals. *Procedia - Social and Behavioral Sciences*, 103, 10–18.
- Azkiyah, I., Hidayat, D. N., Alek, A., & Dewi, R. S. (2021). A multimodal discourse analysis of disneyplus hotstar Indonesia TV advertisement. *JELLT (Journal of English Language and Language Teaching)*, 5(1), 14–24.
- Campbell, C. (2022). Artificial intelligence in education: contributors, collaborations, research topics, and challenges. *Educational Technology & Society*, 25, 28–47.
- Chow, Y. F. (2021). A social semiotic multimodal analysis of ategi translation in manga. *Social Semiotics*, 0(0), 1–21.
- Djamdjuri, D. S., Suseno, M., Tajuddin, S., Lustyantje, N., & Chaeruman, U. A. (2021). Multimodal approach in online EFL class using islamic learning materials: Students' perspective. *International Journal of Language Education*, 5(4), 337–355.
- Epoge, N. K. (2012). Slang and colloquialism in Cameroon English verbal discourse. *International Journal of Linguistics*, 4(1), 130–145.
- Forceville, C. J. (2011). Multimodality: A social semiotic approach to contemporary communication. *Journal of Pragmatics*, 43(14), 3624–3626.
- Hermawan, B. (2013). Multimodality: Menafsir verbal, membaca gambar, dan memahami teks. *Jurnal Pendidikan Bahasa Dan Sastra*, 13(1), 19.
- Hopcan, S., Polat, E., Ozturk, M. E., & Ozturk, L. (2022). Artificial intelligence in special education: a systematic review. *Interactive Learning Environments*, 28(6), 1366–1372.
- Liu, Z. (2022). Introducing a multimodal perspective to emotional variables in second language acquisition education: Systemic functional multimodal discourse analysis. *Frontiers in Psychology*, 13(October), 1–9.
- Lubis, Duma Sari, T. Silvana Sinar, T. S. (2014). The structure of selected print advertisement: A multimodal analysis. *Kajian Linguistik*, 11(1), 161–177.
- Megawati, W., & Hartono, R. (2020). The impact of teachers' verbal and non-verbal communication on students' motivation in learning english. *English Education Journal*, 10(4), 436–448.
- Moro, L., Mortimer, E., Tiberghien, A., Moro, L., Mortimer, E., & Tiberghien, A. (2019). The role of social semiotics multimodality and joint action theory in describing teaching practices : Two cases studies with experienced teachers. *HAL SHS: Human and Social Sciences*, 1(1).
- Mujiyanto, J. (2019). Multimodality in english- Indonesian intersemiotic translation. *Atlantis Press*, 188(Eltlt 2018), 1–10.
- Nisak, S., & Rukmini, D. (2021). Relations between verbal language and visual image in student's textbook implementing the concept of metafunctions. *English Education Journal*, 11(3), 406–416.
- Norris, S., Daniela, C., & Eds, M. (2014). *Interactions, images and texts a reader in multimodality* (C. D. Norris, Sigrid and Maier (ed.); Volume 11). De Gruyter Mouton. www.degruyter.com



- Nurviyani, V., Sanda, V. L., Tadjudin, I. R., & Ummah, U. B. (2022). Pendampingan pengajaran Bahasa Inggris. *GERVASI: Jurnal Pengabdian Kepada Masyarakat*, 6(2), 477–492.
- Oey, J. D. (2019). A multimodal discourse analysis of the notion of beauty in “Dove real beauty sketches.” *K@ta Kita*, 7(3), 352–357.
- Permata Yanda, D. (2018). A multimodal discourse analysis (MDA) on bidadari bermata bening novel by Habiburrahman El-Shirazy (Analisis wacana multimodal dalam novel bidadari bermata bening karya Habiburrahman El-Shirazy). *Gramatika STKIP PGRI Sumatera Barat*, 4(2).
- Raharjo, A. R., Hidayat, D. N., Alek, A., & Jalil, N. (2020). Multimodal analysis of Wardah lipstick advertisement. *Elite English and Literature Journal*, 7(2), 149.
- Rohmawati, I. (2016). Appraisal devices realizing attitudes in Barack Obama’S inaugural speech. *Journal of Vision*, 5(1), 27–56.
- Samarakou, M., Fylladitakis, E. D., Prentakis, P., & Athineos, S. (2014). Implementation of artificial intelligence assessment in engineering laboratory education. *Proceedings of the International Conference E-Learning 2014 - Part of the Multi Conference on Computer Science and Information Systems, MCCSIS 2014*, 299–303.
- Susanto, D. A., Oktavia, M., & Sembiring, L. T. A. B. (2021). Students’ understanding on spoken discourse in the context of english language teaching (ELT) at university. *Eralingua: Jurnal Pendidikan Bahasa Asing Dan Sastra*, 5(1), 265.
- Unesco. (2019). Artificial intelligence in education: challenges and opportunities for sustainable development. In *Working papers on education policy*, 7.
- Wallace, R. J. (2021). Artificial Intelligence/ Human Intelligence. *Artificial Intelligence/ Human Intelligence*, 349–352.
- Wang, J. A. (2019). Jonathan Alexander Wang 117. *Jonathan Alexander Wang*, 11(650).
- Wayne Holmes, J. P., Irene-Angelica Chounta, B. W., & Dimitrova, and V. (2022). Artificial intelligence and education a critical view through the lens of human rights, democracy and the rule of law. In *Council of Europe*. Council of Europe Publishing. <http://book.coe.int>