Artificial Intelligence Discourse and Education Planning in Cultural Content

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The purpose of this study explored the discourse of artificial intelligence (AI), as seen through cultural content in the Fourth Industrial Revolution era, which engages with AI. Furthermore, the study also attempted to find educational uses from thereof. This study assumes that the meaning and function of AI expands in various ways in the world of the digital revolution, which no one has experienced during the Fourth Industrial Revolution. AI discourse shows this well. The discourse of AI, due to its issue, is represented by various cultural content. Therefore, this study, which utilises discourse as a tool to analyse social phenomena, presupposes practice and suggests interdisciplinary considerations beyond the humanities or science. The automated decision-making by artificial intelligence algorithms already has a significant impact on society as a whole. AI has become a situation where we must consider how it can coexist with humans beyond the icon of the times. One phenomenon that can be discovered through the AI discourse is will the future of mankind be 'better' or 'will it get worse'? These questions pose a constant encounter with the problem, and no one knows the future. Thus, the argument that future education should allow humans to exploit areas superior to machines is convincing. Furthermore, the use of digital literacy will facilitate the change of the education paradigm.

Keywords: *Artificial intelligence (AI), Cultural contents, AI discourse, Educational application, Fourth industrial revolution, Digital literacy.*

Introduction

Artificial intelligence (AI) is driving and promoting change of the modern society. The AI era is interestingly and continually demanding future predictions. The age of AI is clearly causing humans to face crisis and opportunity at the same time. In response, our society

paradoxically predicts both positive and negative outlooks (The discussion was also multifaceted at the 34th AAAI Conference on Artificial Intelligence, held in New York from February 7 to 12, 2020). In particular, the AI discourse highlights social policy issues, including the limitations of AI and the various side effects arising from errors, the risks of misuse or abuse, and the loss of jobs.

One such example occurred during the presentation, "Meeting on artificial intelligence and sustainable development", which was held at the United Nations in October 2017. Robot Sophia attended the conference panel, and UN Deputy Secretary-General, Amina J. Mohammed, issued the opening speech by saying, "The influence of technology on our societies should be determined by the actions of us, humans, not by machines", and "Technology is here for us to explore and use for the benefit of all". Despite the potential to accelerate the progress of sustainable development goals (SDGs), Amina J. Mohammed warned that inequality could deepen (UN News; At UN, robot Sophia joins meeting on artificial intelligence and sustainable development). However, in order to see and resolve these issues, the cooperation of science and technology is essential.

Equally important is the issue of innovation in the education system, in particular to redefine the role of humans in the AI era and to cultivate talented people. This word has two meanings. The first is to cultivate AI experts who can fill laboratories and industrial sites with problems in the scientific and technological fields. The second is to change the educational method paradigm in the reality of artificial intelligence, in the educational and cultural realm. The interest of this study is found in the second meaning. Therefore, this study aims to analyse the discourse of AI according to the issue of AI, which has become our daily life, to understand its cultural meanings, and to find ways to utilise education.

The humanities should play a role in analysing the social changes led by science and technology, reading their meanings, and identifying meta-discourses. Therefore, the humanities need to be more actively concerned with the age of AI. One of the methods is the interpretation and understanding of the AI discourse which is embodied by various cultural content in reality. Such a work could provide clues about how to change lifestyles in preparation for AI, as well as how to respond to current educational situations. Furthermore, this study will also explore how the results of this work can be used in the education field.

Generation and Appearance of Discourse in the Age of AI
Understanding and Cultural Contents in the Age of AI

The expression 'artificial intelligence' is a compound word of 'artificial' and 'intelligence'. Artificial Intelligence is explained not only in science, but also in philosophy and psychology

(Miller, 2019). AI is the simulation of human intelligence that takes place on a machine programmed to think like humans and mimic human behaviour.

Human intelligence can be classified into various types. In recent years, AI technology has shown interest in linguistic intelligence, emotional intelligence, and social intelligence. These are the most humanistic intelligences that human beings possess. Among these, linguistic intelligence refers to the ability to effectively use language with speech or writing. It means the ability to communicate among people using languages. This is also related to research areas, such as voice assistant, autonomous car, real-time voice search, and voice translator, which are examples of voice recognition technologies that are expected to be developed rapidly and in combination with AI. Paradoxically, this leads clues to understanding how AI can help humans understand their intelligence (Pannu, 2015), and how machines can compose music or write stories. Artificial intelligence research, which began in the early nineteen hundreds, began with the study of linguistic intelligence, developed into artificial brain research, and is now being applied to any machine that exhibits the characteristics of the human mind, such as learning and solving problems. The ideal characteristic of AI is the ability to rationalise and take action on the best opportunities to achieve a specific goal.
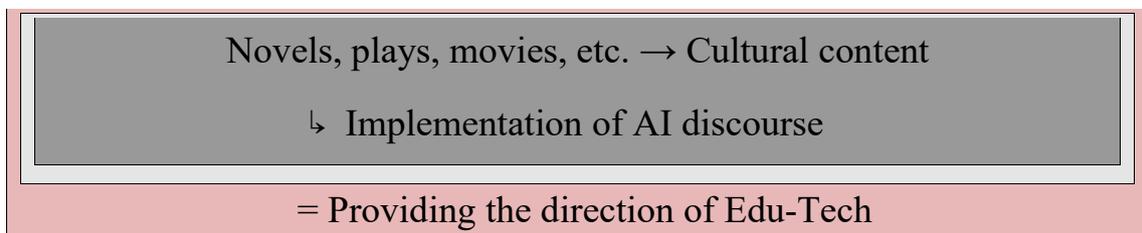
The interest in AI continues to produce interesting issues which are related to it. At the beginning of the twenty-first century, the world is now at the centre of the Fourth Industrial Revolution with its background of hyper-connectivity (Wellman, 2001), and hyper-convergence. As the AI of machines is increasingly dependent on data, the era of the Fourth Industrial Revolution will produce a world where AI learns from big data and predicts and judges faster, and more economically and accurately than the human brain. As such, AI is now the sum of the world's technologies and the core of the Fourth Industrial Revolution.

This can be seen in new ways and directions, including through cultural content. The word 'culture' means all human lifestyles with a certain meaning. Culture is formed by human conscious efforts to make life rich, convenient, and beautiful, and 'content' refers to something that is delivered to people through media. Collectively, based on the meaning of each of these words, if we simply describe 'cultural content', it can be called something that conveys cultural elements to people through the media. In addition, 'fun' and 'commerciality' are important in the meaning of cultural content which is widely used in society today. It makes people's access easier. Combining these elements with the original meaning and explaining the cultural content in an expanded sense, it can be said to create commercial profits by delivering interesting cultural elements to people through digital media. However, the term 'cultural content' has just appeared, and since the field is developing rapidly, experts are using the meaning slightly differently. Therefore, opinions on the classification of cultural content also vary. Overall, cultural content generally refers to literary works, such as novels or plays. It also points to broadcasts, movies, games, music, animation, cartoons,

publishing, edutainment, characters, performances, advertising, mobile content solutions, knowledge and information content, communication services, and platform services. The new field of cultural content is constantly expanding. Finding an AI discourse therein is not difficult.

AI discourse in cultural content is a barometer that can tell and show our present and future world. In it, a warm heart from human nature, a picture of living happily together with others or a cold and loss of humanity can be depicted. One interesting question can be presented here: what can we get closer to? Furthermore, this problem also promotes the pursuit of educational solutions. Figure 1 below illustrates a research model in which the hypothesis is summarised.

Figure 1. The AI discourse sample and research model

Novels, plays, movies, etc. → Cultural content

↳ Implementation of AI discourse

= Providing the direction of Edu-Tech

The future to come will be accompanied by a number of problems that inevitably arise in the course of technological development. Now, by its benefit, AI has become something that anyone can talk to and use. In particular, the development of Edu-Tech, which combines AI and AI-based technology, in addition to traditional education methods to provide new experiences for learners, will show a very interesting educational scene. For example, video education, which connects each home and classroom, will combine with AI capabilities inherent in the cloud to enable searching in recorded images and automatically create lectured content. Furthermore, in the near future, these things may become a reality. If this applied classroom becomes common, the ability of educators and the content of education should be changed accordingly. Considering the meaning of the word 'education,' this is why it is inevitable to emphasise the development of AI discourse in a humanistic background, apart from discussions in the fields of engineering, and science and technology.

Implications of Discourse and Expression Related to AI

As well as the term 'artificial intelligence', the word 'discourse' is also used in everyday contexts. Thus, it appears that it is one of the most inaccurate words of our time. This is also due to the diversity and complexity of the concept of discourse. Therefore, no dictionary or thesis has yet to explain the various meanings of discourse. In general, it can be understood as translations, such as German 'Diskurs', French 'discours', English 'discourse', Italian 'discorso', etc., and in speech, conversation, discourse, discussion, speech, documents,

papers, expressions, and so on. This paper borrowed the concept of P. Y. Zima's text sociology, focussing on the textuality as an 'analysis object' and interpreting it in a broad sense, and suggesting various forms of 'message expression'. Thus, every discourse could be text (Zima, 2010; Tagg, 2012).

In fact, the discourses expressed using language by members of society can also be a reference point for reflecting on the present and moving towards the future. That is the reason why to pay attention to discourse. For this reason, discourse combined with AI is sometimes a turning point in discovering new values of the society. Moral discourse, for example, is characterised by the recognition that one must do something and avoid something, whether he likes the results or not. Nevertheless, reality even focusses on the instrumentality of life in society. In other words, it intentionally avoids moral gaze while focussing on the convenient side of AI.

The realistic composition of discourse acts as an abstract power that governs what and how people think, especially when they reach a particular object, and at the same time, is a physical power that allows them to practise accordingly. Therefore, looking at how our society regards AI can provide a clue to predicting the state of AI and the attitude to cope with the change.
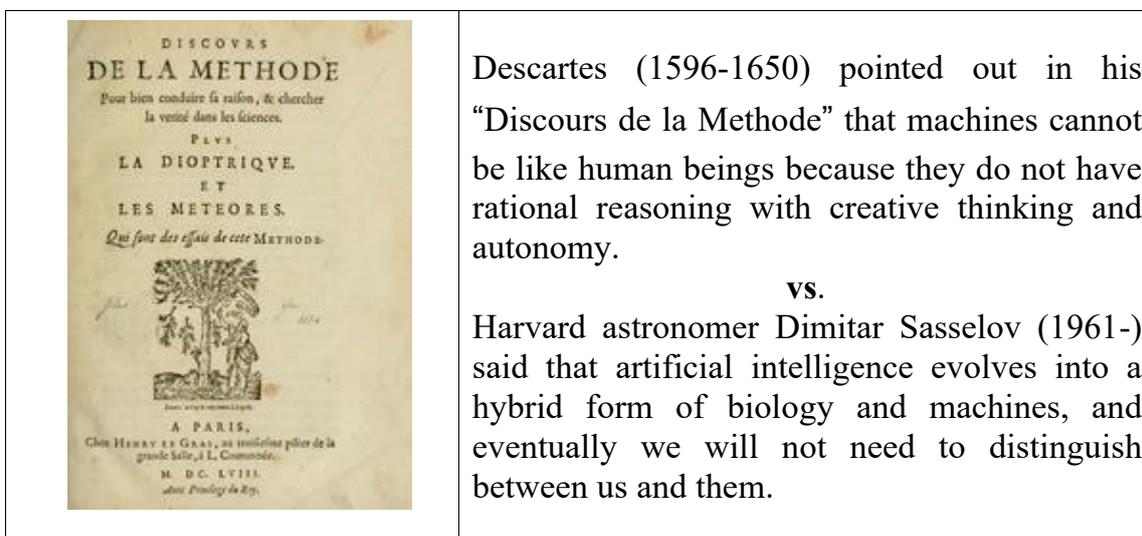
Discourse analysis presupposes an analysis of the situation in which the discourse is uttered, which covers not only the message, but also the context of the situation in which the message is exchanged, the subjects of the utterance, and the reception. It is also a methodology that attempts to elaborate on the combination of words and objects, culture and power action, and institutional practice, and the effects of the combination (Escobar, 1984). In this sense, if we can give a humanistic view of the AI discourses of our time and use them in the field of education as practical virtues, we will be able to know what meaning AI has in the society. For example:

"Next, there was a question why we wanted to find our source. Behind the desire to find his source, the idea was that if he actually found the person, he would be able to guess what kind of person he would be in the future. (…) Nevertheless, we all thought that, to a different extent, seeing the originator of which we were cloned would enable us to profoundly insight into our true self and predict our future life" (Ishiguro, 2017, pp.196–7).

This quote is expressed in literary works and shows the present and future of AI discourse. The quote is taken from the 2017 Nobel Prize-winning writer, Kazuo Ishiguro's, "Never Let Me Go", and expresses human beings who embody different aspects of human beings. Nevertheless, the human being is now ours who cannot be replaced by anything. Now, of course, presently and in the foreseeable future, technology can only imitate humans in one

way or another, even at the highest levels, rather than becoming real humans. Technology and algorithms are interfering with people's daily lives. So, for the time being, the key question is whether or not technology will really like great clones, cheaply and elaborately provided by machines, rather than the reality we embody. Furthermore, people's attention will certainly be more focused on the relationship between human and machine. (Leonhard, 2018). Due to AI, the human characteristics of individual differences now have to be restructured into the irrational framework in which the rationality of machines and human rationality collide. This is also shown in Figure 2.

Figure 2. Discourse on the Method (1658 edition)

	Descartes (1596-1650) pointed out in his "Discours de la Methode" that machines cannot be like human beings because they do not have rational reasoning with creative thinking and autonomy. **vs.** Harvard astronomer Dimitar Sasselov (1961-) said that artificial intelligence evolves into a hybrid form of biology and machines, and eventually we will not need to distinguish between us and them.

AI robots are aimed at improving the quality of life and increasing the convenience of human beings, and will eventually develop in ways that resemble human minds and actions. That is, they will have autonomy. Of course, AI robots can be used in various forms and can be given status. Consider a recent interest in sex robots or companion robots, and it is possible to define the different levels of personality and to give these beings lower levels of personality.

Apart from the technology itself or the development of technology, the cultural content in which such technology is projected, is inevitably reflected.

Educational use of AI Discourse
Educational Clues in AI Discourse

The discourse about AI in the various fields requires an understanding of not only human technology, but also of the human itself. Human images that create AI and which can replace humans, have long been expressed through media, such as movies and novels, regardless of their actual success. The AI era instils the fear that humans will be ignored by technology. For example, the emergence of cashier-less stores, which are operated using ICT during the

Fourth Industrial Revolution, shows the reality that no human labour is required. Actually, as time goes by, there will be more and more pressure that machines should replace human labour (Susskind, 2020).

The Figure 3 below illustrates how the store actually works.

Figure 3. Amazon Go and Amazon Go cashier-less grocery store

In these cases, the social need to add humanistic thinking to the development of AI is realised. Humans sometimes must ask why they should be convenient rather than machine-friendly, and such questions must also be asked in the classroom.

This fact, along with the argument that AI should be incorporated into the curriculum as AI spreads throughout society, poses the question: what do we actually teach in schools? There is also a deep connection with the problem. Clearly, AI is a very important area of interest for students who will lead the future. One possibility is to diagnose students' perceptions of science and technology, including AI, and develop curricula based upon them.

To cope with the development of AI, companies need AI experts, and each individual needs to develop AI-related competences. Therefore, it will be necessary to develop training models for developing data analysis and AI services. In addition, a deep learning development and general-purpose computer vision to utilise it, and a library system, which is an accumulated data space, must be constructed. This allows for the integration and optimisation of educational models which are created on various frameworks.

In addition, servers that can verify and manage AI services under development are also important elements in the AI education platform. If each of these software and hardware are interlocked and provided with a tool to help learners and educators learn from each other, they will be able to increase the utilisation in the education field.

Furthermore, there is one more aspect to consider: who makes the learning content? Of course, there is no need to create learning content directly from the Government or schools. Any number of servers or platforms can be personally developed to utilise learning content. As is well known, early educational theories suggest using visual media, such as films, projectors, and televisions, as supporting materials for learning. The media are simply a machine or technical tool. However, in the digital society, education has changed the perception of the media, and the space for education is increasingly becoming much wider.

In addition, education on AI's cultural approach should be made possible. AI discourse analysis could be one example. The process of understanding the messages in the AI discourse and understanding the situations in which messages are exchanged is also representative of the general educational context and environment. The educational response to the development of AI can be compared more prominently in the various approaches to the appearance and impact of AI discourse in cultural content.

Educational Model as a Utilisation Plan

The ability to understand and communicate with AI will become even more important in the future. In the age of AI, most of the activities that humans will do will bring rise to new ideas. People will introduce new information and combine them or think deeper (Ogawa, 2018), and humans will express in language. The ideas or concepts which are expressed in such a way, will be gathered to become an AI discourse. In addition, AI could determine national competitiveness. Therefore, it must be said that education should be broken down and converged between the academic fields on AI.

This study presents three educational models for using AI discourse, as follows. The first is the introduction of AI textbooks. This will mean that students will be accustomed to AI early on. Just as we have been learning letters, memorising multiplication tables, and learning how to use computers, becoming familiar with AI today is a must for everyone. This should include teaching AI-related skills and humanistic knowledge. It can be a subject or a supplementary textbook.

One of the important contents of such textbooks is AI culture, including AI ethics. To do this, education platforms, such as the AI education cloud, should be provided to students to create an education environment that can be accessed anytime and anywhere. Furthermore, this work will be necessary in the lifelong education process.

Second is the application of digital literacy through AI discourse. We live in a 24-hour networked world where the digital culture extends to all aspects of life. Further, literacy is

the ability to read, understand and reason correctly, thereby developing your knowledge and potential.

In the twenty-first century, literacy has become a concept of digital literacy that can understand, interpret, evaluate, use, express, and share not only paper but also various media, such as photography, video, the Internet, and mobile content. In some ways, the 'literacy' through the media may already be based on the characteristics of the digital means, to which the use of media equipment is applied (Dezuanni, 2014).

Today, everyone uses digital and mobile media to express their thoughts, comment, and share with others, and thus participates in social activities using digital technology. In this regard, research on media culture should be conducted for participants in media literacy education (Livingstone, 2004). However, the specific method is not exactly presented. Therefore, if the education using AI discourse is used for digital literacy education, it will help to create a new AI culture.

In particular, the AI discourse expressed in various media can be the educational content mentioned above. The processes of converting and accumulating this into digital materials could also be a part of AI education.

Third is the production of cultural content using AI discourse. The problem is that the discourse itself is harvest created by someone. This must be followed by a premise, which is to solve the copyright issue of the content. For the AI era, where everything is connected and fused, content that can be used freely by everyone should be developed. It will be meaningful if AI discourse is used as the source. This is because AI discourse is another reality of AI that can be seen in a small educational field, unlike actual technology. If needed, you can use a website that provides a variety of copyright-free content (e.g. non-commercial uses include Getty Images and Pixabay, which are freely available). Figure 4 below shows the relationship of these models.

Figure 4. AI discourse and convergence educational model
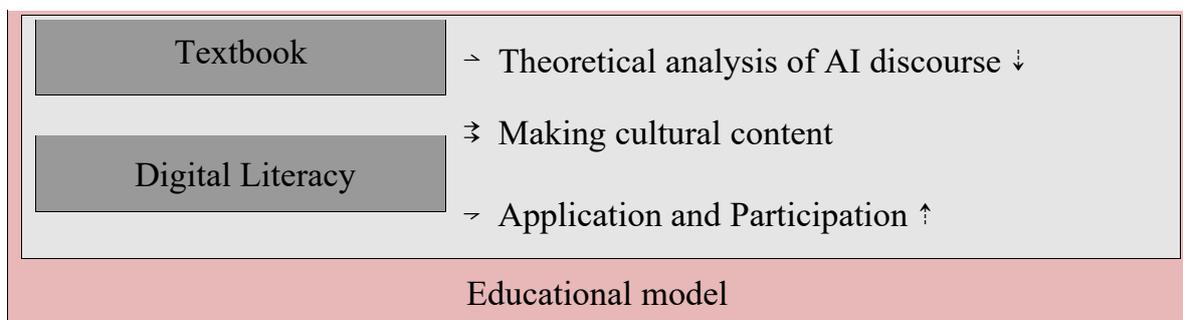
Conclusion

Artificial intelligence is now at the stage of improving performance on its own and without human intervention. Assessing the discourse regarding AI, it often faces human desires. Nevertheless, AI discourse in cultural content clearly shows modern peoples' interest in AI.

AI is no longer a mysterious future technology but a lifestyle-based technology, and everyone should now be aware of it. Furthermore, education is at this point. The two areas of universal education, where students acquire and experience the concept of AI, and further education, where they can work in the field of AI, should be combined so that students can play a pivotal role in the future society. In addition, the content of the education should be configured to provide students with a good understanding of how AI is used in their areas of interest, what are the social problems related to AI, and how they can solve social problems with AI.

Finally, this article proposes three key points:

First, AI discourse can be produced in any academic field and not in one particular field, but it must be considered by academic convergence. It should also be open to all who make up society.

Second, a social environment should be established to bridge the gaps in AI utilisation. It should be a universal education in school, which is also essential to creating a good AI culture.

Third, it is necessary to promote the continuous change of educational content with the age of science and technology. Changes in the education paradigm should be cultural phenomena in the age of AI.

Limitation and Future Research Directions

Artificial intelligence will facilitate many changes in all areas of society, and this is also the case for the educational uses covered in this paper. Just as the role of culture should be more emphasised at the centre of the soft power of the AI era with its moral implication, why, and how humans collaborate with AI is also important. The field of education will be an excellent base for such discussions.

Artificial intelligence must now be viewed from a cultural perspective. Therefore, the research on AI discourse that is required in the field of education should be continuously conducted. On the other hand, although it was not covered in this paper, it would be more

meaningful if such studies were conducted in subdivisions of education, such as educational psychology, and educational sociology.

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