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# Effect of Channel Distribution in Education Distribution Environment using ChatGPT

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## Abstract

**Purpose:** Based on examples, we analyzed the effects of interactive artificial intelligence on students' learning. How ChatGPT promotes students' interest in class participation and German literature, and how to use this tool how students' critical thinking skills and information verification skills can develop by using them, and focus is on the design of effective teaching methods using ChatGPT. **Research design, data and methodology:** ChatGPT was used in the discussion class and task execution process combined with de-learning. The company chose to evaluate the impact of interactive artificial intelligence on learning. **Results:** By verifying the GPT output and suggesting a class environment that can effectively utilize it, according to the results of the survey, Improve AI literacy by improving prompts and sharing how to use them when used in the error of ChatGPT stimulates the curiosity of the student and verifies the information itself. It was possible to draw the conclusion that there is a paradoxical effect such as promoting the process of plate thinking. **Conclusions:** Prompt analysis of students with excellent turbulence shows that if you use ChatGPT as a discussion tool, this study suggests that crabs can provide an active learning environment. Beyond the simple provision of information, education and learning using students' critical thinking and self-directed.

**Keywords:** ChatGPT, PBL, literature, AI literacy, literature education

**JEL Classification Code :** M0, M1, M2, M3, I2

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## 1. Introduction

The emergence of ChatGPT is causing a great stir in the educational world. This is because interactive AI chats, released by Open AI, which can generate various texts based on user input prompts, have a huge impact on students'

learning environment. Since a simple prompt input completes a plausible essay, the task given to improve the student's thinking ability has become meaningless at once. In response to these changes, educators are seeking various ways to identify and prevent cheating using AI. At the same time, research is being actively conducted to utilize artificial intelligence technology as a learning aid despite the impact

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of chatting on education. At the present time, college education in Korea is not limited to the acquisition of knowledge by students, but is aimed at creating creative talents that can create new ones based on the knowledge they have acquired. Teaching methods such as class structure are being actively applied to universities. These new teaching and learning methods enable students to experience active learning beyond acquiring knowledge, enabling inferential thinking, analytical thinking, and higher thinking. ChatGPT is a compound word that combines Generative Pre-trained Transformer and Chat, and generates a language based on pre-learned data (Park Hae-sun 2023). In fact, at Texas A & M University in the United States, students submitted assignments using the emergence of ChatGPT is causing a great stir in the educational world. This is because interactive AI chats, released by Open AI, which can generate various texts based on user input prompts, have a huge impact on students' learning environment. Since a simple prompt input completes a plausible essay, the task given to improve the student's thinking ability has become meaningless at once. In response to these changes, educators are seeking various ways to identify and prevent cheating using AI. At the same time, research is being actively conducted to utilize artificial intelligence technology as a learning aid despite the impact of chatting on education. At the present time, college education in Korea is not limited to the acquisition of knowledge by students, but is aimed at creating creative talents that can create new ones based on the knowledge they have acquired. Teaching methods such as class structure are being actively applied to universities. These new teaching and learning methods enable students to experience active learning beyond acquiring knowledge, enabling inferential thinking, analytical thinking, and higher thinking. ChatGPT is a compound word that combines Generative Pre-trained Transformer and Chat, and generates a language based on pre-learned data (Park Hae-sun 2023). In fact, at Texas A & M University in the United States, students submitted assignments using the emergence of ChatGPT is causing a great stir in the educational world. This is because interactive AI chats, released by Open AI, which can generate various texts based on user input prompts, have a huge impact on students' learning environment. Since a simple prompt input completes a plausible essay, the task given to improve the student's thinking ability has become meaningless at once. In response to these changes, educators are seeking various ways to identify and prevent cheating using AI. At the same time, research is being actively conducted to utilize artificial intelligence technology as a learning aid despite the impact of chatting on education. At the present time, college education in Korea is not limited to the acquisition of knowledge by students, but is aimed at creating creative talents that can create new ones based on the knowledge

they have acquired. Teaching methods such as class structure are being actively applied to universities. These new teaching and learning methods enable students to experience active learning beyond acquiring knowledge, enabling inferential thinking, analytical thinking, and higher thinking. ChatGPT is a compound word that combines Generative Pre-trained Transformer and Chat, and generates a language based on pre-learned data (Park Hae-sun 2023). An artificial intelligence research company founded in 2015. In fact, at Texas A & M University in the United States, students submitted assignments using ChatGPT and as a result, some students were graded zero. (Business Insider 2023) Teachers want to prevent AI Cheating, such as requiring students to submit assignments that include a document's editing history, or opting for exams instead of homework assessments. The method of teaching the knowledge recorded in textbooks or other ancient books to be easily digested by the professor and then conveying the organized knowledge to the students (Park Kwon-saeng 2011). The teaching and learning method that learners acquire knowledge before class and develop personality and creativity by doing problem-solving learning based on collaboration with teachers and colleagues in class time. In elementary, middle and high schools, students in Korea who have been taught in a traditional way of education that maximizes the efficiency of one teacher delivering knowledge to a large number of students are forced to be passive in learning. So, it is not accustomed to asking questions or curiosity and satisfying them, and it is rare to question the instructor's lecture. In such an atmosphere, the emergence of ChatGPT is a risk to make students become more passive learners, so it cannot help but be regarded as a crisis of education for teachers and students. On the other hand, there are some areas where it is difficult to apply PBL classes that cultivate students as active learners, and literature is included. It is difficult to motivate students to learn because of lack of interest in subjects other than practical subjects. In the case of literature, there is a relative lack of pre-study materials that can be easily accessed by students due to their language limitations. Therefore, teachers cannot help but focus on providing knowledge to students.

## **2. Theoretical Background**

The announcement of ChatGPT an artificially intelligent chatbot, as a co-author of the paper has raised concerns that ChatGPT may replace academics and educators. Many scholars are paying attention to the amazing technology, power, and dangers of interactive artificial intelligence. In particular, since Open AI is keeping the core technology of ChatGPT secret, it is suitable for attracting scholars' curiosity, so research on ChatGPT is currently being

conducted extensively in various countries. Overseas, research is being conducted not only in education but also in tourism, business, and medicine. Furthermore, AI literacy refers to the ability to use AI technology to critically evaluate AI technology while effectively communicating

and collaborating with research on how to distinguish the use of chats and the issue of publishing ethics (Ryu Mi-young / Han Sun-gwan 2023).

**Table 1:** Estimate of GPT-3’s operational water consumption footprint

**Table 1:** Estimate of GPT-3’s operational water consumption footprint. “\*” denotes data centers under construction as of July 2023, whose PUE and WUE are projected by Microsoft.

Location	PUE	On-site WUE (L/kWh)	Off-site EWIF (L/kWh)	Water for Training (million L)			Water for Each Request (mL)			# of Requests for 500ml Water
				On-site Water	Off-site Water	Total Water	On-site Water	Off-site Water	Total Water	
U.S. Average	1.170	0.550	3.142	0.708	4.731	<b>5.439</b>	2.200	14.704	<b>16.904</b>	<b>29.6</b>
Arizona	1.180	1.630	4.959	2.098	7.531	<b>9.629</b>	6.520	23.406	<b>29.926</b>	<b>16.7</b>
Georgia*	1.120	0.060	2.309	0.077	3.328	<b>3.406</b>	0.240	10.345	<b>10.585</b>	<b>47.2</b>
Illinois	1.350	0.740	2.233	0.952	3.880	<b>4.833</b>	2.960	12.060	<b>15.020</b>	<b>33.3</b>
Iowa	1.160	0.140	3.104	0.180	4.634	<b>4.814</b>	0.560	14.403	<b>14.963</b>	<b>33.4</b>
Texas	1.280	0.250	1.287	0.322	2.120	<b>2.442</b>	1.000	6.590	<b>7.590</b>	<b>65.9</b>
Virginia	1.140	0.140	2.385	0.180	3.499	<b>3.679</b>	0.560	10.875	<b>11.435</b>	<b>43.7</b>
Washington	1.150	0.950	9.501	1.223	14.063	<b>15.285</b>	3.800	43.706	<b>47.506</b>	<b>10.5</b>
Wyoming	1.110	0.130	2.574	0.167	3.677	<b>3.845</b>	0.520	11.429	<b>11.949</b>	<b>41.8</b>
Australia*	1.120	0.012	4.259	0.015	6.138	<b>6.154</b>	0.048	19.078	<b>19.126</b>	<b>26.1</b>
Denmark*	1.160	0.010	3.180	0.013	4.747	<b>4.760</b>	0.040	14.754	<b>14.794</b>	<b>33.8</b>
Finland*	1.120	0.010	4.542	0.013	6.548	<b>6.561</b>	0.040	20.350	<b>20.390</b>	<b>24.5</b>
India*	1.430	0.000	3.445	0.000	6.340	<b>6.340</b>	0.000	19.704	<b>19.704</b>	<b>25.4</b>
Indonesia*	1.320	1.900	2.271	2.445	3.858	<b>6.304</b>	7.600	11.992	<b>19.592</b>	<b>25.5</b>
Ireland	1.190	0.020	1.476	0.026	2.261	<b>2.287</b>	0.080	7.027	<b>7.107</b>	<b>70.4</b>
Mexico*	1.120	0.056	5.300	0.072	7.639	<b>7.711</b>	0.224	23.742	<b>23.966</b>	<b>20.9</b>
Netherlands	1.140	0.060	3.445	0.077	5.054	<b>5.131</b>	0.240	15.708	<b>15.948</b>	<b>31.4</b>
Sweden	1.160	0.090	6.019	0.116	8.986	<b>9.101</b>	0.360	27.927	<b>28.287</b>	<b>17.7</b>

You can find out the possibility of using ChatGPT in literature class and developed a scale to measure it. They found that AI readiness cannot be predicted simply by AI literacy, and factors such as self-confidence, association, and fear affect it. Prior to the advent of ChatGPT research has been conducted to utilize AI in elementary, middle, and high school classes, and the main area of ChatGPT research is education. There was also an attempt to apply ChatGPT to Korean literature classes. In the study of PBL literature class method using ChatGPT. ChatGPT is a problem for users. AI readiness is the degree to which individuals, organizations, systems, or countries adopt artificial intelligence technology and are ready to use it effectively. The study is based on the fact that it has a point of contact with PBL learning in terms of presenting defects. He said that by allowing students to use chats in pre-study, students were able to communicate with chats, clarify problems, induce specific questions to be repeated, and go through the verification process. Therefore, he suggests the use of chatty in literature class of PBL learning method through the case of using chatty with students in literature class. However, there is a risk in that the use of unverified chats is designed to be done at the student's pre-study stage. Furthermore, it was not mentioned in the paper that the data on Korean literature that ChatGPT can provide is insufficient compared to the data in English, and even though ChatGPT is a language model, not an information model, it is regrettable that the use of ChatGPT in class is limited to finding the right data. Ryu Mi-young and Han Sun-gwan announced the

test criteria for measuring the AI literacy ability developed for adults in the Developing Test Indicators for Measuring Artificial Intelligence Literacy (2023) and suggested the importance of AI literacy and self-checklist according to the advent of ChatGPT. Koo Bon-kwon considers the ability of modern people to be developed as in the field of Korean language education, Kang Dong-hoon(2023) analyzes the influence of ChatGPT on writing literacy among Korean language education, urges the establishment of writing ethics principles using ChatGPT to cope with writing ethics problems and false information, and suggests teaching methods such as critical reading literacy. Choi Yoon-hee explored the positive and negative aspects of the pre-service English teacher's use of ChatGPT in English writing activities in the Korean Pre-English Teacher's Perception Search (2023).

On the positive side, he points out that ChatGPT provides immediate feedback to users, is efficient and confident over time, and the ambiguity of the author is that the user can be dependent on the negative side. ChatGPT is an interactive artificial intelligence that enables context learning which generates text by grasping the intention contained in the prompt (Park Hae-sun 2023). In other words, users can continue conversations with ChatGPT through the prompt. The history of education has long emphasized the importance of using ChatGPT in the question literature class and the importance of communication through answers.

**Table 2: Educational Setting**

		Educational Setting							
		Higher Education	K-12 Education	Practical Skills Learning	Professional Development	Entrepreneurship Education	Lifelong Learning	Popular Science Education	General (Uncategorized)
Frequently Discussed Themes	Productivity	😊 10.70%	😊 3.07%	😊 7.44%	😊 3.02%	😊 1.89%	😊 2.11%	😊 2.25%	😊 1.41%
		😞 4.12%	😞 8.24%	😞 3.52%	😞 0.56%	😞 1.16%	😞 0.50%	😞 0.50%	😞 2.91%
		😞 2.91%	😞 7.97%	😞 5.26%	😞 1.59%	😞 3.09%	😞 1.00%	😞 0.36%	😞 5.76%
		😞 1.86%	😞 0.47%	😞 2.20%	😞 2.73%	😞 2.98%	😞 1.93%	😞 0.88%	😞 5.46%
	Efficiency	😊 5.89%	😊 3.83%	😊 6.32%	😊 3.25%	😊 1.21%	😊 2.38%	😊 1.29%	😊 1.90%
		😊 10.42%	😊 8.62%	😊 2.80%	😊 1.98%	😊 1.61%	😊 0.84%	😊 0.84%	😊 1.00%
		😞 3.83%	😞 5.31%	😞 5.58%	😞 2.11%	😞 5.10%	😞 1.42%	😞 0.68%	😞 4.83%
		😞 4.54%	😞 2.30%	😞 2.88%	😞 2.67%	😞 1.71%	😞 0.52%	😞 0.87%	😞 1.32%
	Ethics	😊 1.92%	😊 4.36%	😊 7.59%	😊 3.60%	😊 0.96%	😊 3.16%	😊 1.06%	😊 1.85%
		😊 7.55%	😊 10.58%	😊 3.02%	😊 1.95%	😊 1.47%	😊 0.48%	😊 0.48%	😊 0.68%
		😞 5.87%	😞 6.28%	😞 6.63%	😞 2.12%	😞 6.01%	😞 1.23%	😞 0.27%	😞 5.59%
		😞 3.05%	😞 2.37%	😞 3.12%	😞 2.85%	😞 1.61%	😞 0.20%	😞 0.65%	😞 1.30%

**Note:**

- Positive perception (😊), Negative perception (😞), Mixed Perception (😬), Neutral perception (😐)
- The most dominant perception in each category is highlighted with a distinctive color.

**Table 3: Educational Setting**

Total Spending By Category And Country								
Country	Cloud Services	Customer Support	Data Analytics	Marketing Services	Messaging	Network Infrastructure	Security Solutions	
1 Australia	3140.35	3681.2	2758.33	1702.370000000000001	1836.12	4241.37	1732.45	20
2 Brazil	3102.96	2172.28	4510.21	2221.0	1908.080000000000002	1868.67	3824.51	30
3 Canada	2415.43	3054.21	2739.19	1745.0	839.43	2441.82	1742.610000000000001	20
4 China	1818.12	4634.92	1866.4	3103.94	292175999999999999998	4698.059999999999995	2462.78	20
5 France	1924.63	2602.9	2790.17	3604.16	1868.840000000000001	4289.04	3141.46	1590
6 Germany	980.43	3187.26	3991.79	3584.03	2498.9	5206.54	4582.690000000000005	40
7 India	3728.32	1427.32	847.91	2348.79	3841.52	4241.26	1310.39	10
8 Italy	1955.53	2475.85	4424.59	4560.87	2670.37	2854.89	3099.78	14
9 Spain	2112.94	2448.78	3364.81	2125.85	2363.64	2854.11	2607.87	50
10 United States	4056.03	3715.59	5889.33	2643.89	1801.77	2793.64	2033.98	30

please let me know! [-]

Category column

What are we spending the most on?

Total Spending By Cat...

The combined data shows that the most spending was on **Network Infrastructure**, followed by **Data Analytics** and **Customer Support**. The details are displayed in the table provided. If you need further analysis or a specific chart, feel free to let me know! [-]

Break that out by country

Total Spending By Cat...

The breakdown of total spending by category and country is now available. The table shows detailed spending across various categories such as Cloud Services, Customer Support, Data Analytics, and others for each country. If you need any specific visualization or further analysis, please let me know! [-]

Analyze highest spending per country. Show spending trends over the months.

Message ChatGPT

From Confucius and Socrates' conversation to teaching, this tradition has led to question-centered teaching methods, such as the way in which uncertain knowledge is sought by itself by repeating questions and answers today. This is considered to be a learning method that allows students to develop their thinking skills and active learning attitudes and develop their knowledge (Hwang Ji-hyun et al., 2021).

Therefore, a communicative language model such as

ChatGPT seems to be able to allow learners to expand their thinking through dialogue, and research should be conducted on effective teaching methods focusing on conversation with ChatGPT. In addition, the ability of students to verify the information provided by ChatGPT and fostering AI literacy will be the role of educators in the era of ChatGPT. This study is expected to contribute to the development of educational methodology and to play an important role in improving the ability of learners to build and apply knowledge on their own.

**Table 4:** Data Analysis

Annotator	Samples	Figure				Data Analysis				
		Correctness	Chart Type	Aesthetics	Time (s)	Correctness	Complexity	Alignment	Fluency	Time (s)
Senior GPT-4	30	0.79	0.96	2.96	472	0.98	2.01	0.98	2.98	324
		0.73	0.96	2.41	59	0.82	2.18	1.00	3.00	40
Junior GPT-4	30	0.66	0.96	2.66	645	0.95	1.98	0.86	3.00	388
		0.71	0.98	2.75	50	0.94	2.32	1.00	3.00	34
Intern GPT-4	40	0.74	0.91	2.40	648	0.86	1.59	1.00	3.00	173
		0.73	0.97	2.45	55	0.91	2.28	1.00	3.00	33

### 3. Research Method

#### 3.1. Designing a Basic Seminar on Literature Using ChatGPT

The researcher used ChatGPT in the team teaching class of the Literature Basic Seminar at University, using translated texts because the class was opened mainly for first graders who could not speak. The class was designed in the form of a mixture of flipped learning in the main class after the pre-study and PBL class, which discusses the problem. Students had to read the work every week and prepare the discussion based on the given topic. In this class, I lectured about the works, writers, and the background of the times for about 30 to 40 minutes. After that, I organized a group to proceed with the group discussion, and instructed me to use the chat room in the process. After the discussion, a randomly selected student introduced his opinion and introduced the contents of the discussion.

##### 3.1.1. Class progress method

###### 1. prior learning

Thinking about the topic of discussion that is open to the public based on the work - Lecture (30-40 minutes) - Group discussion / Discussion (30-40 minutes) - Presenting personal opinions and discussion results (introducing common points or differences) In the flipped learning class, it is important to acquire basic knowledge in the pre-study because the pre-study determines the quality of the pre-study. In particular, the researcher decided that students should not use chatty before reading the work and learning background knowledge. Since it is already known that ChatGPT provides incomplete information, it is necessary to convey the knowledge in advance so that the student can verify the output. The pre-study of this class is to read literary works, and the quality of discussion, which is the core of this class, has to be determined. So, to make sure that the students actually read the book, I wrote down the impressive phrases in the book. At the same time, due to the nature of PBL classes, it is important for students to participate actively.

Therefore, it is necessary to have a proper motivation to connect the problem with the problem, that is, to create a link between the learner and the problem (Kang In-ae et al., 2013). Students should be interested in learning motivation and be curious. However, as mentioned in the introduction, literature is not a practical subject that is helpful for employment, because of the perception that it is not closely related to our lives geographically and temporally, and because of the online information in Korean that students can easily access, Students feel autonomy, responsibility, and ownership through the problem and are motivated to learn. However, it is possible to induce learning motivation only when the problem is recognized as its own problem, that is, the problem must be internalized, and the instructor can induce the student's active learning attitude by allowing the learner to associate the problem with his or her experience.

##### 3.2. Possible use of ChatGPT in literature class

Because of the perception that it is difficult and difficult to learn, it is difficult to induce students' motivation to learn, and therefore they are stranded in the first stage of active learning. Therefore, the researcher decided that students' motivation for learning should be preceded. If students choose a topic of discussion that can be internalized by recognizing the problems dealt with in literary works as their own problems in connection with their own experiences, they can go beyond rigid recognition of literary works and accept literature as lively and close to reality.

##### 3.3. Discussions of this class (May 18)

1. sentences liked in The Famous, or memorable or unsympathetic

Write down the sentence and explain why. (submit after discussion)

2. Discussion Topic: \* Discuss the grounds for the topic in the work.

Why do writers criticize sports? What do writers say about good sports and bad sports?

- What is the role of sports? Brecht argues that sports can be

overemphasized in modern society and that important values can be distorted. Let's summarize point of view and what role sports play in our society.

- What do you think when you see a player who is fouled or rough because of excessive competition?

Does competition make the game fun or not?

- What are the characteristics of the historical background that claimed? Students did not have difficulty in comparing the problems of sports in everyday life with the problems of sports seen by writers and were able to participate actively accordingly. The researcher presented a question to find the correct answer that simply asks the intention of the artist and a question that can spread the opinion of the individual student. The purpose of this study was to help students to deepen their thinking by analyzing the intention of the writer and comparing their own views so that they could understand the various phenomena of modern society more deeply and critically through literary works. However, it was instructed to internalize the problem but to find and discuss the basis of the subject in the work so that the flow of discussion does not deviate from the work. As you can see from the topic above, the questions provided in the pre-study include open questions, and there is no correct answer. It also consists of questions that are appropriate to internalize the problem and open questions that ask for opinions, which can be accessed by combining the contents of literary works with their daily lives.

Discussions of this class (May 25)

1. Describe the characteristics and relationships of the single bodies of the youth, leaving a memorable sentence.

2. Discussion Topic: \* Discuss the grounds for the topic in the work.

- What does the body of Alcibiades in the work mean and how does the body of the athlete today affect us and why is it highlighted?

- Where do contrast and what do they symbolize?

- What do you mean by the thorns and why do you think you do not remove the thorns on your feet?

Questions selected as the topic of discussion are based on exploring the content of the work and the intention of the artist, but in questions such as the body of a sports player affect us today and why is it perceived. It also provided an opportunity to internalize the problem presented in the work by providing an open question asking the student's personal opinion; it also prepared a question asking the student's thoughts on interpretation; it prompted the student to connect with a contemporary context. The reason for choosing such a topic was to create an environment in which

students can actively express their opinions based on problems and actively learn. In addition, the reason why this discussion topic was disclosed in the pre-study stage was to allow students to internalize the problem during the pre-study and to be faithful to the preparation for the class while being motivated to learn. It was important to remind students of the problem of indiscriminate use of chats. Because of the limited class time, it was necessary to effectively expose the problem of chats to students. By confirming that ChatGPT explains words that do not exist before the class starts, the researcher made students aware of the limitations and risks of ChatGPT. Compared their opinions and trillions of opinions on the topic of discussion, and introduced interesting ChatGPT answers. At the end of the semester, the students submitted the following three tasks (essay, chatty prompt submission, and survey).

1. Essay Writing: - Select one of the five works and write an essay. - Leave reference information as a footnote. - Use ChatGPT except that it is not recognized as a reference. - Deduct information when wrong.

2. Submitting and explaining ChatGPT prompts

3. Questionnaires on the use of ChatGPT Students were able to use ChatGPT to write assignments, but they had to follow the rules that they had to leave the above and bibliographic information. The reason for presenting these rules in essay writing was to prevent students from relying on chats to write assignments. It was in the same context that the task of submitting and explaining the prompt was given, and at the same time, it was intended to grasp more specifically how students use ChatGPT and how to develop their thinking. In addition, a survey was conducted on the use of ChatGPT in literature classes to analyze whether ChatGPT can be used as a learning tool in literature classes.

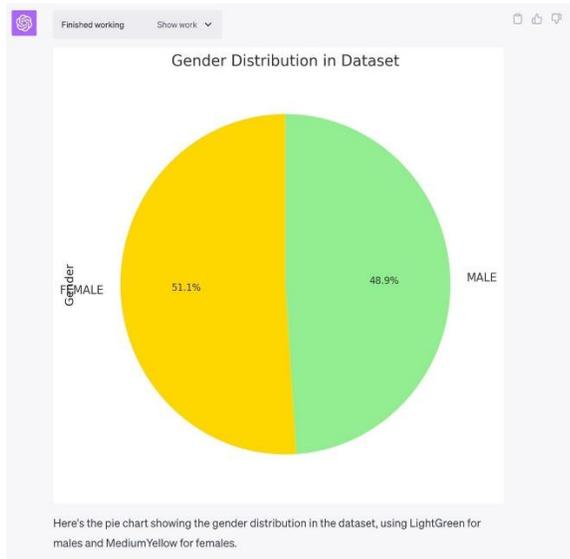


Figure 1: Gender Dataset

### 3.4. A Study on the Use of ChatGPT in the Basic Seminar of Literature

#### Survey Methods and Prompt Analysis of Learners

Questionnaires on the use of ChatGPT in literature classes were largely composed of three areas of questions about ChatGPT's class, preparation of tasks, and overall utilization. A total of 22 students participated in the survey, and the answers were calculated based on the opinions on the answers selected by the learners could be examined in detail through the descriptive answers. The reason for receiving the descriptive answer is that the survey was limited to 22 people and it was judged that there was a limit to generalize the statistics based on this. In particular, it is natural that individual students who use ChatGPT experience ChatGPT differently because of the characteristics of ChatGPT that provides different output value output according to the input value input of the prompt. Therefore, if the descriptive answers are combined, meaningful results such as learning effects according to various ChatGPT utilization methods can be obtained. In addition, the students submitted the prompt input value and the reason for inputting the essay task.

## 4. Analytical Result

### 4.1. ChatGPT and Learning Effects: A Survey of Basic Seminar Learners in Literature

Chapter 4 focuses on the effects of the interaction between ChatGPT and students on learning, information verification

process, effective AI literacy improvement conditions, and curiosity. The results of the survey provide important implications for the use of AI-based language models in educational contexts such as foreign literature education and PBL, and are expected to be a practical help for learners who are exposed to literature.

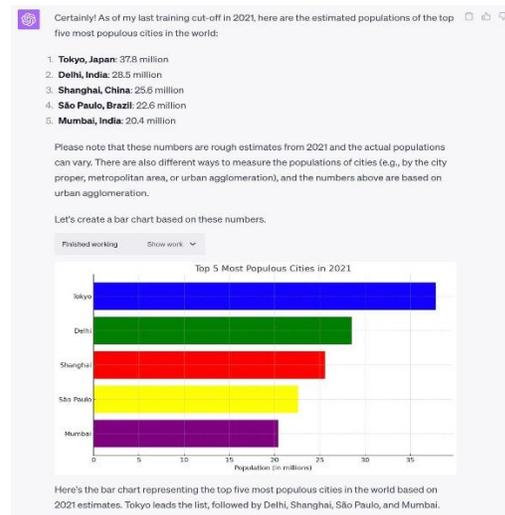
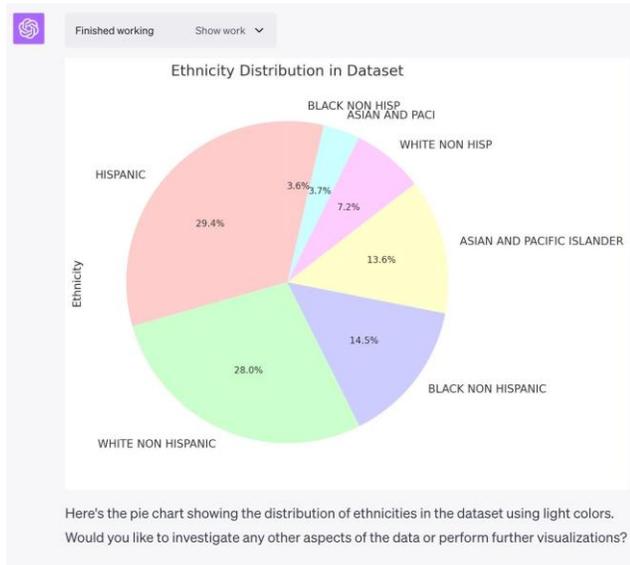


Figure 2: Estimate of Population

### 4.2. Interaction with ChatGPT: Peer Assessment Commonality with Learning

ChatGPT has the problem that the information and its source are not accurate. ChatGPT, which learns based on data and patterns, provides accurate answers in science and engineering fields that require accurate and structured information, such as solving math problems, basic programming questions, and questions with clear results such as scientific facts. On the other hand, in the humanities such as literature, philosophy, and art, subjectivity, complexity, and various interpretations are possible, and in the humanities, factors that cannot be measured by human emotions, experience, and intuition play an important role. There is a limit to getting. In particular, there is a performance difference in the translation of ChatGPT depending on the language input (GPT Development Forum 2023). As it operates based on the unique language model developed by OpenAI, ChatGPT infers the user's purpose from the Korean input value input to the prompt, collects information based on English-based data, and outputs the answer to Korea. Therefore, errors or omissions may occur in this process.



**Figure 3:** Ethnicity Dataset

For this reason, ChatGPT has limitations in providing students with sufficient information about literary works. As a result of a survey on the accuracy of the information provided by ChatGPT, only one out of 22 students answered that the information about the literature provided by ChatGPT was correct, 11 students were inaccurate, and 10 students were normal I replied. The students who answered "normal" explained that it depends on the type of question they enter or the recognition of the work. As a result of the overall survey on whether or not to verify the ChatGPT information, the students answered that they have verified the power information. As a result of the specific questionnaire, the students answered that they did not fully trust the information of ChatGPT. The students used website searches, books, and papers in their verification work, and found that they could not trust the information of ChatGPT and did not want to risk any deductions or plagiarism. What's interesting is that the verification process also included a re-search of ChatGPT. As a result of a questionnaire survey on whether or not to ask questions continuously, 21 out of 22 students said they had asked ChatGPT in succession, and one said they did not ask questions in succession. When students did not get the right answer, they checked and reconstructed their questions. In this process, students learned that they needed to enter specific data into the prompt to get better output, and they used the method of specifying questions by adding information such as keywords to the prompt to get answers in the desired direction. The students, on the other hand, said that when they pointed out the errors in the ChatGPT prompt, the chatty provided the answer in the direction they wanted. Furthermore, he/she challenged or refuted ChatGPT and he/she chose to enter what he/she knew into the prompt and

ask questions or search in other languages. From the evaluator's point of view, the learning method that goes through the verification process by correcting and criticizing ChatGPT answers is similar to the peer assessment method in which students evaluate each other. Peer evaluation encourages students to actively participate in the class. In the process of judging the accuracy of the answers provided by peers and providing feedback, students can gain a deeper understanding of the topic and improve their critical thinking skills. In addition, accepting peer feedback provides an opportunity to improve one's way of thinking (Sadler 2006) and enables self-directed learning (Kim Young-shin 2020). In fact, some students said they learned and learned more information to verify the information provided by ChatGPT in the survey. Of course, peer evaluation is not only a critical view of the other's opinions, but also a process of complementing each other's thoughts through the exchange of opinions among peers. In this regard, I was able to confirm the fact that some students supplement their judgments by using chats. The following are some of the students' narrative answers to the question, "Is there a difference between brainstorming alone and using GPT when performing a task?"

Student A. I was able to think more diversely than if I were brainstorming alone, and it was as if I felt like I was talking to one friend.

Student B. When I brainstormed alone, I didn't think about the question; when I used GPT, I had to think about the question, and I felt like I was discussing the topic with someone else, not alone.

Student C. There was a difference, and it was good because I was able to get some feedback on my thinking.

Student D has a difference. In the end, because GPT is AI, I think that GPT's answer is based on big data, so I think that GPT's answer is a lot of thoughts, and because I accept and accept it like the idea of myself and others, It was more fun and I could find new opinions.

#### 4.2. Utilizing Chatty in Discussion Classes: Improving AI literacy

The information provided by ChatGPT is incomplete, but students' use of ChatGPT cannot be prevented, and teachers must actively cope with this flow. Therefore, it is essential to educate students about AI literacy, the ability to use AI effectively so that they can make use of chats. Literacy, which refers to the ability to read and write, is recognized as an essential ability to interpret and communicate information beyond basic language skills. AI literacy has a tremendous impact on the ability of AI users to use AI, which is considered to be an important technology for users to obtain, analyze, and critically evaluate information

through AI. Therefore, in the AI literacy required for the use of ChatGPT, the ability to create a prompt, that is, the ability to configure effective questions or commands according to their intentions and needs, and the ability to critically view AI can be seen as key. In order to create an environment that is likely to affect the improvement of students' AI literacy, the researcher instructed students to use ChatGPT in discussion classes and to use it when writing assignments. In addition, in order to compare the effects of the use environment on learning, a questionnaire survey was conducted to compare the differences between the students' use of ChatGPT by themselves while writing assignments and the experience of using ChatGPT together as in the discussion situation in this class. According to a survey on differences in the use of ChatGPT, 18 out of 22 students felt the difference when using ChatGPT alone and when using it together in discussion classes. Among the 18 students, the majority of the descriptive questionnaires had the following in common.

Student A. There's a difference. There's no difference in the information that's provided, but when you use multiple people, each of them has a different follow-up question that comes to mind, so there's a difference that you can look at it from different perspectives. It is also an interesting difference that when you ask questions while providing information to GPT first, you can see that the choice of keywords is different.

Student B. I thought it would be much more efficient to use GPT together in a group setting, because we had different ways of asking questions on a common topic.

Student C. You can create sophisticated questions when you are in a room together, and you can ask a variety of questions regardless of time when you use it alone.

Student D. In the presence of everyone, the use of ChatGPT felt like there was one more person, so I was able to think a lot, but when I use it alone, I simply follow the idea of ChatGPT.

Student E. There was no particular difference. The process of searching for questions and getting answers was the same. It took a lot of time to find errors when I used it alone. It was nice to be able to hear each other's thoughts when everyone was together.

Student D's answer suggests that in the discussion environment, the output value of ChatGPT is more critical than when it is alone. Furthermore, student E mentions that there is no difference when using ChatGPT alone and when using it, but it also mentions an efficient output verification

process. In fact, students used search engines to find information or reread books when they had doubts, and some students solved the problem by re-searching ChatGPT in English, and asked questions directly to the instructor if they could not solve them. Through this environment, most of the students felt that the information about the literature provided by ChatGPT was less accurate and needed to be viewed critically. The use of chatty in discussion classes provided students with the opportunity to improve the essential aspects of AI literacy; through interaction with classmates, students were able to develop the ability to deeply analyze, evaluate, and utilize the data provided by the machine. ChatGPT can be used as a useful learning tool to develop students' comprehensive thinking ability by supplementing the limitations of ChatGPT by using it in the group discussion method.

### 4.3. ChatGPT Incorrect Answers and Students' Learning Motivation

ChatGPT is known as a liar. ChatGPT has a major drawback in its use as a learning tool in that it does not provide accurate information and sources. As mentioned in the previous chapter, there were a lot of students who believed that ChatGPT information was unreliable, and all of them had to verify the information. However, a large number of students said that ChatGPT is helpful for discussion classes and makes them interested in class. As a result of the questionnaire on whether the use of chatty was helpful in the class, 6 out of 22 students saw that ChatGPT was not helpful in the literature discussion class, and 16 were helpful. The students who did not think it was helpful saw that ChatGPT provided only the basic answers or gave the wrong answers and spent time searching and felt uncomfortable with the discussion. On the other hand, the most prominent factor among the various answers of the students who were found to be helpful was that ChatGPT provided information from a variety of perspectives. Students usually cut off the flow of the class and it is difficult to ask questions to the instructor, but ChatGPT can ask small questions that come to mind immediately, causing curiosity in the process.

Student A. It's intriguing. I feel it's intriguing, not because GPT's answers are amazingly creative or accurate, but because they're incorrect. Thanks to GPT, I became aware of the importance of accurate information, so I was able to find articles, read my works, and get a lot of information.

Student A. Curiosity increased. Curiosity increased as we gained a lot of relevant information through Internet search to verify GPT's answers.

Student B. Curiosity has increased, and if you get a strange

answer when you ask a question, it seems that you are more curious because you want to investigate more.

In fact, ChatGPT does not provide enough information about literature, but it tends to provide relatively accurate information about universally known information such as writers and historical backgrounds. Despite the lack of sufficient information on the work, the use of ChatGPT aroused students' curiosity about literature, which can be explained by Loewenstein's information-gap theory. Curiosity arises from the gap between knowing and wanting to know (Litman 2005). When you know something in part, but you do not fully understand or know it, that is, when the information is incomplete, unpleasant emotions are created. The process of resolving these emotions is the process of satisfying curiosity, which leads to the form of exploration, research, and learning. It sees a particularly small amount of information as a catalyst for amplifying curiosity (Loewenstein 1994). In particular, when there is no information or perfect knowledge, curiosity does not arise, and when there is an idea of the correct answer but there is no confidence in it, curiosity increases the most (Kidd, Hayden 2015). Therefore, it seems that students are stimulated by the partial, vague, and dubious answers provided by ChatGPT to conduct additional research on their own and start active learning activities. From this point of view, it can be concluded that ChatGPT contributes to motivating learning by inducing information gaps and stimulating students' desire to solve them.

#### 4.4. Prompt Input Value Analysis: Active Learning Using ChatGPT Characteristics

The method of using ChatGPT depends on the user and the environment surrounding the user, so the method of using ChatGPT depends on the purpose of use, language and knowledge level, and AI literacy level, and the output value obtained accordingly is inevitably different. So, it's hard to provide consistent guidance to all users, and you can't force it. Based on the results of surveys and prompt inputs submitted by students taking literature seminars, the researcher found a way for students to use ChatGPT as a medium for active learning in analyzing literature. Students submitted essays as a seminar task with the end of the semester, their ChatGPT prompt input values used in essay writing, and added explanations. The purpose of this study was to prevent students from copying ChatGPT answers as they are, and to analyze how they use them and how they use them in essay writing.

Student A. Basically, I went through a way to compare it with the contents of the work. "I read the work and asked GPT if I knew about the work first. And I checked the

information provided by GPT and the events and characters of the works I read and verified them through internet search.

The above student said that he did not fully trust the output value of ChatGPT and continued to search online, not just evaluating the output value based on his acquired knowledge. On the other hand, the student said that he found a way to get an accurate answer from ChatGPT in an answer that freely expresses his candid thoughts about the use of ChatGPT.

Student A. I felt the importance of the question in using ChatGPT. When I asked to tell me his ideal sport after presenting his ideas related to it, I was able to hear more specific and accurate answers. Through this, I learned that in order to get the right answer, I have to subdivide the question and present a specific situation so that the chatbot can present the answer in that situation.

According to the above explanation, the student has excellent AI literacy. "The student verifies the information provided by ChatGPT in Questions 1 and 2. When a student who has already learned about the work asks such a basic question, it can be seen as a process of confirming that ChatGPT has enough information to continue the discussion in order to use the output value for the next question. There is no proper information about the work, but since the information about the artist is secured to some extent, the student continues to focus on the artist in question 3.

## 5. Discussion

So, to improve that accuracy, students' AI literacy must inevitably improve. AI literacy includes the ability to verify information and the ability to utilize chats. In order to improve students' ability to verify information, students should become active learning subjects as the goal of traditional teaching methods is strengthened. However, what I would like to emphasize is the importance of knowledge transfer, which is the goal of traditional teaching methods, but it does not suggest a return to traditional teaching methods. This is because students' AI literacy is improved through students' active learning attitudes, and traditional teaching methods tend to change learners passively. This researcher sought a way to improve students' AI literacy, arouse students' curiosity, foster active learning attitudes, and prevent the misuse of ChatGPT and suggested the following group discussion classes designed by mixing PBL classes and flipped learning and the use of ChatGPT in them.

## 6. Conclusion

The purpose of this study is to examine how ChatGPT can function as an effective learning tool and what role it can play in the field of literature based on the case of university students in the first semester of 2023 using ChatGPT in the basic seminar of literature, student surveys, and prompt analysis. Although it is difficult to say that the survey results represent the entire population because 22 students participated in the survey, the students' descriptive answers provided clues on how to use them effectively, and through the prompt analysis of students with excellent AI literacy, I was able to present directions for class design to utilize ChatGPT as a learning tool in the future. According to the results of this study, the students questioned the output value of ChatGPT and conducted the verification themselves, which provides the educational effect of improving the critical thinking ability and self-directed learning ability of the students. In particular, the use of chatty in PBL discussion class was effective for students to detect errors and to encourage students to verify information and develop critical thinking. Furthermore, students contributed to improving the quality of prompts through mutual exchange and cooperation. On the other hand, ChatGPT provoked strong curiosity among students through inaccurate answers, which motivated students to learn. As such, the teaching method using ChatGPT has paved the way for improving students' AI literacy. While the introduction of AI tools such as ChatGPT in education has the potential to improve the quality of learning, the effect is bound to be based on AI literacy, which allows students to correctly understand and appropriately utilize technology. According to the results of the survey, students were able to divide the purpose of entering the ChatGPT prompt into information search and discussion. As expected, the output of literature was inaccurate to use ChatGPT as a tool for simple information search

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