

A Study on the Development of AI Utilization Guide Components at a Christian University

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Abstract

Purpose of Research : Since ChatGPT's 2022 release, the educational sector faces mixed reactions to generative AI, sparking innovation but raising concerns about student cognition and communication. While Christian colleges employ AI reflecting their values, secular institutions stress ethical usage. This study explores ethical AI use in these settings, aiming to integrate findings into educational practices.

Research content and method : Analyzing AI use and ethics guidelines from 50 domestic and international universities, differences between Christian and secular institutions were explored. Data was categorized, conceptualized via open coding, and components were identified through axial coding. The importance of components for Christian colleges' AI guides was assessed based on the initial data and previous research, leading to the development of tailored AI utilization components for Christian universities.

Conclusion : Studies revealed secular institutions have six AI guide components, while Christian colleges found seven in both utilization and ethics guides, focusing on truthfulness, responsibility, and diversity. Emphasizing the need for ethical AI use in Christian colleges, the findings advocate developing AI ethics guidelines to aid marginalized groups and establish a new educational paradigm through further research.

Key Words

Christian University, AI Ethics Guide, AI Utilization Guide, ChatGPT, Generative AI

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기독교대학의 AI활용가이드 구성요소 개발 연구

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논문 요약

연구 목적 : 2022년 11월 ChatGPT 출시 이후 교육 현장에서 생성형 AI에 대한 우려와 흥미가 교차하면서, 학습 방식과 교육 자료 개발에 새로운 혁신을 가져왔으나, 동시에 학생들의 사고력 및 의사소통 능력에 대한 우려를 낳았다. 기독교대학은 기독교적 세계관을 반영한 교육 도구로서 AI 활용을 명시한 반면, 일반 교육 기관은 정보의 편향성 및 지속적 필요성에 대한 윤리적 접근을 강조했다. 생성형AI가 제공하는 서비스 중 내용의 정확도를 충분히 검토하지 않은 사례가 빈번해지고 윤리관련 이슈가 언급되는 시점에 기독교 교육현장은 이를 가볍게 여길수 없는 중요한 문제가 되었다. 이에 본 연구는 교육기관과 기독교대학의 AI사용에 관하여 윤리가이드의 현황을 연구하고 구성요소를 찾아 기독교대학 AI활용가이드의 구성요소를 탐색하고 이를 교육 현장에 반영하고자 한다.

연구 내용 및 방법 : 국내외 50개 대학 및 교육 기관의 AI 활용 및 윤리 가이드라인을 분석하여, 기독교 대학과 일반 교육 기관의 가이드라인에서의 차이점을 탐색했다. 수집된 자료는 특징에 따라 분류하였고 개방 코딩을 통한 개념화를 하였으며 축 코딩을 통한 구성요소를 추출하였다. 분석된 자료는 최초 수집된 50개의 자료의 포함 정도와 선행연구에 따라 채점식으로 구성요소의 중요도를 분석하여 최종 기독교대학의 AI활용가이드 구성요소를 개발하였다.

결론 및 제언 : 연구결과, 일반교육기관에서 6개의 AI활용가이드 구성요소를 확인하였고 AI윤리가이드는 7개의 구성요소를 확인하였다. 기독교대학에서는 7개의 구성요소를 AI활용가이드와 윤리가이드에서 각각 확인하였다. AI윤리가이드는 진실성, 윤리적 책임감, 정보보안, 표절위험, 다양성, 편향적, 저작권보호가 확인 되었다. 연구결과를 토대로 기독교 대학의 AI의 윤리적 사용, 새로운 교육 패러다임의 정의, 소외 계층 교육 지원 등에 대한 연구로 확장하여 기독교 대학 내 AI 윤리 가이드라인 개발의 중요성을 알리고 추가적인 사례 연구를 통해 교육 현장에 실질적 도움을 줄 수 있는 기반을 마련하고자 한다.

〈 주제어 〉

기독교대학, AI윤리가이드, AI활용가이드, ChatGPT, 생성형AI

I. Introduction

Following the official release of ChatGPT in November 2022, the educational sphere experienced a mix of apprehension and excitement, marking the start of the semester with a blend of fear and anticipation. The deployment of generative AI in educational settings sparked heated debates between proponents of its prohibition and those advocating for its active use, exacerbating confusion in the learning environment. Arguments proliferated that while AI could aid academic endeavors, it might also accelerate the decline in critical thinking opportunities and the further regression of communication skills, a concern post-COVID, challenging even basic socialization for the upcoming generation. Fundamental inquiries regarding the essence of learning and education were raised in relation to the permission and utilization of AI(Son, 2023; Yang, 2023; Jang, 2023).

In response to the utilization of generative AI by educators, educational institutions worldwide began to swiftly develop guidelines on how this new technology could be used effectively and ethically. Leading this initiative, Korea University, among other domestic universities, took serious account of AI misuse cases and crafted their own guidelines. These guidelines encompass a broad range of ethical perspectives applicable to both students and researchers, with similar frameworks being released by institutions like Ewha Womans University and Sungkyunkwan University(Kim, 2023).

Just as the educational landscape evolved with the advent of the internet, moving beyond the era of learning through search, some educators hold a romantic view that generative AI can further solidify learning processes. However, the indiscriminate use of generative AI in assignments and exams prompted research into fair assessment methods. Frequent misuse without adequate verification of content accuracy and concerns over copyright and ethical issues have been noted (Nam, 2023; Son, 2023; Yoo, 2020).

In the context of Christian higher education, there has been a necessity to formulate ethical guidelines for the use of generative AI that adhere to more rigorous standards than those typically found in secular institutions (Jang, 2023). The integration of advanced technologies such as autonomous vehicles and gen-

erative AI into various sectors has led to a heightened focus on education that emphasizes technological skills. This shift risks creating a vacuum in the education on the ethical and moral implications of technological advancement, potentially magnifying the negative societal impacts of such technologies. Consequently, it becomes imperative to establish Christian ethical guidelines based on Biblical teachings to navigate the application of science and technology (Kim, 2022). Given the commandment against lying among the Ten Commandments, the misuse of AI represents a significant issue that cannot be overlooked in Christian educational settings, necessitating a strict adherence to these Biblical principles in the exploration and implementation of AI technologies.

Therefore, the research aims to investigate the current state of AI ethics guidelines in educational and Christian universities, identify key components, and explore how these elements can be incorporated into educational settings to offer guidance to students, educators, and researchers. The research questions are as follows:

Research Question 1:

What is the current status of AI ethics guides in Christian University?

Research Question 2:

What is the current status of AI ethics guides in educational institutions?

Research Question 3:

What are the components of AI ethics guides?

II. Theoretical Background

1. Understanding Christian Universities

Christian universities serve as higher education institutions grounded in a Christian worldview, exploring academia within a Christian academic community. The impact of Christian universities in South Korea on higher education, society, and the church is considerable. The history of modern higher education in Korea can be equated with the history of Christian universities, with institutions

like Gwanghyewon and Baehwa School marking the beginning of higher education. However, Soongsil University, established in 1906 with official approval from the Korean Empire and the Governor-General's office, is considered the inception of higher education in Korea(Cho, 2006).

As educational communities aiming to cultivate leaders imbued with Christian values to navigate the rapid changes in society, Christian universities aim to develop leaders who can influence through a holistic education encompassing various subjects. The educational philosophy of domestic Christian universities includes truth, love, service, piety, practice, a holy life, Christian character education, and love for neighbors, indicating that the main elements in realizing the educational philosophy of Christian universities are related to character education(Lee, 2017).

Christian universities should be communities that support freshmen in forming faith that seeks meaning and purpose in a morally complex world. Instructors should provide spiritual guidance that allows students to reflect on meaning, purpose, and faith(Park, 2022). Christian colleges serve as formal educational institutions that cultivate future talents based on Christian values grounded in Biblical teachings. However, there is a lack of pedagogical models that facilitate the application of Biblical teachings to individuals' lives through reflective faith practice(Jang, 2023; Ham, 2015). Adhering strictly to traditional face-to-face education or viewing online education as supplementary poses a risk of failing to adapt to future educational changes. Amid confusion caused by the indiscriminate misuse of unverified materials through IT-based smart learning AI, Christian universities face challenges in operating curricula that can respond to changes while being a focal point of communication in the era based on the teachings of the Bible(Yoo, 2020). The advent of artificial intelligence introduces new ethical queries into the human-machine relationship, highlighting the necessity to perceive AI as a socially functional entity and to explicitly define its moral status and role. This critical discourse, encompassing the essence and the broader spectrum of human life, may encounter constraints within secular academic settings, necessitating thorough examination within Christian academic institutions (Yoo, 2019).

Digital technology has become not just a tool to aid learning but a driving force in education. The methods of obtaining and using information have already changed, bringing significant transformations to the structure and implementation of education. Facing the realization of even greater changes, the required competencies and the ideal of talent demanded by the era are inevitably different from the past. As the development of specific competencies and talents required by each era is one of the primary goals of education, the educational system must adapt to and embrace these changing currents(Oh & Kim, 2023). Therefore, Christian universities need to diagnose the university education environment, understand the flow of changes, and present a roadmap that can respond to the paradigm shift in the educational field based on the Christian spirit to produce new era talents.

2. Artificial Intelligence and Generative AI

The history of artificial intelligence (AI) begins with Alan Turing's 1950 paper, which explored the potential of AI and laid the foundation for modern computer architecture. From the 1970s, corporations focused on statistical techniques, with data mining and big data technologies evolving as tools to solve inefficiencies in industry. The advent of deep learning marked a rapid evolution of AI (Samsung SDS, 2017). Technologies such as the metaverse, blockchain, and NFTs gained widespread attention and quickly became mainstream through online dissemination. One of the major topics in 2023 is generative AI, such as ChatGPT, which saw rapid user growth shortly after its release. Various generative AIs including OpenAI's DALL-E, Google's LaMDA, Stability AI's Stable Diffusion, and Microsoft's Bing Image Creator have expanded the technological domain. These technological advancements have significantly impacted the change and development of educational content, with internet speed enabling the development and spread of content including images, videos, voice, AR, and VR(Hong, 2023).

The arrival of a "contactless" society where online communication prevails was anticipated with the development of networks, but the spread of COVID-19 significantly accelerated this change. Students entering university during this period,

familiar and preferring communication via text messages or smartphones, adapted to a new learning environment with no aversion to remote online courses (Kim, 2020; Yoo, 2020). Especially, students from the new generation accustomed to online non-face-to-face courses are more receptive to such technologies, using them to enrich their learning experiences. The advancement of generative AI is bringing revolutionary changes to educational methods and communication styles, playing a crucial role in predicting future educational trends(Choi, Lee & Han, 2023; Cheon, 2023; Han, 2023)

In educational settings, text-based GPT AI is officially and often unofficially used across all curriculums for its ease of access and utility in writing. While its use and application can be understood from an efficiency perspective, concerns arise about its potential threat to the understanding of the world through basic academic elements of reading and writing and the growth of individual learning abilities(Son, 2023; Lee & Park, 2023). While technological advancement offers a positive outlook on liberating humans from suffering and providing a prosperous world, the misuse of generative AI could lead to the unfortunate elimination of the thought process in learners and the loss of unique human existential conditions. There's a need to explore a new direction where life unfolds diversely within the interaction between humans and technology, rather than a life defined and dependent on technology (Yang, 2023; Oh & Kim, 2023).

In the United States, there is an increasing focus on employing artificial intelligence within the educational sector. 'Online University' has introduced various applications of AI, such as automated grading, tailored educational programs for students, and recommendations for schools and majors. In the United Kingdom, the strengthening of AI and computing education is being supported by both government and major corporations. Germany, on the other hand, is placing a strong emphasis on the cultivation of professionals in the natural sciences, enhancing education in mathematics, information technology, natural sciences, and engineering, and implementing an interdisciplinary curriculum that integrates computer science AI with other subjects(Jung, 2023).

Universities are utilizing generative AI as a teaching-learning tool to collect and organize learning materials. However, generative AI provides services based on

probabilistic data, making the accuracy of its content unreliable. In the arts, it can mimic the style of specific individuals' works. Since creative activities are presented based on collected data, the use of generative AI without disclosure in exams and assignments can lead to ethical issues related to cheating and plagiarism (Yang, 2023; Jang, Kim & Choi, 2023). Therefore, in-depth discussions and research on guidelines regarding the use of AI in classes, the extent of its permissible use, and measures for rule violations are required.

As examples of AI ethics and utilization guides distributed by educational institutions in South Korea, in the case of national universities, Busan National University was the first to prepare an "AI Utilization Guideline". Among private universities, Korea University distributed the "Basic Utilization Guidelines for AI, including ChatGPT", and in the case of theological colleges, Assemblies of God Theological University(ACTS) announced the "ACTS Teaching and Learning Generative AI Utilization Guidelines". Beyond higher education institutions, there are examples from provincial and metropolitan education offices in South Korea. From 2022 to 2024, various educational institutions have independently developed and shared AI utilization and ethics guidelines with educators and learners.

III. Research Method

1. Research Method

To achieve the purpose of this study, the grounded theory qualitative research method was applied. Developed by Glaser and Strauss, grounded theory refers to "a theory that comes systematically from the collection and analysis of data through the research process"(Strauss & Corbin, 2001, 11). This method is very useful as a qualitative research method for eliciting new perspectives in areas where little is known about a particular social phenomenon or even in researched fields. The unit of theoretical analysis can be events, stories, cases, etc., not necessarily human participants(Schreiber & Stern, 2003; Lee & Kim, 2012; Lee & Lee, 2007). Thus, the qualitative research method based on grounded theory has been conducted to study non-contextual and non-linear cases

such as hospital medical disputes, education for students with disabilities and experiences of special education teachers, and areas of Christian mission studies(Kim, 2012; Kwon & Choi, 2011; Bae, Lee & Na, 2012). The integrated components of AI ethics guides for Christian colleges are almost unknown to date, and as units of analysis, some materials distributed by domestic and international universities and provincial and metropolitan offices of education can be explored as cases.

2. Research Subjects

In this study, cases for developing the components of AI ethics guidelines for Christian colleges were selected from examples distributed by educational institutions both domestically and internationally. During the collection of selected materials, three distinct characteristics were identified for consideration in the classification and analysis phases. First, it was confirmed that the titles of the guidelines established by educational institutions as AI has developed can be broadly classified into 'Ethics Guides' and 'Utilization Guides'. Second, it was found that many guidelines were established by referencing AI guides issued by higher authorities such as UNESCO, the European Union, the Ministry of Education, and the Ministry of Science and ICT, as well as existing AI examples from other institutions. Third, it was discovered that there are few examples of AI ethics and utilization guides established by Christian colleges among those from domestic and international educational institutions. To address this research problem, the collected data were explored and classified into both ethics and utilization guides. During the data analysis process, content that presented AI ethics guide examples from higher authorities and other institutions was partially excluded, and unique concepts were selected. Lastly, the collection was classified into Christian colleges and non-Christian(general) educational institutions. The scope of Christian college cases includes those founded on Christian principles or those influenced by Christianity during their establishment. A total of 50 guides were collected, and the detailed contents are as follows in the table.

〈Table1〉 Case Studies on AI Ethics and Utilization Guides

	Type	Christian University	General Educational Institution
Korea	Univ	ACTS, Ewha Womans, Sejong, Chungang, Kyungbok	Konkuk, Kyunghee, Korea, Kookmin, Busan, Sungkyunkwan, Korea Transp
	Edu Ins	-	Ministry of Education, Gyeonggi, Gyeongbuk, Busan, Seoul, Chungnam
Japan	Univ	-	Meiji, Osaka, Tohoku, Waseda, Musashino
	Edu Ins	-	文部科学省
USA	Univ	Arizona state, Calvin, Yale, Boston, Princeton, Temple, Harvard, Stanford, Chicago,	Alabama, Snta Clara, N.Carolina, California L.A, Michigan, California BKLY, Lasalle
	Edu Ins	-	Unesco
UK	Univ	Manchester, Oxford	Edinburgh, London, Ulster, Glasgow, Essex
	Edu Ins	-	Russell Group
Total		16 collected	34 collected

The content of UNESCO's Education 2030, "ChatGPT and Artificial Intelligence in Higher Education," was utilized as analytical material for this study. Additionally, while the Ministry of Education and regional education offices are involved in secondary education, it is considered appropriate as analytical material for this research since they are educational institutions where students who will enter universities in the future are being educated.

3. Research Procedure

To develop the components of the AI Ethics Guide for Christian Universities, the research process began with an examination of the theoretical background. Cases from 19 domestic universities and educational institutions, and 31 international universities and educational institutions, totaling 50 cases, were collected and classified. The collected cases were classified reflecting the characteristics of the data, from which concepts regarding AI utilization and ethics were extracted. The extracted elements were categorized using open coding. Axial coding was then performed to further compress and categorize the meanings con-

structured through open coding, leading to the final derivation of components for AI ethics guidelines. The procedure of the research conducted in this study is illustrated as follows

[Figure 1] Research Procedure

Data Collection and Classification	Data Analysis	Conceptualization through Open Coding	Extraction of Components through Axial Coding	Extraction of Component Importance Based on the Inclusion Extent of Collected Data	Development of AI Ethics Guide Components for Christian Universities
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4. Analysis Method

The data analysis of AI ethics guides from domestic higher education institutions and provincial/municipal education offices utilized the systematic approach proposed by Strauss and Corbin (2001) in their qualitative research method, grounded theory. This involved using open coding and axial coding methods derived from data collected and analyzed throughout the research process. Firstly, in the open coding process, the data was read repeatedly, assigning concepts to content deemed meaningful. Concepts were quoted directly from the data or modified to accurately reflect their meanings. Similar or related concepts were grouped and categorized. Secondly, during the axial coding phase, a category analysis based on paradigms was conducted. Categories identified in open coding were connected and nomothetized, continuously comparing and revising when new thoughts or meanings emerged, examining the relationships between categories. This involved repeatedly reading and organizing the collected AI ethics and utilization guide data, taking notes, and continuously reviewing among researchers, with the coding processes being iterated and analyzed continuously.

In this study, collected AI ethics and utilization guide data were categorized and conceptualized through open coding, followed by categorization around similar concepts via axial coding. Subsequently, to evaluate the categories derived

through axial coding, a scoring method was applied based on the criteria for evaluation, indicating the level of presence in the collected 50 pieces of data, ultimately extracting components according to their importance

IV. Research Results

1. Open Coding Results of AI Utilization Guide

To achieve the objectives of this study, cases collected were categorized into Christian colleges and general educational institutions, and open coding was conducted separately for each. Through this process, a total of 307 concepts were extracted from general educational institutions, and 170 concepts from Christian colleges. During data collection, existing guidelines were categorized into 'AI Utilization Guide' and 'AI Ethics Guide', leading to the separation and extraction of concepts for both categories in general educational institutions and Christian colleges. The process began with extracting concepts for the 'AI Utilization Guide' from general educational institutions, integrating similar concepts. For instance, to conceptualize 'Including AI utilization instructions in the syllabus,' the same concept was extracted from 9 educational institutions.

〈Table 2〉 Results of 'AI Utilization Guide' in General Educational Institutions

Open Coding Conceptualization	Concept Extraction Examples
Include AI guidelines in syllabus	Syllabus must clearly state guidelines
Verify outcomes' truth	Verify truthfulness procedure needed.
Should not blindly trust the results	Do not blindly trust the outcomes.
Discuss result generation	Judge AI answers' veracity accurately.
Use equitably	Support equal access to all versions.
Teacher decides allowance	Use within instructor-approved areas.
AI strategy for majors needed	Confirm purpose and learning values.
Use must match university aim	Preserve university's unique purpose.
Should not be outright rejected	Adopt accepting stance, not rejection.
Problem-solving abilities may decline	Enhance problem-solving skills.

Open Coding Conceptualization	Concept Extraction Examples
Presence of inaccurate information	Beware of potential inaccuracies.
May reduce critical thinking	Critical thinking abilities.
Must engage in critical thinking	Engage in critical thinking.
Guarantee AI use right	Ensure educational equality.
Use AI as educational tool	Use AI as creative tool
Set class standards	Set class-based standards.
Must be used age-appropriately	Use with consent and age-appropriately.
Introduce how to use	Share available methods of use.
The role of humans is important	Humans responsible for final judgment.
The ability to question is crucial	The ability to question.
A reconfirmation process is necessary	Review AI results before use.
Must verify accuracy	Beware of incorrect data.
Must be used proactively	Learner initiative is necessary.
Should not overly depend on it	Limit AI as conversation partner.
For intellectual growth	Use to unlock human growth potential.
May lower creativity	Creative thinking abilities.
May miss latest info	Latest info may be missing.
Share AI tool info	List AI tools for learners.
Must accurately indicate sources	Explain result utilization clearly.
Need transparency	Maintain transparency in explanations.
Use transparently	Explain whether any AI tools were used.
Base on data	Evaluate based on empirical data.
Introduce evaluation methods	Evaluate information's accuracy.
Must know how to input prompts	Learn high-quality prompt use.
Must adhere to academic principles	Present AI use principles.
Follow teacher's guide	Follow instructor's AI guidelines.
Should disclose whether it was used	State AI use in submissions.
Show use range	Present the scope of possible uses.
Must guide precautions when using	Create rules that include precautions.
Must know what AI can and cannot do	Discuss AI's limits and benefits.
Conduct AI-related education	Prevent academic integrity violations.
Preserve creativity	Gain new insights through creative thinking.

Open Coding Conceptualization	Concept Extraction Examples
Follow AI trends	Keep up with AI updates.
Must understand the principles of AI	Understand generative AI principles.

The process of extracting and integrating concepts from the 'AI Ethics Guide' of general educational institutions was carried out. For example, to conceptualize 'Must be utilized with an ethical consciousness,' the same concept was extracted from 11 educational institutions. The other results are summarized in Table 3.

〈Table 3〉 Results of 'AI Utilization Guide' in General Educational Institutions

Open Coding Conceptualization	Concept Extraction Examples
Ensure uniqueness, diversity	Ensure individuality and diversity.
Benefit individuals, public	Use for social welfare and humanity's good.
Avoid personal data	Mind personal info protection.
Direct use equals plagiarism	Submitting as is equals plagiarism.
Avoid misconduct	Plagiarism seen as misconduct.
Explain the scope of misconduct	Describe the scope of misconduct.
Utilize for mutual respect and growth	Foster growth with respect and consultation.
Take AI ethics pledge	Take an AI ethics pledge first.
Skip confidential topics	Avoid confidential info.
Must provide education on ethical use	Educate to prevent ethical issues.
Utilize with ethical consciousness	Use AI ethically.
Copyright infringement could occur	Check for copyright risks.
IP rights may be an issue	Beware of IP rights issues.
Must be used responsibly	Use tools responsibly and meaningfully.
Share AI tool info	List AI tools for learners.
Ensure safety against infringement	Avoid risks and infringements.
Biased information acquisition	Beware of enhancing biases.
Plagiarism tools flawed	Plagiarism prevention programs can be used.
Beware plagiarism risk	Maintain academic integrity.
Avoid violent/sensational content	Do not create violent/sensational content.
Heed academic integrity	Ensure academic rigor and truthfulness =
Must have academic honesty	Must possess academic honesty.

Open Coding Conceptualization	Concept Extraction Examples
Do not manipulate false facts	Beware of info manipulation.
User bears responsibility	Creator owns outcome responsibility.
AI may harbor fixed perspectives	There is a risk of reinforcing stereotypes.

The process of extracting and integrating concepts for the ‘AI Utilization Guide’ at Christian colleges was conducted. For example, to conceptualize ‘Must align with university education objectives,’ the same concept was extracted from 2 educational institutions. The other results are as shown in Table 4.

〈Table4〉 Results of ‘AI Utilization Guide’ in Christian Universities

Open Coding Conceptualization	Concept Extraction Examples
Must be specified in the syllabus	Decide on AI usage through the syllabus.
Implement personalized education	Aim for personalized education.
Educate on outcome analysis	Educate on discerning information.
Reconfirm results process	Review and use outcomes selectively.
Introduce empirical methods	Use empirical data in assessments.
Provide fair opportunities	Strive to provide fair opportunities.
Lower the possibility of misconduct	Change procedures for assignments.
Teaching methods research	Adapt to new teaching methods.
Instructors develop content	Instructors develop materials with AI.
Everyone should have the right to use	Ensure the right to use generative AI.
Cooperate in AI use	Accept changes positively.
Align with education goals	Align with educational goals.
Boost digital competencies	Focus on enhancing digital competencies.
Literacy education is necessary	Highlight literacy education importance.
Should not blindly trust	Do not blindly trust.
Presence of inaccurate information	Generated info may be inaccurate.
Must be used critically	Exercise critical thinking abilities.
Critical thinking abilities required	Critical thinking.
Use AI wisely in teaching	Use discerningly in light of teaching methods.
Disclose tools, limits	Be transparent about tools.
Can be used if previously agreed upon	AI use must be agreed upon.

Open Coding Conceptualization	Concept Extraction Examples
Used for mutual cooperation	Use AI with cooperation and diversity.
Smooth academic paths	Use for academic excellence.
Must clearly disclose sources	Appropriately disclose sources by oneself.
Provide useful aspects	Share AI benefits by the university.
Prioritize human growth	Aid intellectual development with AI.
Can be autonomously utilized	Autonomously choose and utilize.
Use as per major's traits	Meet the requirements of the major.
Responses not always accurate	Outcomes are not always the accurate response.
AI for knowledge inquiry	Use as a tool for proactive knowledge inquiry.
Must specify precautions	Clarify AI learning objectives.
Must engage in creative thinking	Express creativity with AI.
Creative activities aid	Aid creative activities.
Clearly indicate sources	Clearly indicate sources.
Misconduct if no citations	Cite sources to avoid misconduct.
Keep info updated	Stay updated on trends.
Share evaluation criteria	Develop/share grading criteria.
Understand prompt utilization methods	Use prompts for quality outcomes.
Must possess academic honesty	Indicate AI use for honesty.
Use within permitted levels	Use within allowed levels.
Used for collaboration	Promote learner collaboration.
Share AI use transparently	Discuss AI usage openly.
Enhance efficient learning	Support effective and efficient learning.
Comply with AI-related regulations	Adhere to regulations regarding AI use.
Be aware of what AI can and cannot do	Know AI's limits and capabilities.
Discuss AI in assignments	Discuss based on AI assignments.
Should not depend on AI	Don't solely rely on AI knowledge.
Use AI features positively	Positively utilize AI features.

The process of extracting and integrating concepts for the 'AI Ethics Guide' at Christian colleges was also conducted. For example, to conceptualize 'Need for personal information protection,' the same concept was extracted from 2 educational institutions. The other results are as shown in Table 5.

〈Table 5〉 Results of Concept Extraction for 'AI Ethics Guide' in Christian Universities

Open Coding Conceptualization	Concept Extraction Examples
Privacy protection is necessary	Info security and data protection needed.
Outcomes responsibility on user	User responsible for outcomes.
Must pursue the public interest	Use for future citizens' happiness.
Respect individuality and diversity	Respect everyone` individuality and diversity.
Must protect confidential data	Protection of confidential data.
Respect diversity	Diversity must be respected.
Be aware of negative impacts	Be aware of potential negative impacts.
Prevent misconduct	Must ensure that misconduct does not occur.
Protect personal info	Remember data protection in use.
Disclose tools, limits openly	Disclose tools and limitations openly.
Detection control impossible	Detection tools not perfect, use cautiously.
Must utilize ethical guidelines	Utilize ethical guidelines.
Must provide ethical education	All members must be ethical.
Consider copyright issues	Consider copyright issues.
IP issues may arise	IP issues may arise.
Strive not to violate truthfulness	Strive not to violate truthfulness.
Education needed for responsible use	Educate for responsible use regularly.
Must be used responsibly	Must adopt a responsible attitude.
Be wary of bias	Beware knowledge homogenization and bias.
Strive to prevent plagiarism	Strive to prevent plagiarism.
Must possess academic truthfulness	Possess academic truthfulness.
Be mindful of AI-based criminal acts	Be cautious of AI-based phishing.

2. Axial Coding Results from Open Coding

The process of conceptualizing through open coding was conducted to integrate similar concepts for categorization. For instance, the conceptualized categories such as ① Must be used in accordance with the university's unique purpose ② Need for AI utilization strategies that match the university majors ③ Recognition and use of generative AI as an educational tool were determined to include similar areas(Na, 2023; Han, 2023). Therefore, it can be integrated into the use

of generative AI according to the purposes of the educational institutions. As a result, the components of the AI Utilization Guide and AI Ethics Guide at Christian colleges were each composed of 7 elements, while the components of the AI Utilization Guide at general educational institutions were composed of 6 elements, and the AI Ethics Guide was composed of 7 elements. The specific results are as shown in Table 6.

〈Table 6〉 Summary of Axial Coding Results

Institution Type	Guide Type	Axial Coding Results
General Edu Institutions	Utilization	Institutional Purpose, Principle-based, Class Appropriateness, Developmental, Humanity, Accuracy
	Ethics	Ethical Purpose, Responsibility, Copyright Protection, Information Security, Plagiarism Risk, Bias, Truthfulness
Christian university	Utilization	Institutional Purpose, Principle-based, Educational Tool, Collaborative Tool, Class Appropriateness, Humanity, Accuracy
	Ethics	Diversity, Responsibility, Copyright Protection, Information Security, Plagiarism Risk, Bias, Truthfulness

The integrated components through axial coding total 16. Beginning with the components of the AI Utilization Guide for general educational institutions, the first is 'Institutional Purposefulness'. This involves a comprehensive approach to what education should be provided to achieve the unique purpose of educational institutions, considering the educational objectives, goals, content, and assessment at the course level, as confirmed in studies by Na Su-ho (2023) and Han Hyun-jong(2023). Next is 'Appropriateness for Instruction'. This was verified through research examining educational cases using generative AI in various university courses by Lee Young-eun(2023). Following is 'Developmental Use', emphasizing the need for continuous attention to utilize new technologies with the rapid advancement of AI technology, supported by research by Son Dal-im(2023). The next component is 'Humanity', highlighting the importance of human capacities such as language usage, critical and logical thinking—abilities that machines cannot replicate—suggesting that humans should lead and produce creative outcomes through interaction, as found in research by Nam Bora, Shim Changyong,

Kim Hye-ryun and Choi Heek-yung(2023). The next component is 'Accuracy'. Inaccuracies in AI-based education can negatively affect learning outcomes, thus examining the degree of accuracy in foreign language translation, mathematics problem-solving, etc., research by Kwon O-nam, Oh Se-jun, Yoon Jeong-eun, Lee Kyung-won, Shin Byung-cheol, Jung Won(2023), and Yoon Yeo-beom(2023) confirms 'Accuracy' as a critical concept in AI utilization.

Continuing with the components of AI ethics guidelines for general educational institutions, the first is 'Ethical Purposefulness'. This implies that AI should be used with an ethical purpose, considering ethical morality, human dignity, and issues of inequality in pastoral activities, or addressing social responsibility and research ethics in research activities, supporting studies by Son Hwa-cheol(2023) and Jang Jae-ho(2023). Next is 'Responsibility', meaning that generative AI should be used with a sense of ethical responsibility. The educational sector is emphasized to spread various guidelines for responsible use of AI and to comply with responsible technology ethics, as confirmed in studies by Song Eun-jung(2023) and Yang Eun-young(2023). The following component is 'Copyright Protection', supporting studies by Shin Hyewon, Lee Jungwook, and Kim Hee-ra (2023) that mention the lack of copyright markings on ChatGPT, which may lead users to unknowingly infringe upon copyright. Next is 'Personal Information Security'. This component highlights the need for ongoing research to establish appropriate principles and standards for personal information protection amidst the continuous implementation of various AI services, including medical activities, as mentioned in studies by Shin Young-jin(2021) and Lee Soo-kyung(2023). The next component is 'Plagiarism Risk', supporting studies by Nam Hyung-doo(2023) and Cho Eun-young, Kim Ji-yoon(2023) that suggest continuous follow-up research activities on acts of misconduct that could affect copyright infringement, business obstruction, and even plagiarism in the era of coexistence with artificial intelligence. The next is 'Bias'. The importance of this component was confirmed through studies by Kim Yu-jin, Kang Jo-eun, Kim Han-seam(2023), which attempted to produce value-neutral outcomes by combining prompts in various ways to reasonably interpret and decide the degree of political bias as desirable future citizens. Lastly, 'Truthfulness' was confirmed through the research

by Jang Hye-ji and So Hyo-jung(2023), which explored the educational activity trends of ChatGPT and identified the strengths and suggestions of artificial intelligence, indicating that learners should consider the threat to academic integrity in a balanced manner.

In addition to the components of the AI guide for Christian universities, the first is the 'Educational Tool' aspect, which means that AI should be used as an educational tool. This was confirmed through numerous studies examining the perception of use and intention to use generative AI as an educational tool by university students(Oh & Kim, 2023; Lee, 2023). The next component is the 'Collaborative Tool' aspect. This supports research(Jeong, 2023) that found empirical studies on participatory learning and project-based learning, cooperative and collaborative learning, to have a positive impact on learners' motivation and learning effectiveness. Lastly, 'Diversity' indicates that learners should seek the best answers from a variety of outcomes, keeping in mind that generative AI can produce results with diverse interpretations, as confirmed by research(Lee, 2023).

Looking at the results of axial coding in detail, the AI usage guide for general educational institutions was categorized into 6 categories, and the AI ethics guide was categorized into 7 elements. For example, to categorize 'Institutional Purposefulness', a process was performed to integrate three open coding results. The other results are as shown in Table 7.

〈Table 7〉 Summary of Axial Coding Results

Type	Axial Coding (Explanation)	Open Coding Examples
Utilization Guide	Institutional Purpose Use per institution's goal	Must be used in accordance with the university's unique purpose
	Principles Use with principles	Must adhere to academic principles
	Class Appropriateness Use fit for the class	Utilization standards must be determined according to the class
	Developmental Use with ongoing research	Continuously research AI utilization methods

Type	Axial Coding (Explanation)	Open Coding Examples
	Humanity Use for human benefit	Must be used for the development of human intellectual capabilities
	Accuracy Use accurately, transparently	Must verify accuracy
Ethics Guide	Ethical Purpose Align with ethics	Must be used for the benefit of individuals and the public
	Responsibility (Ethical responsibility)	The responsibility for AI use lies with the individual
	Copyright Protection Mind copyright issues	Maintain safety to prevent infringement / Potential for copyright infringement
	Information Security Ensure info security	Should not handle personal information
	Plagiarism Risk (Consider plagiarism)	Consider the possibility of plagiarism
	Bias (Consider biased information)	Biased information may be acquired / AI may harbor fixed perspectives
	Truthfulness Beware of fraud	Avoid misconduct / Explain the scope of misconduct

Following are the axial coding results for Christian colleges, where both the AI Utilization Guide and AI Ethics Guide were categorized into 7 elements each. For instance, the process of integrating 6 open coding results was conducted to categorize 'Truthfulness'. The other results are as follows in table 8

〈Table 8〉 Summary of Axial Coding Results

Type	Axial Coding (Explanation)	Open Coding Examples
Utilization Guide	Institutional Purpose Use per institution's goal	Must align with the university's educational goals
	Principle-based Use with principles	Everyone should have the right to use
	Educational Tool (Use as an educational tool)	Must implement individualized and personalized education
	Collaborative Tool	Must be used actively and proactively in

Type	Axial Coding (Explanation)	Open Coding Examples
	(Use as a collaborative tool)	collaboration
	Class Appropriateness (Use suitable for the class)	Must be used for the development of human intellectual capabilities
	Humanity Use for human benefit	Must engage in creative thinking / Should be used critically
	Accuracy Use accurately, transparently	Must share about the utilization transparently with everyone
	Diversity Respect all diversity	Must respect the individuality and diversity of instructors and learners
	Responsibility (Ethical responsibility)	The responsibility for outcomes lies with the individual
	Copyright Protection Mind copyright issues	Must consider copyright issues / Intellectual property issues may arise
Ethics Guide	Information Security Ensure info security	Privacy protection is necessary / Confidential data must be protected
	Plagiarism Risk (Consider plagiarism)	Strive to prevent plagiarism
	Bias (Consider biased information)	Must be wary of bias
	Truthfulness Beware of fraud	Must possess academic truthfulness / Be aware of potential negative impacts

3. Components Based on the Inclusion of Collected Data

Through axial coding, categories derived were scored based on their presence in the collected data to examine their importance, leading to the final extraction of components

The scores observable through the scoring tables in Table 9 and 10 represent a three-stage process that conceptualizes a total of 477 pieces of content (Raw Data) mentioned in the collected guidelines into 139 concepts (Open Coding), and then categorizes them into 27 categories (Axial Coding). Therefore, the difference in scores between components implies a significance greater than the numerical values suggest.

<Table 9> Significance of General Educational Institutions in Collected Data

Institution Name	Components												
	AI Utilization Guide						AI Ethics Guide						
	Ins	Pri	Cl	Dev	Hum	Acc	Eth	Res	Cop	Inf	Pla	Bia	Tru
Konkuk U		●	●			●	●	●		●	●	●	
Kyung Hee U			●		●			●		●	●	●	●
Korea U		●	●			●		●			●	●	●
Kookmin U	●		●	●	●			●					
Pusan U					●		●	●					
SkkU			●		●	●		●	●		●	●	●
KU transp	●	●	●		●	●		●			●		●
Min of Edu		●			●		●	●		●			●
Seoul Edu		●		●			●	●	●	●		●	●
Incheon Ed	●				●	●	●					●	
Busan Edu		●				●	●		●	●		●	●
Chungnam du						●		●	●	●	●		
Gyeongbuk Ed		●	●	●		●				●		●	●
Gyeonggi Ed		●					●	●		●		●	●
文部科学省		●			●	●			●	●			
Meiji		●				●		●	●	●		●	
Osaka					●		●			●			
Tohoku						●	●	●		●			
Waseda					●	●				●		●	●
Musashino			●		●	●				●			
Unesco		●			●			●		●		●	●
Alabama		●	●			●						●	
Michigan		●								●		●	●
California L.A		●				●			●	●		●	
California BKR								●		●		●	●
Lasalle			●	●		●				●			
N.Carolina						●		●	●	●			●
Snsta Clcara					●	●						●	●
Russell Group		●		●				●					●
Edinburgh		●				●				●	●		●
essex		●	●		●	●		●		●		●	●
Glasgow					●			●			●		●
London			●							●			●
UIster	●	●				●	●	●	●	●		●	
[●=1 Point]	5	22	15	8	18	24	9	24	9	26	9	21	24

〈Table 10〉 Significance of Christian Universities Included in Collected Data

Institution Name	Components													
	AI Utilization Guide							AI Ethics Guide						
	Ins	Pri	Edu	Col	Cla	Hum	Acc	Div	Res	Cop	Inf	Pla	Bia	Tru
Kyungbok U		●	●		●	●	●		●		●			●
Sejong U	●	●			●				●		●	●		●
Asin U	●	●	●	●	●	●	●	●	●		●	●		●
Ewha U	●		●	●		●	●	●	●					●
Chung-Ang U		●			●		●						●	
Arizona		●				●			●	●		●	●	
Boston		●												●
Calvin					●	●	●		●			●		●
Chicago		●					●		●		●			●
Harvard									●		●			●
Stanford	●	●			●									
Temple		●			●	●	●				●			●
Yale		●			●					●	●			●
Princeton	●	●		●	●	●	●							●
Manchester							●				●	●		●
Oxford				●					●		●	●		
[●=1 Point]	5	11	3	4	9	7	9	2	9	2	9	6	2	12

Assigning scores to explore importance, the results for general educational institutions' AI Utilization Guide are in order of accuracy, principled, humanity, appropriateness for instruction, developmental, and institutional purposefulness. Sequentially listed, it can be stated as, 'It should be used accurately and transparently, according to certain principles, for the intellectual enhancement of humans, appropriately applied to education for continuous development and use of artificial intelligence to achieve the goals of the organization and institution to which it belongs.' For the AI Ethics Guide in general educational institutions, the order is information security, truthfulness, ethical responsibility, bias, ethical purposefulness, copyright protection, and plagiarism risk. Sequentially listed, it can be stated as, 'In the AI era, one must ethically approach without exposing personal information, avoid misconduct with a truthful attitude, take ethical responsibility, protect intellectual property and copyrights from discriminatory and biased information with a clear ethical purpose, and safeguard against the

risk of plagiarism. For Christian universities AI Utilization Guide, the order is principled, accuracy, appropriateness for instruction, humanity, institutional purposefulness, and educational tool. Sequentially listed, it can be stated as, It should be used accurately and transparently with principles, verify inaccurate information, appropriately apply to instruction, enhance human roles and intellectual capacity within the scope, and utilize as an educational tool according to the educational purpose of the college institution. For the AI Ethics Guide, the order is truthfulness, ethical responsibility, information security, plagiarism risk, diversity, bias, and copyright protection. Sequentially listed, it can be stated as, With a truthful attitude and ethical responsibility, one must pay attention to personal information security, property rights protection, acknowledge diversity to prevent discrimination, filter biased information, and ethically approach. The summary of the importance of components according to analysis results is as follows in the table.

<Table 11> Summary of Component Significance According to Analysis Results

Impot	General Education Institutions		Christian Universities	
	AI Utilization	AI Ethics	AI Utilization	AI Ethics
High	Accuracy	Information Security	Principled	Truthfulness
	Principled	Truthfulness	Accuracy	ethical responsibility
	Humanity	Ethical Responsibility	Class Appropriateness	Information Security
	Class Appropriateness	Bias	Humanity	Plagiarism Risk
	Developmental	Ethical Purpose	Institutional Purpose	Diversity
Low	Institutional Purpose	Copyright protection	Collaborative Tool	Bias
		Plagiarism Risk	Educational Tool	Copyright protection

The analysis of components revealed firstly, secular educational institutions emphasize the need for developmental and ethical purposes in AI use, not pres-

ent in Christian college guidelines. Secondly, Christian colleges uniquely focus on using AI as educational and collaborative tools and valuing diversity, not highlighted in secular guides. The highest-rated component for AI utilization guides in secular institutions is the need for accuracy, whereas, in Christian colleges, principled use is emphasized. For AI ethics guides, securing information scored highest in secular institutions, while truthful use was paramount in Christian colleges.

As a result of synthesizing the above analysis, it was found that there are some differences between the established AI utilization and ethics guides for general educational institutions and Christian universities. Specifically, for Christian universities, firstly, it was explicitly stated that AI should be utilized as both an educational and collaborative tool. Secondly, the guides were established using a Christian style of writing. For example, in addressing academic truthfulness and preventing misconduct, phrases like “should be used without shame before God” were used, or in emphasizing the importance of citing to avoid the risk of plagiarism, Christian-style expressions were noted, such as “We do not expect to see a footnote every time we see or hear someone utter a phrase such as ‘love is not proud’ or ‘all men are created equal’.” For general educational institutions, firstly, there was an emphasis on the need for continuous development of AI-based teaching and learning, showing interest in how AI is utilized. Secondly, the need for an ethical approach to potential biases in information due to racial discrimination, historical, and religious differences was emphasized. On the other hand, it is also noted that Christian universities tend to have a lower level of mention regarding biased information.

V. Conclusion

Following the launch of ChatGPT, the educational field has experienced changes amidst mixed concerns and expectations about generative AI. This technology has brought innovation to the development of educational materials and learning methods, yet it has also raised concerns about the potential decline in stu-

dents' critical thinking and communication skills (Son, 2023; Yang, 2023). This study surveyed AI utilization and ethical guidelines across 50 domestic and international universities and educational institutions, exploring the status and ethical guidelines of AI use in Christian colleges.

The results revealed differences in guidelines between general educational institutions and Christian colleges. Christian colleges explicitly utilize AI as an educational and collaborative tool based on Christian worldview, emphasizing the importance of acknowledging diversity and actively producing usage guidelines. In contrast, general educational institutions highlighted the continuous need for AI-based teaching and learning development and the ethical approach to information bias, emphasizing the importance of verifying content accuracy and securing personal information when using AI.

Christian colleges found that using AI based on individual beliefs with integrity and principle was a key element. These differences suggest that Christian colleges' attempt to reflect Christian values in AI use may encompass ethical issues at a religious level more comprehensively than general educational institutions. Therefore, Christian colleges are believed to offer a higher level of AI utilization strategy.

This research provides insights into how Christian colleges can set ethical standards related to teaching and learning when utilizing AI technology and properly provide students with new learning opportunities. As highlighted by the findings of this study, it's imperative for Christian universities to create AI usage guidelines centered around the unique Christian educational philosophies each institution upholds when employing AI in education. Moreover, the ethical aspect of AI use must prioritize accuracy, truthfulness, and responsibility as core values. With the advancement of AI, there must be ongoing attention and development to utilize AI in achieving the purposes of the university institution while responsibly handling information security, plagiarism risks, biased information and errors, and copyright protection. Consequently, the AI usage guidelines for Christian universities must stipulate that AI be used accurately and transparently, adhering to consistent principles for the intellectual enhancement of humans with a Christian worldview, applied educationally in a manner befitting these

principles.

There is growing interest in the use of generative AI in the educational field, but there are concerns about the rapid release of new programs, the adaptation problems of educators and learners, and the potential decline in learning ability due to AI misuse. To address these issues, it is important to educate about the ethical awareness of AI use related to teaching and learning (Nam, 2023; Yang, 2023). Thus, the AI utilization guidelines of Christian colleges should include components that can specifically address the changing teaching and learning environment, offering more practical utilization plans. To this end, first, continuous discussion on the ethical use of technology based on Christian doctrines is required. Second, regular courses on Christian education ethics related to AI use in the educational field should be developed to establish a healthy foundation for AI use through consensus. Lastly, learners who are left behind in the educational paradigm shift due to IT infrastructure deficiencies should be identified and educated based on a Christian worldview.

Therefore, future research will expand the study with external experts to explore concrete field application plans for the components identified. The goal is to comprehensively investigate AI usage cases in various Christian educational institutions and establish a practical foundation for actively introducing and developing AI usage guidelines in Christian universities in the educational field.

References

- Bae, A. R., & Lee, H. C. (2021). Applying Grounded Theory for Methodological Expansion in the Field of Missiology. *Reform Journal*, 58, 167-196.
- Cho, Y. H. (2006). A Study on the History of Christian Universities in Korea. *Korean Journal of University Missions*, 11, 9-31.
- Cho, E. Y., & Kim, J. Y. (2023). The Reality of Middle School Students' Poetry Writing Education Using Artificial Intelligence (ChatGPT). *Learner-Centered Curriculum and Instruction*, 23(21), 77-98.
- Ham, Y. J. (2015). Development of a Bible Teaching Model Using Flipped Learning. *Reform Journal*, 34, 241-267.
- Han, H. J. (2023). Developing Lesson Design Strategies for the Integration of ChatGPT in College Education. *Research in Educational Culture*, 29(4), 243-275.
- Hong, Y. M. (2023). The Impact of Core Competencies in Webtoon Major on the Use of Generative AI. *Social Science Review*, 8(4), 451-468
- Jang, H. J., & So, H. J. (2023). Trends and Topic Analysis of Educational Use of ChatGPT. *Research in Curriculum Education*, 27(4), 387-401.
- Jang, J. H. (2023). ChatGPT and Pastoral Ethics: Theological Discourses on the Pastoral Use of Artificial Intelligence. *Theology Thought*, 201, 257-283.
- Jang, S. K., Kim, K. M., & Choi, E. W. (2023). Exploring Ethical Standards for Creative Activities Using Generative AI: Focused on Online Comic Artists. Presented at the Korean Design Society Autumn International Conference, *The Landscape of Evolving Convergence*, October 28. Sejong: Hongik University.
- Jung, E. H. (2023). The Status of Artificial Intelligence (AI) Education in Major Countries. Seoul Education, Overseas Education, 224. <https://webzine-serii.re.kr/>
- Joo, M. S. (2017). How Has Artificial Intelligence Developed? The History of Artificial Intelligence. Retrieved September 15, 2017, from https://www.samsungds.com/kr/insights/091517_cx_cvp3.html
- Kim, E. H. (2020). Theological Reflection on Non-face-to-face Culture: Understanding Digital Culture and the Possibility of Relational Ministry. *Mission and Theology*, 52, 237-269.
- Kim, E. J. (2012). Crisis Management PR Analysis in Hospital Medical Disputes Using Grounded Theory. *Communication Theory*, 8(3), 53-107.
- Kim, S. C. (2023). A Study on the Current Status and Design Directions of AI Utilization Guidelines in Universities. *Knowledge and Education*, 13, 11-44.
- Kim, W. S. (2022). The 32nd Science and Theology Colloquium: Artificial Intelligence and Christian Ethics. Dialogue Between Science and Theology. <https://www.scitheo.or.kr/column/?idx=11808771&bmode=view>.
- Kim, Y. J., Kang, J. E., & Kim, H. S. (2023). Prompt Engineering for Bias Improvement in Language Models: Focused on a Sentiment Analysis Corpus of Politicians Using ChatGPT. *Corpus Linguistics Research*, 8(1), 49-66.
- Kwon, H. W., & Choi, D. R. (2011). Understanding the Logic of Theorization in Grounded Theory Method: Focused on the Non-contextuality and Methodological Bias in Korean Administration. *Korean Public Administration Review*, 45(1), 275-302.
- Lee, B. C. (2023). A Study on the Direction of Classical Chinese Interpretation in the Era of ChatGPT: Focusing on the Issues of Universality and Diversity. *Language Research*, 116, 147-171.
- Lee, D. S., & Kim, Y. C. (2012). A Study on the Philosophical Background and Methodological Characteristics of

- Grounded Theory as a Qualitative Research Method. *Open Education Research*, 20(2), 1-26.
- Lee, E. H., & Park, M. R. (2023). A Study on the Relationship between Self-Regulated Learning (SRL) Abilities, Perception, and Usage Purposes of ChatGPT among College Students Learning English. *English Language and Literature Education*, 29(4), 71-99.
- Lee, E. S. (2017). Exploring Strategic Operations for Character Education in Christian Universities Through General Education Courses. *Journal of Christian Education*, (51), 101-124.
- Lee, S. K. (2023). Medical Use of Generative AI and Personal Information Protection. *Medical Law*, 24(4), 67-101.
- Lee, S. J., & Lee, K. A. (2007). Theory and Practice of Grounded Theory as a Qualitative Research Method in Special Education. *Mental Retardation Research*, 9(1), 123-147.
- Lee, Y. E., & Yoo, I. W. H. (2023). A Study on the Effect of Flipped Learning in College English Grammar Classes. *Foreign Language Education Research*, 37(3), 1-25.
- Lee, Y. H. (2023). Analysis of University Students' Perception of Generative Artificial Intelligence ChatGPT. *Formative Media Studies*, 26(4), 46-55.
- Lee, Y. H., & Kim, H. S. (2023). Legal Issues for Introducing Generative Artificial Intelligence in Elementary and Secondary Education: Focused on Digital-based Education Innovation Policies. *Computer Education Society*, 26(5), 129-138.
- Nam, B. R., Shim, C. Y., Kim, H. R., & Choi, H. K. (2023). Utilizing ChatGPT and its Extensions for Research: New Perspectives on AI-Based Research Techniques. *Secondary English Education*, 16(3), 139-154.
- Nam, H. D. (2023). Copyright Law Issues in AI-Based Literary Translation. *Copyright Quarterly*, 36(4), 33-88.
- Na, K. E. (2012). A Grounded Theory Study on the Field Experience of Pre-service Special Education Teachers. *Special Education Journal: Theory and Practice*, 13(3), 269-289.
- Oh, M. J. & Kim, J. G. (2023). A New Transformation of Literacy Education in the Era of Generative AI. *Journal of Humanities*, 89, 255-285.
- Oh, S. K., Jang, M. J., & Park, J. E. (2023). Undergraduate Students' Perception of Ethics in Using Generative AI for College Writing. *Literacy Research*, 14(4), 69-96.
- Oh, S. N., & Kim, H. J. (2023). The Relationship between College Students' Use of ChatGPT and Their Perception of Assignment Plagiarism. *Korean Literature*, 50, 253-281.
- Park, H. S. (2022). Development of a Narrative-based Curriculum for University Freshmen: Focused on General Education Courses in Christian Universities. *Christian Education Information*, 73, 197-224.
- Schreiber, R. S., & Stern, P. N. (2003). *Methodology of Grounded Theory*. (Translated by Shin, K. Y. & Kim, M. Y.). Seoul: Hyunmoon Publishing House. (Originally published in 2001).
- Shin, H. W., Lee, J. W., & Kim, H. R. (2023). A Study on University Students' Perception of ChatGPT. *Journal of Korean Home Economics Education*, 35(4), 1-12.
- Shin, Y. J. (2021). Applying Responsibility and Principles for Personal Information Protection in AI Services. *Korean Crime Information Research*, 7(1), 45-74.
- Son, D. I. (2023). The Potential and Limitations of Using ChatGPT in Liberal Arts Writing Classes. *Thought and Expression*, 16(2), 33-65.
- Son, H. C. (2023). ChatGPT and Research Ethics. *Knowledge Management Research*, 24(3), 1-15.
- Son, Y. H. (2023). Copyright of Works Created by Generative AI. *Law and Policy Research*, 23(3), 357-389.
- Song, E. J. (2023). The Use of Generative AI in Education and Governance. *Presented at the Annual Conference of the Korean Association for Education Politics*, October 28. Seoul: Kyung Hee University.

- Strauss, A. L., & Corbin, J. (2001). *Basics of Grounded Theory*. (Translated by Shin, K. Y.). Seoul: Hyunmoon Publishing House. (Originally published in 1998).
- UNESCO. (2023). ChatGPT and Artificial Intelligence in Higher education. *Education* 2030.
- Yang, E. Y. (2023). The Necessity of Regulations for the Development and Use of Generative AI: Focused on Conversational Artificial Intelligence Services Based on Large Language Models (LLMs AI). *Sungkyunkwan Law Review*, 35(2), 293-325.
- Yoo, K. D. (2019). Artificial Intelligence and Christian Ethics: From the Perspective of Theological Anthropology. *Yeongsan Theological Journal*, 48, 87-116.
- Yoo, J. E. (2020). Students' Perception and Satisfaction with Online Classes: Focused on the Operation of Christian Education Courses at A University. *Christian Education Information*, 67, 277-298.
- Yoon, Y. B. (2023). Accuracy Analysis of ChatGPT as a Korean-English Translation Tool. *Korean Elementary Education*, 34(4), 215-231.