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EXPLORING THE ETHICAL ISSUES ABOUT AI IN ART AND DESIGN IN SI CHUAN, CHINA

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Abstract:

This study explored the ethical challenges posed by the application of Artificial Intelligence (AI) technology in the field of art and design. With the rapid development of AI technology, it had a profound impact on the art and design industry but had also raised a range of moral and ethical issues including personal privacy, data security, attribution of responsibility, prejudice and discrimination, employment issues, economic inequality, ethical principles and values, disinformation and manipulation. This study aimed to identify and understand the ethical challenges that may be encountered when AI technologies were applied in art and design, including the impacts on attribution of artistic creations, copyrights, cultural diversity, and personal privacy, and to propose solutions and strategies. Through quantitative research on art and design students in Sichuan, China, the results showed that students generally expressed concerns about the ethical risks of AI application in art and design. This study emphasised the need for art and design education to pay attention to the ethical issues posed by AI, and to train students as both technology users and moral guardians, promoting innovation while safeguarding ethics and social responsibility.

Keywords:

Ethical Issues; Artificial Intelligence; Art And Design; China

Introduction

In recent years, AI technology has experienced rapid development. This development is due to the interaction and promotion of multiple factors. First, the explosive growth in the amount of data has provided AI models with a large amount of training data, enabling AI to make

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significant progress on multiple tasks (Zellers, 2020). Second, the significant increase in computing power, especially the emergence of specialized chips such as GPUs, has greatly enhanced the computers' arithmetic power, making it possible to train complex neural network models. In addition, innovations in algorithms such as deep learning and transfer learning have greatly improved the expressive and adaptive capabilities of machine learning models (Sherionov, 2022). At the same time, the popularization and application of technology, such as the development of cloud computing and open-source frameworks, have made AI technology more accessible, moving from the laboratory to practical applications. In addition, inputs from tech giants such as Google, Microsoft, and Facebook, as well as policy support and funding, are driving the progress of the industry as a whole. Finally, more and more colleges and universities are offering AI-related majors, which will train a large number of talents for the development of AI technology in the near future.

Development Background Of AI Technology

When it comes to the development of Artificial Intelligence (AI), it inevitably raises a series of moral and ethical issues. First, as AI systems demand large amounts of data, personal privacy and data security become points of concern. How to balance the collection and use of data to ensure privacy is not violated is an important ethical consideration. In addition, the issue of liability surfaces when AI systems make decisions, such as those for self-driving cars. We need to clarify who should be responsible for the behavior of AI systems and how to hold them accountable and impose penalties (Fjeld, 2020).

Second, AI systems can be influenced by data bias, leading to discriminatory decisions against certain groups. This raises issues of fairness and discrimination, and there is a need to consider how to ensure that decisions made by AI systems are fair and that corrective measures are taken. In addition, the widespread use of AI technology could lead to the automation of some occupations, which could raise unemployment issues, while uneven technological development could exacerbate economic inequality (Varona, 2022).

Ethical principles and values are also involved in the development of AI. It is a complex ethical challenge to balance different ethical principles and values when programming AI systems, especially when considering weighing life and moral values in decision-making. In addition, the issues of disinformation and manipulation raise concerns as AI technology can be used to create disinformation and manipulate content, posing a potential threat to society (Buruk, 2020).

Ethical issues are also involved in the military and security fields. The use of autonomous weapons systems raises questions about international law and ethical norms, and how to ensure that they are adhered to in military decision-making and operations. Finally, the use of AI in healthcare also faces ethical challenges, including privacy, transparency in medical decision-making, and the protection of patients' rights (Hisan, 2022).

These moral and ethical issues require governments, academia, and industry to develop appropriate laws, policies, and ethical guidelines to ensure that the development and application of AI is responsible and ethical. Broader public engagement and interdisciplinary research are also needed to address these complex ethical challenges.

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Ethical Challenges of AI Technology

While the application of AI technology in the field of art and design has brought about many innovations and conveniences, it has also raised a series of ethical challenges. These challenges include:

The main AI ethical issues in the field of art and design include.

-Copyright and creative attribution issues: AI-generated artworks are subject to copyright disputes, and it is difficult to determine whether the true "author" of a work is the AI system or the individual using the system. This challenges traditional understandings of intellectual property (Eshraghian, 2020).

-Artistic Value and Cognitive Issues: There is a wide debate on the artistic value and cognitive criteria for AI works to be considered as true art. This is related to the human understanding of art (Darewych, 2023).

-Cultural homogenization problem. learning existing art styles by AI algorithms may lead to cultural homogenization, reducing the innovation and cultural diversity of art (Srinivasan & Uchino, 2020).

-Consumers' right to know. Consumers need to know whether or not the artwork they are purchasing was created by AI in order to make an informed judgment. Lack of transparency may mislead consumers (Du & Xie, 2020).

-Professional ethics. Designers need to consider the circumstances under which they will use AI creation tools and the impact on their personal creativity (West & Burbano, 2020).

-Educational impact issues. The teaching of traditional skills needs to be balanced with the use of AI technology, impacting on teaching methods (Srinivasan & Parikh, 2021).

Psycho-social impact: AI artwork may change the public perception of art, which may have a psycho-social impact (Holzapfel et al., 2022).

In summary, the application of AI technology in the field of fine art and design not only brings innovation and change, but also a series of complex ethical issues. Studying the ethical and moral issues that may be raised by AI in the field of fine art and design has profound aims, objectives, significance, and importance, which together constitute the core values of this field of research.

Purpose

The main purpose of the study is to identify and understand the ethical and moral challenges that may be encountered when AI technology is applied in the field of art and design. This includes exploring the impact of technology on attribution of artistic creations, copyright, cultural diversity and personal privacy. Through these analyses, the study aims to propose solutions and strategies to address these challenges.

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Objectives

The goal of the research is to develop relevant ethical guidelines and policy recommendations for artists, designers, technology developers and policy makers. This will help to promote a more responsible and sustainable use of AI technologies in the field of art and design, while ensuring that technological advances do not come at the expense of core ethical and moral standards.

Significance

This study is important because it not only contributes to a deeper understanding of the impact of AI technology on society, but also emphasizes the importance of preserving social and cultural values in the pursuit of technological innovation. The study highlights the criticality of finding a balance between technological development and the preservation of human cultural and artistic freedom. This is crucial in guiding the future direction of technological and artistic development. This study investigated the perceptions of art and design students in Sichuan universities in China on the moral and ethical issues brought by AI technology in their professional fields, in order to better guide students to form a correct moral and ethical perspective and promote the development of related fields.

Importance

The importance of the study is that it provides a framework for evaluating and guiding the application of AI technology in the field of art and design. With the continuous development and popularization of AI technology, these ethical issues will become more and more prominent. Therefore, this study is not only crucial to the art and design industry, but also has far-reaching implications for the understanding and acceptance of AI technology in society as a whole.

In conclusion, a study of the ethical and moral issues that may arise from AI in the field of art and design is not only a necessity within the fields of technology and art, but also a crucial step for society as a whole to understand and adapt to emerging technologies. Through such research, we can better utilize the potential of AI technology while ensuring that its application is consistent with our ethical and cultural values.

Theoretical Framework And Literature Review

Overview of AI Technologies

History and Development

Artificial Intelligence (AI) as an academic concept first appeared in the 1950s, when it was mainly focused on symbolic logic and simple rule-based reasoning. After decades of development, especially since the beginning of the 21st century, AI technology has undergone a remarkable transformation. This transformation has been made possible by the increase in computing power and the popularization of big data, especially the rise of deep learning technologies, which have enabled AI to make significant breakthroughs in areas such as image recognition and language processing. These advances have laid the foundation for the application of AI in areas such as art design (Hinton, 2018).

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Main Types

Machine learning: machine learning is the core of AI, which enables computers to learn from data and make predictions or decisions through algorithms and statistical models. This includes various forms of supervised learning, unsupervised learning and reinforcement learning (Jin, 2020).

Deep Learning: as a branch of machine learning, deep learning mimics the way the human brain processes information by building multi-layer neural networks. It excels in image and sound recognition, natural language processing, etc. (Abdel, 2022).

AI Applications In The Field Of Fine Art Design

The main applications of AI technology in the field of fine art design include:

-Generative Adversarial Networks (GAN), which is used to generate high-quality visual artworks, expanding the creative space of artists (Hung, 2020).
-Neural style transformation, which can mimic the style of a specific artist, providing a new means for artistic creation (Ryunosuke, 2022).
-AI-assisted computer design software, which assists designers in more efficient design and optimization through the computational power of AI (Goetschalckx, 2021).
-AI applications in artwork analysis and interpretation, providing inspiration for art historical research and new creations (Zhang, 2020).
-AI generates personalized artworks and adjusts the style of the artwork based on audience feedback for better interactive experience (Liu, 2020).

In short, AI brings new tools, processes and possibilities to the field of art and design, which not only expands the boundaries of creation, but also puts forward reflections on the nature of creation. It is both an opportunity and a challenge.

Literature Review

In the field of art and design, the involvement of artificial intelligence (AI) poses new ethical challenges and issues, a topic that Li et al. (2020) explore in depth in their research paper, "Research on Artificial Intelligence Ethics in the Field of Art Design". The study was published in the Journal of Physics: Conference Series and focuses on how artificial intelligence affects artistic creation and the resulting ethical dilemmas, with particular attention to the definition of attributes of artworks, the determination of intellectual property rights, and the discernment of artistic styles.

The researcher employs a systems analysis approach to explore methods and models for the study of art ethics under the conditions of AI, and proposes new ethical principles. These principles aim to maximise the practical effects of AI ethics and to establish reliable norms for artistic creation in the field of art and design. The findings suggest that the field of art and design faces multifaceted challenges due to the rapid development of AI, including how the attributes of artworks are defined and how to deal with the intellectual property rights of artworks.

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The article also discusses the multidimensional impact of AI on art aesthetics and technology. The researcher emphasises the importance of ethical research for the future of the art field, especially its fundamental role in regulating the development of artworks and promoting the normative development of the art market. Further, the thesis presents trends and perspectives for future research, including cultural dilemmas, the establishment of ethical codes, stakeholder value dilemmas, and technological dilemmas, and predicts the construction of an AI-based ethical code and assessment system as a possible future research direction.

This interdisciplinary research involves a variety of fields including engineering, cognitive science, environmental science, and management. Li et al. (2020) highlighted the importance of addressing the ethical challenges posed by AI in the arts and explores the need to establish relevant ethical standards and codes.

In the context of design and engineering education and practice, Laura Ferrarello's paper 'Social awareness in design & engineer education and practice. The value of ethics in postgraduate education. Proceedings of the International Conference on Engineering and Product Design Education' (2019) presents an important perspective. The article explores the centrality of ethics and morality in education and highlights the transformative potential of ethical practice in the context of rapid technological advances, particularly in the field of artificial intelligence. Ferrarello (2019) specifically identifies the risk of a social black-box effect, whereby the principles and impacts of technological decision-making are opaque to the wider community, and whereby human agency is managed by algorithms in the decision-making process and reduced trends.

In response to these challenges, the Royal College of Art has adopted a series of initiatives, including seminars and interdisciplinary projects, designed to instil a sense of responsibility and promote ethically aware design and engineering processes. These seminars provide a platform for students to discuss ethical issues, develop critical thinking and promote innovation. At the same time, by introducing Harvard University's Embedded EthiCS programme and similar efforts at the University of California, Berkeley and Delft University of Technology, Ferrarello (2019) demonstrates a collaborative and interdisciplinary approach to the integration of ethics and STEM education.

Ferrarello (2019) highlights that while ethical practices play an important role in facilitating change within the technological field, redesigning organisational structures, and establishing new norms of communication between humans and machines, more research and cross-disciplinary and cross-cultural collaborations are needed to achieve the widespread adoption of these educational practices and to evaluate their long-term effects. The literature concludes by emphasising the importance of integrating ethical awareness in design and engineering education and promoting a greater cultural shift towards social responsibility and innovation within the field.

However, the expansion of AI ethics narratives is not limited to the boundaries of traditional ethical frameworks. Broadening AI Ethics Narratives: an Indic Art View (Divakaran et al., 2023) explores the potential role of non-Western cultures, particularly Indian art traditions, in enriching AI ethics narratives. The study points out that the diversity and deep cultural background of Indian arts provide unique socio-cultural perspectives and moral abstractions for AI ethics. For example, the Indian dance system (i.e., "Natyashastra") demonstrates not

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only the types of intelligence found in computational systems, such as high computational power and memory, but also other capabilities typically overlooked by computational systems, such as emotion and empathy.

These studies highlight the importance of integrating ethics and social awareness in AI design and practice. By effectively integrating ethical principles into AI system design and considering the moral perspectives and artistic traditions of non-Western cultures, we can more fully understand and respond to the social impacts of AI technologies. As shown in Broadening AI Ethics Narratives: an Indic Art View, through ethical abstractions and expressions of empathy in Indian art traditions, we can enhance the ethical sensitivity and cultural adaptability of AI systems, which not only promotes ethical development of the technology, but also broader socio-cultural understanding and inclusiveness.

In summary, these studies highlight the importance of adopting an active, participatory and ethically aware approach to AI design and practice, emphasising the need to look to the future and promote social responsibility and innovation. At the same time, these studies reveal the importance of integrating non-Western cultural and artistic traditions into the ethical framework of AI, thus providing a more holistic and diverse ethical perspective.

Definition Of The Research Problem

The article has 1 desired research question:
What are the concerns of college students majoring in art and design about the ethical and moral issues raised by AI.

Research Methodology

The study poses the research question: are art and design students, who are future practitioners in related professions, sufficiently concerned about the ethical issues that AI may raise? Which ethical issues are they currently most concerned about? Are there differences in the concerns of practitioners from different backgrounds (e.g., age, field of specialization, etc.)? The specific research population of this study was college students in the field of art and design in China. The hypothesis of the study is that the group of college students majoring in art and design is concerned about the moral and ethical issues brought about by AI more than anything else.

Survey Design

The purpose of this study was to determine the attitudes of college students in Sichuan, China, regarding the ethical and moral issues that may result from the use of AI technology through a quantitative research method. This study was conducted at three universities in Sichuan, China. College students, as the main group of users of new technologies, have a high willingness to use them as well as a high degree of professional matching. The sample groups for this survey were all students majoring in Fine Arts and Design. The three colleges currently have about 3,000 students enrolled. These three colleges were selected because their teaching level and the professionalism of their students are well represented locally, and the interests of this group are widely represented in China.

Process

The sampling technique used in this study was simple, the questionnaires were distributed through Questionnaire Star, a questionnaire program developed by Tencent. Simple random sampling is a sampling strategy where researchers use established and desired samples in their

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studies (Gabriel et al., 2019). The study recruited second to fourth year students of art and design programs in three colleges; first year students were not selected because they had been in college for a shorter period of time and had less information about the technology in question. The study is intended to collect and analyze at least 200 questionnaires with a validity rate of no less than 90%.Participants will complete a questionnaire indicating their level of understanding of the ethical and moral issues raised by ai technology. Because these children are proficient in the use of computers and the Internet, and have knowledge of emerging ai drawing tools, they can quickly grasp the convenience that will come with the new technology.

The instrument used in this study was the students' perspectives on the ethical and moral issues raised by ai. The content of the questionnaire was adapted from Higher Education in Digital Skills and Ethical Knowledge for Teachers Mastering TPACK (Isabel María Gómez-Trigueros, 2023) with comparable scales. This reference questionnaire was validated by three education professionals on the content and organization of the course, and its Cronbach's alpha scores were 0.829 and 0.924, respectively, which were considered satisfactory (Pallant, 2011). In order to minimize the impact on the average study time of the students, the questionnaire will be answered in one day, from March 20, 2022 at 8:00 pm to March 21, 2022 at 8:00 pm; 300 questionnaires will be distributed. A total of 226 valid questionnaires were collected. There are ten questions in the questionnaire. The application will manage the distribution and retrieval of the questionnaires through Tencent Questionnaire, and the distribution and responses to the questionnaires will be counted.SPSS version 23.0 software was used to analyze the data once the report was received.

The questionnaire was endorsed by five experts from Sichuan Normal University, Sichuan Conservatory of Music whose categories ranged from associate professor to professor.

Findings

For data analysis, SPSS Version 23.0 program was used. Descriptive mean method was used to determine the mean and standard deviation of each item. The following are the findings for each item in the questionnaire.

Table 1 Demographic Data

	Categories	N	Percent (%)	Cumulative Percent (%)
Genders	Female	132	40.87	40.87
	male	191	59.13	100.00
Grade	Sophomore	74	22.91	22.91
	Junior	87	26.93	49.85
	Senior	162	50.15	100.00
Major	Art	154	47.68	47.68
	Design	169	52.32	100.00
Total		323	100.0	100.0

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Table 2 Descriptive Analysis of the Questionnaire

	Min	Max	Mean	Std. Deviation
AI-generated art and design works may infringe copyrights	2.000	5.000	3.950	0.904
Unclear attribution of creation of ai works	2.000	5.000	3.960	0.871
Currently ai technology is under-regulated	2.000	5.000	4.204	0.769
ai reduces the creativity of art and design works	1.000	5.000	3.368	0.986
ai art and design works are difficult to interpret deeply	1.000	5.000	3.464	1.025
ai can be a new art form	1.000	5.000	3.201	0.984
ai may cause artists or designers to lose their jobs	1.000	5.000	2.452	0.811
ai can be used to produce harmful content	1.000	5.000	3.433	1.048
You are concerned about the ethics of ai in the field of art and design	2.000	5.000	3.591	0.744
Do you think ai poses an ethical risk to the field of art and design?	2.000	5.000	3.650	0.783
AI impact score on creative rights	2.667	5.000	4.038	0.702
AI Impact on Art Score	1.000	5.000	2.789	0.831
AI's Ethical and Social Impact Score	2.000	5.000	3.556	0.671

Reliability Analysis

The Cronbach α reliability coefficient is the most commonly used reliability coefficient and is given by α=(k/(k-1))*(1-(∑Si^2)/ST^2).Where K is the total number of items in the scale, Si^2 is the within-question variance of the score for question i, and ST^2 is the variance of the total score for all the items. As can be seen from the formula, the alpha coefficient evaluates the consistency between the scores of the question items in the scale and is an internal consistency coefficient. This method is suitable for the reliability analysis of attitude and opinion-based questionnaires (scales). The reliability coefficient should preferably be above 0.8, and between 0.7 and 0.8 is better. between 0.6 and 0.7 is acceptable.

Table 3 Reliability Statistics

Item	N of Items	Cronbach α
AI and the creative rights dimension	3	0.767
Dimensions of AI's impact on art	3	0.777
Ethical and Social Impact Dimensions of AI	4	0.793
Summary table	10	0.730

From the above table, it can be seen that: the Cronbach's reliability coefficient value for the dimension of AI and creative rights is 0.767, the Cronbach's reliability coefficient value for the dimension of AI's influence on art is 0.777, the Cronbach's reliability coefficient value for the dimension of AI's ethical and social impacts is 0.793, and the Cronbach's reliability coefficient value for the total scale is 0.730, which is greater than 0.7, thus indicating that the research data reliability is relatively good and can be used for further analysis.

Validity Analysis

Validity analysis, i.e., analysis of the validity of the questionnaire, is usually carried out by KMO and Bartlett's test.

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Commonly used KMO metrics: if the value is higher than 0.8, it means that it is very suitable for information extraction (a side note of good validity); if the value is between 0.7 and 0.8, it means that it is more suitable for information extraction (a side note of good validity); if the value is between 0.6 and 0.7, it means that it is possible to extract information (a side note of general validity); if the value is smaller than 0.6, it means that the information is more difficult to extract (a side note of low validity). is less than 0.6, it indicates that information extraction is more difficult (a side effect of low validity).The KMO statistic is a statistic that takes values between 0 and 1.

When the sum of the squares of the simple correlation coefficients of all variables is much larger than the sum of the squares of the partial correlation coefficients, the KMO value is close to 1. The closer the KMO value is to 1, the stronger the correlation between the variables, the more valid the questionnaire measure is; when the sum of the squares of the simple correlation coefficients of all variables is close to 0, the KMO value is close to 0. The closer the KMO value is to 0, the weaker the correlation between variables is, and the lower the validity of questionnaire data is.

Table 4 KMO and Bartlett's Test

KMO		0.717
Bartlett's Test of Sphericity	Chi-Square	1377.911
	df	45
	p	0.000

Validity was verified using KMO and Bartlett's test, as can be seen from the above table: the KMO value is 0.717, and the KMO value is greater than 0.7, which reflects a better validity.

Table 5 Pearson Correlation

	AI impact score on creative rights	AI Impact on Art Score	AI's Ethical and Social Impact Score
AI impact score on creative rights	1		
AI Impact on Art Score	-0.159**	1	
AI's Ethical and Social Impact Score	0.516**	0.117*	1

* $p<0.05$ ** $p<0.01$

As can be seen from the table above, correlation analysis was used to investigate the correlation between AI on Creative Authority Influence Score and AI on Artistic Influence Score, and AI on Ethical and Social Influence Score, using Pearson's correlation coefficient to indicate the strength of the correlation.

The correlation coefficient between AI impact score on Creative Authority and AI impact score on Art is -0.159 with $p<0.05$, which means that there is a significant negative correlation between AI impact score on Creative Authority and AI impact score on Art, and the correlation coefficient between AI impact score on Creative Authority and AI impact score on Ethics and Society is 0.516 with $p<0.05$, which means that the correlation coefficient is 0.516 with $p<0.05$, which means that the correlation coefficient is 0.516 with $p<0.05$. The correlation coefficient value between AI on Creative Authority influence score and AI on Ethical and Social Influence

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score is 0.117 and p<0.05, thus indicating a significant positive correlation between AI on Artistic Influence score and AI on Ethical and Social Influence score.

Table 6 Independent t test

	Genders (Mean±Std. Deviation)		*t*	*p*
	Female (*n*=132)	Male (*n*=191)		
AI impact score on creative rights	4.17±0.62	3.95±0.74	2.966	0.003**
AI Impact on Art Score	2.91±0.90	2.70±0.77	2.197	0.029*
AI's Ethical and Social Impact Score	3.70±0.78	3.46±0.57	3.020	0.003**

* $p<0.05$ ** $p<0.01$

As can be seen from the above table, the independent samples t-test was utilized to investigate the differences between genders for AI impact on creative rights scores, AI impact on art scores, and AI impact on ethical and social scores, and it can be seen from the above table that: there are significant differences (p<0.05) between genders for AI impact on creative rights scores, AI impact on art scores, and AI impact on ethical and social scores, which implies that there are differences between genders for AI impact on creative rights scores, AI impact on art scores, and AI impact on ethical and social scores. AI on Creative Right Influence Score, AI on Artistic Influence Score, AI on Ethical and Social Influence Score showed significant difference (p<0.05), which means that there is a difference between different genders.
A significant difference in AI on Creative Right Impact Score between genders (t=2.966, p=0.003), as well as specific comparative differences, shows that the mean value of females (4.17) is significantly higher than the mean value of males (3.95).

A significant difference in AI impact on art scores between genders (t=2.197, p=0.029), as well as differences in specific comparisons show that the mean for females (2.91) is significantly higher than the mean for males (2.70).

A significant difference in AI's ethical and social impact scores between genders (t=3.020, p=0.003), as well as differences in specific comparisons, indicate that the mean for females (3.70) is significantly higher than the mean for males (3.46).

Table 7 ANOVA

	Grade (Mean±Std. Deviation)			*F*□	*p*□
	Sophomore (*n*=74)	Junior (*n*=87)	Senior (*n*=162)		
AI impact score on creative rights	4.14±0.72	4.03±0.66	4.00±0.72	1.001	0.369
AI Impact on Art Score	2.64±1.02	2.84±0.92	2.83±0.67	1.158	0.317
AI's Ethical and Social Impact Score	3.51±0.70	3.55±0.68	3.58±0.65	0.291	0.748

* $p<0.05$ ** $p<0.01$

From the table above, a one-way ANOVA was utilized to examine the differences between grade levels for AI on Creative Authority Influence Score, AI on Artistic Influence Score, and AI on Ethical and Social Influence Score, and it can be seen from the table above that there is

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no significant difference (p>0.05) in AI on Creative Authority Influence Score, AI on Artistic Influence Score, and AI on Ethical and Social Influence Score between grades, meaning that there is consistency and no difference between grades. There is no significant difference (p>0.05) between grades, which means that there is no difference between grades in terms of consistency of AI on Creative Authority Influence Score, AI on Artistic Influence Score, and AI on Ethical and Social Influence Score.

Table 8 Independent t test

	(Mean±Std. Deviation)		t	p
	Art (n=154)	Design (n=169)		
AI impact score on creative rights	4.07±0.74	4.01±0.67	0.861	0.390
AI Impact on Art Score	2.84±0.92	2.75±0.74	0.941	0.348
AI's Ethical and Social Impact Score	3.53±0.73	3.58±0.62	-0.760	0.448

* p<0.05 ** p<0.01

As can be seen from the above table, the independent samples t-test was utilized to investigate the differences between the majors on the AI impact on creative rights scores, AI impact on art scores, and AI impact on ethical and social scores, and from the above table, it can be seen that: there is no significant difference between the different majors on the AI impact on creative rights scores, AI impact on art scores, and AI impact on ethical and social scores (p>0.05), which means that there is consistency and no differences between the different majors. There is no significant difference (p>0.05) between different majors, which means that there is no difference between different majors in terms of consistency of AI on Creative Right Influence Score, AI on Artistic Influence Score, and AI on Ethical and Social Influence Score.

For possible copyright infringement of AI-generated art and design works, respondents generally agreed that AI-generated art and design works may infringe copyright, with a high average rating. For the unclear attribution of the creation of AI works, respondents generally believe that the attribution of the creation of AI works is unclear, indicating that respondents are generally concerned about the role and attribution of AI in art creation. In the case of the current poor regulation of AI technology, respondents generally agreed that the current regulation of AI technology is poor, with a high average rating. In terms of AI reducing creativity in art and design works, respondents' views were more dispersed (with large standard deviations), but on average, respondents tended to think that AI reduces creativity in art and design works. When it comes to the difficulty of interpreting AI art and design works in depth, respondents generally agreed that it is more difficult to understand the deeper meaning of AI art and design works. On the topic of AI can be a new art form, respondents' ratings were more widely distributed, but on average, respondents were open to AI as a new art form. On the other hand, on the topic of AI potentially causing artists or designers to lose their jobs, respondents' average ratings were lower, suggesting that respondents generally believed that AI could cause artists or designers to lose their jobs. The topic "Do you have concerns about the ethical issues of artificial intelligence in the field of art and design" indicates that respondents generally have concerns about the ethical issues of artificial intelligence in the field of art and design. In the topic "Do you think artificial intelligence poses an ethical risk to the field of art and design?" This topic shows that respondents generally believe that AI poses ethical risks in the field of art and design.

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Among the three dimensions, the impact of AI on creative rights scores indicate that respondents generally believe that AI has a significant impact on creative rights, with a relatively high average score. On the other hand, the impact of AI on art score shows that respondents' views on the impact of AI on art are more dispersed, but with a lower mean score, which may indicate that respondents perceive AI as having a limited positive impact on art. The Ethical and Social Impact of Artificial Intelligence score dimension shows that respondents generally believe that AI has a significant ethical and social impact, but the mean score suggests that this impact is limited.

Discussion And Conclusion

It can be learned from the above data that it is particularly important to pay attention to the moral and ethical issues brought by AI in current art and design education. First of all, educators should introduce students to the wide application of AI in the field of art and design as well as the possible positive and negative impacts, including issues such as copyright, creative attribution, and data privacy, by organizing lectures, workshops, and classroom discussions. By showing examples of AI technology in practice, students can recognize the ethical challenges lurking behind technological advances.

Secondly, students should be encouraged to engage in in-depth discussions and reflections to guide them to understand their ethical responsibilities as future art and design practitioners when using AI technologies. Students should think about how to find a balance between innovation and ethics, and how to utilize AI technology to advance the industry while respecting originality and protecting personal privacy. As Liikkanen (2019) emphasizes, raising the ethical awareness of designers and related practitioners, engaging in ethical discussions, and using AI technologies responsibly to ensure that technological advances are also ethical advances is a non-negligible part of technological development today.

Finally, allowing students to directly participate in ethical decision-making through practical projects is an effective way to cultivate their ethical awareness. By setting up project topics that require the integration of moral and ethical considerations into the design process, students are allowed to experience and solve ethical problems in real-world environments, and to evaluate and provide feedback on the ethical dimensions of their work. This approach not only enhances students' sensitivity to ethical issues, but also prompts them to deeply understand the important impact of ethics on society in their future work.

In summary, contemporary art and design education needs to pay attention to the moral and ethical issues brought by AI. Through a combination of education, discussion and practice, students are trained to become not only users and applicators of technology, but also guardians and advocates of morality and ethics. Ensuring that ethical progress and social responsibility are ensured alongside the rapid development of the art and design industry, thereby promoting human well-being and social justice. As stated by Li (2020), the designers of the future should be the guardians of both technology and ethics, ensuring that the use of technology promotes innovation while traveling on the right path of morality and ethics.

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Wen Quan conceptualised the study, providing oversight for the research design and framework. He made significant contributions to the literature review, synthesising key theoretical perspectives and previous studies relevant to the research topic. Additionally, he

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played a central role in drafting and refining the introduction and conclusion sections, ensuring the overall coherence and academic quality of the article. Ding Hao, on the other hand, led the development of the methodological approach and was primarily responsible for data collection and analysis. His expertise in statistical and qualitative analysis ensured the reliability and validity of the findings. Furthermore, he provided critical insights into the discussion section, contextualising the results within the broader academic discourse. Both authors collaborated closely during the writing and editing stages, jointly reviewing and approving the final version of the manuscript to ensure its alignment with the research objectives and its scholarly contribution.

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