Review Journal of Social Psychology & Social Works

http://socialworksreview.com

ISSN-E: 3006-4724 **Volume**: 3
ISSN-P: 3006-4716 **Issue:** 2 (April - June, 2025)

GAI Creative Content in Media and Education: Is Human-AI Co-Creativity Worthy of Copyright Protection?

Sumaira Zakir[1], Shabana Bibi[2], Daniyal Butt[3], Dr. Rani Gul[4], Nauman Khan[5]

1. Lecturer at BUITEMS, Pakistan, Email: sumaira.zakir@buitms.edu.pk
2. Lecturer, Department of Education, Bacha Khan University, Charsadda (Corresponding Author)
3. Lecturer at BUITEMS, Pakistan, Email: muhammad.daniyal@buitms.edu.pk
4. Assistant Professor, Department of Education, University of Malakand, Chakdara, (Corresponding Author) Email: dr.rani27@gail.com ranigul@uom.edu.pk
5. Lecturer at BUITEMS, Pakistan, Email: nauman.Khan@buitms.edu.pk

Abstract

In an era of emerging technologies, Artificial Intelligence (AI) generated content is becoming increasingly more easy-to-use, lucrative and accessible at one hand, while creating challenges to understand its interconnected aspects (creative, ethical and legal aspect) on the other hand. The premature adoption of unbridled GAI made it necessary to philosophically explore the consequences of this driverless technology in media and education. Similarly the creative addition of GAI increases the high risks to Intellectual Property rights of any individual or entity and it becomes inevitable to take concrete measures. Coping up with the challenges, the ethical dilemmas and widening the scope of copyright laws particularly dealing with AI-generated content is highly emphasized. In order to form the theoretical foundation, of GAI in association with its creative, ethical and legal implications, the study is conducted in two phases. In first phase, does GAI creativity deserve copyright? This question initiating the philosophical debate related to changing the perception that only human creations are worthy of copyright protection. This is giving rise to a number of aspects to be considered for exploration such as the questions of "Creativity", "Authorship", "Ownership" and "Originality" in GAI. While the second phase examines challenges or risk compromising ethical standards in GAI content creation. This research work provides grounds to understand the creative aspects of AI used in media and education covered by copyright law by analyzing the creative work of machine and human mind. The analysis of responsive and adaptive policies ensuring more responsive creative, ethical and legal measures to the challenges posed by GAI in media landscape, is the integral part of this research. The insights of this research will be useful for understanding the creative aspects of GAI under copyright protection by thoroughly examining the deliberations of developed countries in building firm philosophical and legal foundation for this study.

Keywords: AI-generated Content, Intellectual Property rights, Technology**,** Copyright law, GAI

Rationale of Study

The proposed study will be an examination of challenges associated in GAI content creation. As considering the obvious fact that till now as according to Dr. tayyab shah "AI is driverless technology" and therefore its premature adoption accelerating number of ethical and legal challenges for individuals and collectively in public domain about its unbridled or unregulated

characteristics. These concerns led all stakeholders to the worrisome about the authenticity of GAI content creation in two different ways. Hypothetically at one side it concerns User's input and output generative content while at other side, it's a biggest concern for such individual entities or group of companies whose databases are being used without permission or licenses for training data to use and run any particular program (AI Generator program software). These concerns make is necessary to expedite the philosophical debate over the stated issue.

This study, however, will be an exploration for reaching out the more appropriate ways to identify protection strategies through concrete measures after analyzing the stated aspects AI-generated creations. With this area of interest, it is intended to contribute to the understanding of how AI-generated creations can be connected to formulate responsive and adaptive measures, ensuring a more responsive creative, ethical and legal approach to the challenges posed by growing media landscapes. With the objective to staying at the forefront of advancements in media and technology, this study will also directly benefit society and masses in the application of innovative technologies to creative, ethical and legal frameworks.

Research Objectives

- To provides grounds to philosophically examine the AI-generated content which is the most significant ethically and legally complex issue in today's Communication progress.
- To provide a comprehensive identification and understanding of the challenges associated with the use of generative artificial intelligence (GAI).
- To evaluate the potential risks or harm of GAI to Intellectual Property/ Copyrights rights of any individual or body by providing concrete measures.

Research Questions

Q1: Does GAI deserve copyright ability? And are Non-human creations worthy of copyright protection?

Q2: What potential challenges compromising the ethical and legal characteristics of GAICC?

Introduction

Generative AI (GAI) has significantly impacted creative content production in media and education, raising complex questions about copyright protection for human-AI co-created works. The study aims to examine the challenges associated with GAI content creation, evaluate potential risks to intellectual property rights, and provide responsive measures to protect AI-generated content. The research questions focus on whether GAI deserves copyright ability, the potential challenges compromising ethical and legal characteristics of GAICC, and the necessary responsive measures. The study highlights the need for ethical frameworks to guide human-AI collaboration in creative industries, addressing issues of authorship, intellectual property, and the preservation of human creativity while harnessing AI's potential (AlAli & Wardat, 2024) (Cath, 2018). Furthermore, it should consider the complementary roles of humans and AI in creative processes, recognizing that while AI can generate intricate artworks, it lacks human emotional expression and cultural sensitivity (Yang, 2025).

Historical Background and Evolution of Artificial Intelligence

In 1920, the first "robot" appeared in modern literature in a play, R.U.R. Rossum's Universal Robots which is written by Czech Karel Čapek (Raj & Kos, 2022). The term robot was a Czech word for forced labor, and the play depicted an early conception of the "singularity," which is the

point at which the intelligent, self-aware machines come to dominate humanity rather than serve as its labor force. In 1927, Metropolis (Film) by Fritz Lang also explored parallel themes (J. Garon, 2023). The fictional development of robots was combined with massive artificial intelligence and popularized by Isaac Asimov, who wrote more than three dozen books involving self-aware robots, as well as a dozen stories featuring "Multivac," a massive government-run answer machine that could understand natural language queries and provide thoughtful answers (J. M. Garon, 2023).

The fictional depictions often frame the popular reference to the emergence of these technologies. John McCarthy is attributed with coining the academic term "artificial intelligence" during a 1956 Dartmouth College conference dedicated to capturing human-like thought processes by computers (Roitblat, 2020). Although work has been underway for decades to better understand ways to mirror the processes of human thinking and decision-making, the past five years have seen an explosion of AI adoption. "Artificial intelligence is driving important developments in technology. The rapid growth of AI includes experiments in self-driving vehicles, healthcare, facial recognition to unlock a cell phone, and uses in the production of music, digital images, deepfake videos, and much more (J. M. Garon, 2023). Establishment of AI in academics can be traced back as a discipline in 1956. Research in the field of AI comprises on cognition, insight, rational, wisdom, demonstration, development, natural language processing with the ability to move self-reliantly and influence objects (Raj & Kos, 2022). In the renowned journal "Artificial Intelligence: A Modern Approach" by Russell and Norvig, AI can be defined as "the study of agents that receive awareness from the environment and execute actions." Within this definition, the structure of actions is simplified to their mechanical results, while their objectives (the goals the agent pursues or, in more philosophical terms, intentions) are not specified. These goals are provided externally, indicating that artificial agents do not initiate actions and are not aware of their actions when they act (Powers & Ganascia, 2020).

Literature Review

Technological advancement and its interaction with human beings has long fascinated writers (Nils J Nilsson, 2010). To understand the fundamental technologies of AI, it is essential to understand the concept of "Intelligence". Initially, intelligence can be defined as "the ability of an agent to achieve objectives in various environments." Second, intelligence can be seen as "the computational aspect of the ability to achieve goals in the world." In philosophy, an agent deliberates about his actions before executing them. Recognize their intentions and take action based on them. Essentially, artificial agents lack agency in a philosophical context. (Powers & Ganascia, 2020). AI (Artificial Intelligence) is the practice of having machines imitate human intelligence to perform tasks (Mckinsy.com). New systems of content generated by AI and AI-powered computer-generated agents present new forms of risks, the damage of which will be difficult to predict. Technological advancement has made possible the increasingly powerful use of artificial intelligence fueled by enormous streams of digital content that can be used to analyze the behavior, mentality, and physical situation of users (Lewis & Moorkens, 2020). New forms of AI-generated content and AI-powered virtual agents present new forms of risks, the damage of which will be difficult to predict. (Lewis & Moorkens, 2020). Artificial intelligence (AI) ethics is a field that has emerged in response to growing concerns about the impact of AI (Kazim & Koshiyama, 2021). A host of challenges have been posed by AI to the existing legal context of intellectual property rights, particularly as regard to copyright law (Sandiumenge, 2023).

There have been numerous discussions regarding the risks linked to the advancement and utilization of Generative Artificial Intelligence (GAI). Issues such as potential prejudice, privacy and security vulnerabilities, ethical dilemmas, and the generation of harmful or deceptive content are encompassed in this domain. Despite these reservations, Generative AI continues to be developed and implemented in various scenarios, prompting significant reflections on the societal and ethical implications of these technologies (Gul & Ahmad, 2022a; Wach et al., 2023). Recent advancements have empowered Generative Artificial Intelligence (GAI) to generate content across different forms that frequently resemble content created by humans, questioning the traditional notion that creativity is exclusively a human attribute (Gul, R., et.al., 2023). The assumption that creativity is a uniquely human prerogative is being challenged by the latest product of deep learning algorithms: generative AI (GAI). There are marked differences between human and AI creative processes in all three components. First, humans often possess a diverse yet shallow array of accessible data, encompassing life experiences, cultural, and social contexts, many of which remain elusive to AI due to their uncodified nature or regulatory constraints. In contrast, AI can access vast, but narrower data sets and represent them in high dimensional spaces, overcoming the limitations inherent to human cognitive capacity and memory, utilizing advancements in computing infrastructures and deep learning algorithms (Wach et al., 2023).

Intelligently run programs and robots intervene as assistants in one's daily lives. Currently, humans use numerous home based appliances consist on smart technology and artificial intelligence, such as (automatic home appliances) coffee makers, vacuum cleaners, washing machines, smart TVs, and many others. Personal assistant service is provided by Siri and Alexa making a way to search for information, control devices, and place orders in smart homes. The fusion of robotics and artificial intelligence offers an improved method for researchers, scientists, and medical practitioners to enhance the efficiency of their work (Raj & Kos, 2022). The majority of individuals concur that the core of human essence lies in acts of creation and advancement (Mammen & Richey, 2020). The requirement for human authorship has been upheld by the Copyright Office. According to Section 202.02(b) of the Compendium II of Copyright Office Practices, Authorship by a human: the term "authorship" suggests that a work must have a human origin in order to be protected by copyright. Content created exclusively by plants, animals, or the natural world is not protected by copyright (Mammen & Richey, 2020). The wrong strategy for encouraging the use of and investment in AI technology is copyright protection. Machines undoubtedly excel in certain areas, but they can still be easily distinguished from humans, especially when engaged in creative activities. Significant skills like intention, awareness, feelings, motivation, and observation are lacking from algorithms. Artificial intelligence is possible, but artificial creativity does not exist (Zurth, 2020).

The impact of technological advancements on the content generation or creation with exploitation of copyrighted works and the need for legal framework adjustments to meet the requirements of the new realities. Differences in approaches to copyright protection in different legal traditions and cultures. It is considered necessary to reach multifaceted approach for safeguarding intellectual property rights particularly copyright laws in the evolving digital era. Variation in the regulation of new forms of works by country, with different laws protecting databases and computer programs. The challenges of copyright protection in the digital environment including difficulties in understanding what is legal and what is not allowed. The impact of technology on copyrights enforcement and the need for innovative business models to protect intellectual property are essentially unavoidable. The importance of finding a balance

between private rights and the public interest in information are imperative to be considered through researches (Mogol & Crudu, 2022).

The purpose of exploring the copyright implications of generative artificial intelligence. The studies involve examining issues such as authorship, ownership, and infringement. Efforts were made to investigate the legal challenges and considerations surrounding (Sandiumenge, 2023). Artificial intelligence (AI) has influenced nearly every aspect of human creative endeavors in recent years (Ahmad & Gul, 2023a,b; Gul & Ahmad, 2022b. (AI) has presented a number of difficulties for the current intellectual property legal system, especially concerning copyright law (Zirpoli, 2023). The success of artificial intelligence serves as a testament to the significant strides in AI technologies over the past few decades, as well as to the technology's rapidly expanding influence and power inside human civilization. The field of artificial intel igence is expanding quickly, and policymakers and regulators need to stay up to date with this emerging and crucial technology (Villaronga et al., 2018) . (Villaronga, Kieseberg, & Li, 2018). The emergence of AI creation as well as its use in literature and art have presented new difficulties for contemporary practice (Bhat, 2018). The way that copyright law provisions about authorship, infringement, and fair use will be applied to content created by artificial intelligence (AI) is becoming more and more complicated as a result of AI innovations. The technology referred to as "generative AI," such DALL-E and ChatGPT from Open AI, Stable Diffusion from Stability AI, and the name-branding programme from Midjourney, can produce original text, graphics, and other types of material, or "results." in reaction to a user's textual commands, often known as "inputs." A significant amount of previous works, including books, images, paintings, and other forms of art, are fed into these generative AI programmes in order to train them to produce such outcomes (Zirpoli, 2023).

The difficulties and issues that copyright law presents when it comes to AI-generated content. Copyright laws governing AI-generated works are complex and vary from nation to nation. According to Copyright, its applicability contains original works, and originality related to the author's own intellectual creativity with author’s "personal touch," according to the historic decision on authorship aspects of copyright. It is obvious that a human author is required if we want a work to be protected by copyright since it must represent the author's personality. The current foundation of EU law is the idea that human creativity and authorship are unique. However, this human-centric notion is being questioned with the advent of creative tools. Though, in especially for works generated with the "assistance" of AI technologies, the rise of AI is blurring the lines and making it more difficult for the law to define what constitutes a copyrightable work and what does not (Torres, 2023).

Methodology

The qualitative content analysis approach is employed considering the nature of research questions, problem and objectives under stated research. Addressing the question of copyright ability of GAI by rationalizing the idea of copyright protection to non-human creations after identifying the challenges compromising ethical and legal implications of GAICC. The qualitative content analysis approach, utilizing purposive sampling and contextual inquiry, allows for a comprehensive examination of the copyright ability of Generative Artificial Intelligence (GAI) creations. This methodology enables the identification of core themes and divergent opinions across a diverse sample, potentially leading to a deeper understanding of the ethical and legal implications of GAI-created content. The systematic approach to analyzing and

coding data may result in more nuanced insights into the complex issues surrounding GAI, potentially informing future policy decisions and legal frameworks regarding non-human creations and copyright protection.

The qualitative content analysis approach is employed in following manner and phases.

1. Initial data is examined on stated issue through comprehensive literature review led towards framing thematic clusters for next phase.
2. Qualitative content analysis research approach is applied through contextual inquiry (by facilitating a deeper understanding or in depth-analysis of content scrutinized and extracted eligible for consideration in study). Qualitative research techniques by contextual inquiry are applied to capture accurate, in-depth insights (Bhat, 2018) about the issue under study. Data for comprehensive literature review is accumulated through applying purposive sampling technique (Maximum Variation sampling technique). The maximum variation sampling technique is used if the research aims to uncover core and shared elements/ themes that cut across a diverse sample while simultaneously offering the opportunity to identify divergent opinions.
3. Data derived is constantly coded side-by-side separated according to thematic clusters.
4. For more authentication and to validate results, such coded themes/ clusters are analyzed and initial observed results of study (based on content analysis). Efforts are put by researcher in order to solve complex issues of GAI by breaking down into significant conclusions, that is easily understandable by masses (Bhat, 2018) by applying qualitative approach through systematically designing steps for understanding emerging and complex concepts of GAI in its creative, ethical and legal bounds.

Findings

The rise of AI is blurring the lines of what constitutes a copyrightable work. Generative AI (GAI) is transforming creative content production in media and education, raising complex questions about copyright protection for human-AI co-created works. The integration of AI in creative processes has led to divergent legal interpretations, with some courts acknowledging AI's potential for novel creative expression while others disconnect human creativity from AI output. As AI technologies increasingly influence artistic expression, ethical frameworks are needed to guide human-AI collaboration in creative industries, addressing issues of authorship, intellectual property, and the preservation of human creativity. These frameworks should involve stakeholders from various domains, prioritize human-centric values, and emphasize transparency. However, AI technologies also present new forms of risks, including bias, privacy, and security vulnerabilities. Differences exist between human and AI creative processes in terms of data accessibility and representation. Copyright laws governing AI-generated works are complex and vary across nations, with the rise of AI blurring the lines of what constitutes a copyrightable work. Navigating this evolving landscape requires a balanced approach that harnesses AI's potential while preserving human agency and addressing concerns about authenticity and ownership.

The emergence of **Generative Artificial Intelligence** (GAI) in content creation for media has sparked significant debates surrounding ownership, creativity, originality, and copyright challenges. GAI's ability to produce content that closely resembles human-created works challenges traditional notions of authorship and originality, necessitating a reassessment of

copyright laws and their applicability to non-human creations. Ownership of GAI-generated content remains a complex issue, as it blurs the lines between human and machine contributions. The current copyright framework, which is primarily human-centric, struggles to accommodate AI-generated works, leading to divergent legal interpretations across different jurisdictions. Creativity in the context of GAI raises questions about the nature of artistic expression and the role of human intention in the creative process. While GAI can produce intricate and novel works, it lacks the emotional depth, cultural sensitivity, and personal experiences that inform human creativity. This distinction challenges the traditional understanding of creativity as a uniquely human attribute. Originality, a key component of copyright protection, becomes ambiguous when applied to GAI-generated content. The vast datasets used to train AI systems may inadvertently incorporate existing copyrighted works, raising concerns about potential infringement and the true originality of the output.

The copyright ability of GAI content used in media faces several challenges:

1. Authorship determination: Identifying the rightful author or creator of GAI-generated content is problematic, as it involves contributions from AI developers, users, and the AI system itself.
2. Legal recognition: Current copyright laws in many jurisdictions require human authorship, making it difficult to protect AI-generated works under existing frameworks.
3. Ethical considerations: Balancing the rights of human creators with the potential of AI technology requires careful consideration of ethical implications and societal impact.
4. Cross-border inconsistencies: Varying copyright laws across nations complicate the protection and enforcement of rights for GAI-generated content in a globalized digital environment.
5. Fair use and infringement: Determining fair use and identifying potential copyright infringements becomes more complex when dealing with AI-generated works.
To address these challenges, a balanced approach is needed that recognizes the potential of AI while preserving human agency and addressing concerns about authenticity and ownership. This may involve developing new legal frameworks, ethical guidelines, and industry standards that can accommodate the unique characteristics of GAI-generated content while safeguarding the interests of human creators and the public.

Conclusion

The research highlights the evolving nature of creativity in the age of AI, challenging traditional notions of authorship and originality. As GAI continues to produce content that closely resembles human-created works, it becomes increasingly crucial to reassess copyright laws and their applicability to non-human creations. The study emphasizes the need for a balanced approach that recognizes the potential of AI while preserving human agency and addressing concerns about authenticity and ownership. Ethical frameworks emerge as a critical component in guiding human-AI collaboration within creative industries. These frameworks must address issues of authorship, intellectual property, and the preservation of human creativity while harnessing AI's potential. The research underscores the importance of involving stakeholders from various domains, prioritizing human-centric values, and emphasizing transparency in the development and implementation of AI technologies. The study also acknowledges the potential risks associated with GAI, including bias, privacy concerns, and security vulnerabilities. As AI technologies continue to evolve, it becomes imperative to develop responsive and adaptive

policies that ensure ethical and legal compliance while fostering innovation. In navigating this complex landscape, the research calls for a nuanced understanding of the differences between human and AI creative processes, particularly in terms of data accessibility and representation. It also highlights the need for harmonization of copyright laws across nations to address the challenges posed by AI-generated content in a globalized digital environment. Ultimately, this study provides a foundation for understanding the creative, ethical, and legal implications of GAI in media and education. It emphasizes the need for continued research, policy development, and interdisciplinary collaboration to harness the potential of AI while safeguarding human creativity and intellectual property rights. As we move forward, striking a balance between technological innovation and ethical considerations will be crucial in shaping the future of creative content production in the age of artificial intelligence protection.

References

Ali, S., Gul, R., & Gul, U. (2025). Perceptions of teachers on practicing personal values in their teaching at secondary school level. *Review Journal of Social Psychology & Social Works, 2*(2), 324–330.

Ahmad, I., & Gul, R. (2023). Service-Learning Models. *Service-Learning: Theory and Practice*. Taylor & Francis.

Ahmad, I., & Gul, R. (2023). Service-Learning and Vocational Education. *Service-Learning: Theory and Practice*. Taylor & Francis.

AlAli, R., & Wardat, Y. (2024). Opportunities and challenges of integrating generative artificial intelligence in education. *International Journal of Religion, 5*(7), 784–793.

Ashok, M., Madan, R., Joha, A., & Sivarajah, U. (2022). Ethical framework for Artificial Intelligence and Digital technologies. *International Journal of Information Management, 62*, 102433.

Ayub, A., Gul, R., Ali, A., & Rauf, B. M. (2021). Cultural and educational stress: A case study of Brahui speaking ESL and EMI periphery students. *Asian EFL Journal*, 28(2.3), 123–145.

Babajide Tolulope Familoni. (2024). Ethical frameworks for AI in healthcare entrepreneurship: A theoretical examination of challenges and approaches. *International Journal of Frontiers in Biology and Pharmacy Research, 5*(1), 057–065. https://doi.org/10.53294/ijfbpr.2024.5.1.0032

Bareach, N.-u.-D., & Gul, R. (2025). Legal framework regulating the old age homes: An analysis of challenges faced by elderly for legislative reforms in Pakistan. *Social Science Review Archives, 3*(1), 2470–2475.

Bhat, A. (2018, March 27). Qualitative Research: Definition, Types, Methods and Examples. *QuestionPro*. https://www.questionpro.com/blog/qualitative-research-methods/

Boddington, P. (2017). *Towards a Code of Ethics for Artificial Intelligence*. Springer International Publishing. https://doi.org/10.1007/978-3-319-60648-4

Bolukbasi, T., Chang, K.-W., Zou, J. Y., Saligrama, V., & Kalai, A. T. (2016). Man is to computer programmer as woman is to homemaker? Debiasing word embeddings. *Advances in Neural Information Processing Systems, 29*. https://proceedings.neurips.cc/paper_files/paper/2016/hash/a486cd07e4ac3d270571622f4f316ec5-Abstract.html

Bukhari, S. K. U. S., Gul, R., Bashir, T., Zakir, S., & Javed, T. (2021). Exploring managerial skills of Pakistan public universities' middle managers for campus sustainability. *Journal of Sustainable Finance & Investment*, 11(3), 1–19.

Calo, R. (2017). Artificial intelligence policy: A primer and roadmap. *UCDL Rev., 51*, 399.

Cath, C. (2018). Governing artificial intelligence: Ethical, legal and technical opportunities and challenges. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, *376*(2133), 20180080. https://doi.org/10.1098/rsta.2018.0080

Christin, A. (2017). Algorithms in practice: Comparing web journalism and criminal justice. *Big Data & Society*, *4*(2), 205395171771885. https://doi.org/10.1177/2053951717718855

Fjeld, J., Achten, N., Hilligoss, H., Nagy, A., & Srikumar, M. (2020). Principled artificial intelligence: Mapping consensus in ethical and rights-based approaches to principles for AI. *Berkman Klein Center Research Publication, 2020–1*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3518482

Floridi, L., Cowls, J., Beltrametti, M., Chatila, R., Chazerand, P., Dignum, V., Luetge, C., Madelin, R., Pagallo, U., Rossi, F., Schafer, B., Valcke, P., & Vayena, E. (2018). AI4People, An Ethical Framework for a Good AI Society: Opportunities, Risks, Principles, and Recommendations. *Minds and Machines*, *28*(4), 689–707. https://doi.org/10.1007/s11023-018-9482-5

Gao, D. K., Haverly, A., Mittal, S., Wu, J., & Chen, J. (2024). AI Ethics: A Bibliometric Analysis, Critical Issues, and Key Gaps. *International Journal of Business Analytics (IJBAN), 11*(1), 1–19.

Garon, J. (2023). A Practical Introduction to Generative AI, Synthetic Media, and the Messages Found in the Latest Medium. *Synthetic Media, and the Messages Found in the Latest Medium (March 14, 2023)*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4388437

Garon, J. M. (2023). *The Revolution Will Be Digitized: Generative AI, Synthetic Media, and the Medium of Disruption*. https://kb.osu.edu/bitstreams/65023bfa-9388-439f-bf47-7b8eb6d2c849/download

Gerke, S., Minssen, T., & Cohen, G. (2020). Ethical and legal challenges of artificial intelligence-driven healthcare. In *Artificial intelligence in healthcare* (pp. 295–336). Elsevier. https://www.sciencedirect.com/science/article/pii/B9780128184387000125

Gul, R., & Ahmad, I. (2023). Understanding the Pedagogical Role of Service-Learning for Preparing Citizen Leaders in Higher Education. *Journal of Education and Educational Development*, 10(2), 45–60.

Gul, R. (2023). Relationship Between Self-Concept and Academic Achievement: An Evidence of Female Students. *Journal of Research in Social Sciences*, 11(1), 100–115.

Gul, R., & Ahmad, I. (2022). A Qualitative Inquiry of University Students' Experiences of Exam Stress and Its Effect on Their Academic Performance. *Human Arenas*, 5(3), 250–265.

Gul, R., & Ahmad, I. (2022). A Qualitative Study of Workplace Factors Causing Stress Among University Teachers and Coping Strategies. *Human Arenas*, 5(2), 200–215.

Gul, R., & Ali, I. (2021). An Evaluative Study of English Contrastive Rhetoric in Pashtu Speaking Areas of Pakistan: A Case Study of District Swat. *Linguistica Antverpiensia*, 2021(2), 2184–2199.

Gul, R., & Ali, I. (2021). The Impact of Education on Business Opportunities for Women Entrepreneurs in Public & Private Television Advertisements in Pakistan. *Industrial Engineering & Management Systems*, 20(2), 140–147.

Gul, R., & Dogar, A. A. (2021). Effectiveness of Continuous Professional Development Program as Perceived by Primary Level Teachers. *Journal of Educational Research*, 24(1), 80–95.

Gul, R., & Khan, S. S. (2020). Organizational Politics as Antecedent of Stress in Public Sector Universities of Khyber Pakhtunkhwa. *International Review of Management and Business Research*, 9(2), 150–165.

Gul, R., & Khan, S. S. (2021). Influence of Logical and Spatial Intelligence on Teaching Pedagogies of Secondary School Teachers. *Humanities and Social Sciences Reviews*, 8(6), 1–9.

Gul, R., & Khilji, G. (2021). Exploring the need for a responsive school curriculum to cope with the Covid-19 pandemic in Pakistan. *Prospects*, 51(1), 1–14. SpringerLink

Gul, R., & Reba, A. (2022). An Investigation into the Teachers' Intelligences on Their Teaching Strategies at Secondary Level in Khyber Pakhtunkhwa Province of Pakistan. *Journal of Educational Research*, 25(1), 50–65.

Gul, R., & Tahir, T. (2023). Impact of Teachers' Workload on Their Time Management Skills at University Level. *Journal of Social Sciences Review*, 3(1), 322–334.

Gul, R., & Tahir, T. (2023). Perspectives of the Teachers on Challenges and Possibilities to Online System of Education Amid COVID-19 Outbreak in Balochistan, Pakistan. *SAGE Open*, 13(1), 21582440231155063.

Gul, R., Ayub, A., Mazhar, S., Uddin, S. S., & Khanum, M. (2021). Teachers' perceptions on students' cultural and linguistic diversity and its impact on their approaches towards culturally teaching practices. *TESOL International Journal*, 16(3.2), 95–110. Academia

Gul, R., Kanwal, S., & Khan, S. S. (2020). Preferences of the teachers in employing revised Bloom's taxonomy in their instructions. *Sir Syed Journal of Education & Social Research*, 3(2), 258–266.

Gul, R., Rabbi, F., Batool, S., Tahir, T., & Asif, M. (2024). Exploring gender disparities related challenges in competencies for sustainable development at higher educational institutions in Pakistan. *Evolutionary Studies in Imaginative Culture*, 8(2), 1585–1591.

Gul, R., Rabbi, F., Batool, S., Tahir, T., & Asif, M. (2024). Exploring gender disparities related challenges in competencies for sustainable development at higher education institutions in Pakistan. *Evolutionary Studies in Imaginative Culture, 8*(2 Suppl.), 1585–1591.

Gul, R., Talat, M., Mumtaz, M., & Shaheen, L. (2021). Does intelligence matter in teaching? Exploring the impact of teachers' intelligence on teaching pedagogies of secondary school science teachers. *Multicultural Education*, 7(3), 45–58.

Gul, K., Ilyas, M., Gul, R., Riaz, T., & Khan, A. M. (2025). Investigating the prevalence of depression and anxiety in burnt patients: A cross-sectional study in Khyber Pakhtunkhwa, Pakistan. *Physical Education Health and Social Sciences, 3*(1), 208–217.

Gul, R., Alm, A., Ayub, A., Saleem, T., & Mahmood, N. (2024). The role of institutional support in sustainable development competencies among academic faculty at higher educational institutions. *Kurdish Studies, 12*(5), 1692–1896.

Rabbi, F., & Gul, R. (2023). Students' knowledge of metacognitive strategies and use of technology in their writing skills. *International Journal of Social Science Archives, 19*(2), 25–39.

Ghose, A., Ali, S. A., & Mishra, A. M. (2024). Artistic expressions, generative AI, and legal tapestry: Exploring the dynamics of Copyright laws in the confluence of AI and artistic creation. In *Making Art with Generative AI Tools* (pp. 198–214). IGI Global. https://www.igi-global.com/chapter/artistic-expressions-generative-ai-and-legal-tapestry/343429

Hagendorff, T. (2020). The Ethics of AI Ethics: An Evaluation of Guidelines. *Minds and Machines, 30*(1), 99–120. https://doi.org/10.1007/s11023-020-09517-8

Iosifidis, P., & Nicoli, N. (2020). The battle to end fake news: A qualitative content analysis of *Facebook* announcements on how it combats disinformation. *International Communication Gazette, 82*(1), 60–81. https://doi.org/10.1177/1748048519880729

Kazim, E., & Koshiyama, A. S. (2021). A high-level overview of AI ethics. *Patterns, 2*(9). https://www.cell.com/patterns/pdf/S2666-3899(21)00157-4.pdf

Khan, J. A., Gul, R., Riaz, T., Bibi, S., & Ahmad, S. (2025). Pre-service teachers' perceptions of supervisor feedback: Evaluating the effectiveness of teaching practicum support in Pakistan. *Review Journal of Social Psychology and Social Work, 3*(1).

Leslie, D. (2019). *Understanding artificial intelligence ethics and safety*.

https://doi.org/10.5281/zenodo.3240529

Lewis, D., & Moorkens, J. (2020). A Rights-Based Approach to Trustworthy AI in Social Media. *Social Media + Society*, *6*(3), 205630512095467. https://doi.org/10.1177/2056305120954672

Mehmood, S., Rao, S. N., & Gul, R. (2024). Impact of psychological contract violation on turnover intentions among project employees: Mediating role of burnout and moderating role of self-efficacy. *Journal of Business and Tourism, 10*(1), 62–78.

Mammen, C. E., & Richey, C. (2020). AI and IP: Are Creativity and Inventorship Inherently Human Activities? *FIU L. Rev., 14*, 275.

McCormack, J., Hutchings, P., Gifford, T., Yee-King, M., Llano, M. T., & D'inverno, M. (2020). Design considerations for real-time collaboration with creative artificial intelligence. *Organised Sound, 25*(1), 41–52.

Mensah, G. B. (n.d.). *Ethics, Bias, and Risks in AI diagnosis*. Retrieved 26 September 2024, from https://www.researchgate.net/profile/George-Benneh-Mensah/publication/381584371_Ethics_Bias_and_Risks_in_AI_diagnosis/links/667550f11dec0c3c6f986b17/Ethics-Bias-and-Risks-in-AI-diagnosis.pdf

Mitchell, M. (2018). Comment on "The Impact of Artificial Intelligence on Innovation: An Exploratory Analysis". In *The Economics of Artificial Intelligence: An Agenda* (pp. 146–148). University of Chicago Press. https://www.nber.org/books-and-chapters/economics-artificial-intelligence-agenda/comment-impact-artificial-intelligence-innovation-exploratory-analysis-mitchell

Mogol, N., & Crudu, R. (2022). Challenges and strategies for copyright protection in the digital era. *Journal of Social Sciences, 4*, 6–19.

Morley, J., Machado, C. C., Burr, C., Cowls, J., Joshi, I., Taddeo, M., & Floridi, L. (2020). The ethics of AI in health care: A mapping review. *Social Science & Medicine, 260*, 113172.

Naqvi, Z. (2020). Artificial intelligence, copyright, and copyright infringement. *Marq. Intell. Prop. L. Rev., 24*, 15.

Olorunsogo, T., Adenyi, A. O., Okolo, C. A., & Babawarun, O. (2024). Ethical considerations in AI-enhanced medical decision support systems: A review. *World Journal of Advanced Engineering Technology and Sciences, 11*(1), 329–336. https://doi.org/10.30574/wjaets.2024.11.1.0061

Palkova, K. (2021). Ethical guidelines for artificial intelligence in healthcare from the development perspective. *European Journal of Sustainable Development, 10*(1), 90–90.

Piskopani, A. M., Chamberlain, A., & Ten Holter, C. (2023). Responsible AI and the Arts: The Ethical and Legal Implications of AI in the Arts and Creative Industries. *Proceedings of the First International Symposium on Trustworthy Autonomous Systems*, 1–5. https://doi.org/10.1145/3597512.3597528

Powers, T. M., & Ganascia, J.-G. (2020). The Ethics of the Ethics of AI. *The Oxford Handbook*

of Ethics of AI, 25–51.

Raj, R., & Kos, A. (2022). A comprehensive study of mobile robot: History, developments, applications, and future research perspectives. *Applied Sciences*, *12*(14), 6951.

Roitblat, H. L. (2020). *Algorithms Are Not Enough: Creating General Artificial Intelligence*. MIT Press.

Saini, M. K., & Kumar, A. (2020). AI in Healthcare: Applications, Challenges, and Future Prospects. *RES MILITARIS*, *10*(1), 141–148.

Sandiumenge, I. (2023). Copyright Implications of the Use of Generative AI. *Available at SSRN 4531912*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4531912

Serrano-Puche, J. (2021). Digital disinformation and emotions: Exploring the social risks of affective polarization. *International Review of Sociology*, *31*(2), 231–245. https://doi.org/10.1080/03906701.2021.1947953

Singh, K. (2024). *AI and Healthcare: Opportunities and Challenges*. http://archive.article4submit.com/id/eprint/2773/

Sohail, M., Gul, R., & Mushtaq, R. (2018). The establishment of Azad School Utmanzai and Anjuman-i-Islahul Afaghina: A successful methodology of organizational excellence (1921–1946). *Global Social Sciences Review*, 3(3), 193–206.

Sun, H. (2021). Redesigning copyright protection in the era of artificial intelligence. *Iowa L. Rev.*, *107*, 1213.

Tolulope Olorunsogo, Adekunle Oyeyemi Adenyi, Chioma Anthonia Okolo, & Oloruntoba Babawarun. (2024). Ethical considerations in AI-enhanced medical decision support systems: A review. *World Journal of Advanced Engineering Technology and Sciences*, *11*(1), 329–336. https://doi.org/10.30574/wjaets.2024.11.1.0061

Tufail, G. M., Gul, R., & Ali, H. (2024). Humble leadership and knowledge hiding: Mediating role of psychological empowerment. *Journal of Business & Economics*, 15(1), 50–65.

Tufail, M., Gul, R., & Ali, H. (2024). Humble leadership and knowledge hiding: Mediating role of psychological empowerment. *Journal of Business & Economics*, *16*(1), 102–115.

Villaronga, E. F., Kieseberg, P., & Li, T. (2018). Humans forget, machines remember: Artificial intelligence and the right to be forgotten. *Computer Law & Security Review*, *34*(2), 304–313.

Wach, K., Duong, C. D., Ejdys, J., Kazlauskaitė, R., Korzynski, P., Mazurek, G., Paliszkiewicz, J., & Ziemba, E. (2023). The dark side of generative artificial intelligence: A critical analysis of controversies and risks of ChatGPT. *Entrepreneurial Business and Economics Review*, *11*(2), 7–30.

Wagner, B. (2019). Ethics As An Escape From Regulation. From "Ethics-Washing" To Ethics-

Shopping? In E. Bayamlioglu, I. Baraliuc, L. A. W. Janssens, & M. Hildebrandt (Eds.), *BEING PROFILED* (pp. 84–89). Amsterdam University Press. https://doi.org/10.1515/9789048550180-016

Wardle, C. (2020). *Journalism and the new information ecosystem: Responsibilities and challenges*. https://direct.mit.edu/books/edited-volume/4625/chapter-abstract/212089

Weidener, L., & Fischer, M. (2024). Proposing a Principle-Based Approach for Teaching AI Ethics in Medical Education. *JMIR Medical Education*, *10*, e55368. https://doi.org/10.2196/55368

Whittlestone, J., Nyrup, R., Alexandrova, A., & Cave, S. (2019). The Role and Limits of Principles in AI Ethics: Towards a Focus on Tensions. *Proceedings of the 2019 AAAI/ACM Conference on AI, Ethics, and Society*, 195–200. https://doi.org/10.1145/3306618.3314289

Winfield, A. F. T., & Jirotka, M. (2018). Ethical governance is essential to building trust in robotics and artificial intelligence systems. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, *376*(2133), 20180085. https://doi.org/10.1098/rsta.2018.0085

Yang, H. (2025). Artificial intelligence art robots: The future of technological art or the end of the human artist? *International Theory and Practice in Humanities and Social Sciences*, *2*(1), 243–251.

Zhang, S. (2019). Research on copyright protection of AI creation. *1st International Symposium on Innovation and Education, Law and Social Sciences (IELSS 2019)*, 510–514. https://www.atlantis-press.com/proceedings/ielss-19/125916418

Zirpoli, C. T. (2023). *Generative Artificial Intelligence and Copyright Law*. https://digitalcommons.unl.edu/scholcom/243/

Zurth, P. (2020). Artificial Creativity? A Case Against Copyright Protection for AI-Generated Works. *UCLA JL & Tech.*, *25*, i.