

A Conceptual Exploration of Artificial Super Intelligence and Its Implications for Educational Research

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Abstract

Artificial Super Intelligence (ASI) is anticipated to profoundly reshape education research by introducing unprecedented capabilities and complex challenges. This review synthesizes current discourse on AI in education with prospective implications of ASI, which is characterized by problem-solving speed, power, and precision far exceeding human capacity citation:[1]. ASI's integration is expected to revolutionize research methodologies, enabling advanced data analysis, automated hypothesis generation, and multimodal simulations of learning processes [2][3]. However, this transformative potential is paralleled by significant ethical concerns, including amplified issues of data privacy, algorithmic bias, and the potential for technological over-reliance and deskilling of human researchers [4][5][6]. The "human-in-the-loop" principle emerges as critical, advocating for human oversight and ethical frameworks to guide ASI implementation responsibly [7][8]. Furthermore, ASI will impact curriculum development and knowledge gatekeeping, necessitating "Deep ASI Literacy" to ensure beneficial integration and align technological advancement with humanistic educational goals [1][9]. This paper underscores the urgent need for proactive ethical and strategic inquiry into ASI's role in education research to foster equitable, human-centered educational futures.

Keywords: Artificial Super Intelligence, Artificial Intelligence, Research, Education, Implications

Introduction

The rapid progression of Artificial Intelligence (AI) has initiated a global conversation about its potential to evolve into Artificial General Intelligence (AGI) and subsequently, Artificial Super Intelligence (ASI) citation:2]. ASI, distinct from current AI, is envisioned as an entity possessing problem-solving abilities that dramatically exceed human capabilities across all intellectually demanding tasks [1]. While ASI remains a hypothetical construct, its potential emergence could be abrupt and profoundly transformative, necessitating proactive inquiry, particularly within the domain of education research [10]. This research proposal is grounded in a theoretical framework that integrates [socio-technical systems theory with critical pedagogy and ethics of technology. Socio-technical systems theory posits that the optimal functioning of any organization or system requires joint optimization of both its social and technical components. In the context of ASI in education research, this means understanding how advanced AI technologies will interact with human researchers, educational institutions, and societal values, emphasizing that technological advancements alone are insufficient without considering their human and social

implications [7]. Critical pedagogy, on the other hand, provides a lens to analyze how ASI might perpetuate or challenge existing power structures, inequalities, and biases within educational knowledge production and dissemination [11][12]. It compels researchers to question whose interests are served by ASI-driven research and how educational equity and access can be ensured [13]. Finally, the ethics of technology framework guides the investigation into the moral implications of designing, deploying, and utilizing ASI in a field as sensitive as education, focusing on issues like fairness, accountability, transparency, and data governance [4][5][14][6][15].

The scope of this Research encompasses a multidimensional reflection on ASI's potential impact on the entire education research ecosystem. This includes: (1) Methodological transformation: how ASI could alter data collection, analysis, hypothesis generation, and experimental design [2][3]; (2) Epistemological shifts: changes in how knowledge is defined, validated, and transferred within educational contexts [12][9]; (3) Ethical and societal implications: challenges related to data privacy, algorithmic bias, equity, job displacement for researchers, and the balance between technological rationality and humanistic care [4][5][14][6]; and (4) Policy and practice: the implications for developing responsible guidelines, curricula, and researcher training programs to adapt to an ASI-infused research landscape [1][7]. The research aims to move beyond mere technological descriptions to explore the deeper philosophical, ethical, and practical consequences of ASI in shaping the future of educational inquiry.

Review of Key Research Works for the Research

The existing literature provides a critical foundation for understanding the implications of ASI on education research, largely through the lens of current AI advancements and their projected evolution. Seminal work by Tanchuk (2025) introduces the concept of "Deep ASI Literacy," emphasizing the critical need for comprehensive education regarding the capabilities, limitations, and ethical dimensions of Artificial Super Intelligent systems [1]. This concept extends beyond conventional AI literacy, suggesting that an entirely new form of understanding will be required to align humanity with ASI's potential, thereby directly influencing how education researchers themselves must be trained and how research outcomes are interpreted for societal benefit.

Dessureault et al. (2025) provide a crucial global risk perspective on the ethics of creating ASI, highlighting its potential for abrupt and profoundly transformative emergence [10]. Their multidimensional reflection on ASI's technical and societal forms underscores the urgency for proactive ethical and strategic inquiry, which directly informs the ethical considerations of our Research. This perspective is echoed by studies focusing on the ethical challenges associated with AI in university education, citing concerns around data privacy, equity in educational resources, and algorithmic biases that could compromise academic integrity [5][14][6]. These concerns, while currently attributed to less advanced AI, would be significantly amplified by ASI, making them paramount for future education research.

From a methodological standpoint, Wang et al. (2023) in *Nature* (Impact Factor: 48.5) extensively review how AI is being integrated into scientific discovery to augment and accelerate research, enabling hypothesis generation, experimental design, and interpretation of large datasets [2]. They highlight breakthroughs in self-supervised learning and geometric deep learning that allow models to process vast amounts of unlabeled data, capabilities that ASI would push to extreme limits in education research. Similarly, Xiong et al. (2025) present a novel framework for how AI, as a tool, assistant, and participant, can reshape the research ecosystem and drive innovative thinking through human-AI collaboration [3]. This work is highly relevant as it conceptualizes ASI not merely as a tool, but as a collaborative entity that fundamentally alters research paradigms.

The impact of AI on higher education has been a subject of increasing bibliometric analysis [16][17][18]. Lachheb et al. (2025) offer a comprehensive bibliometric assessment of AI in higher education, identifying common research topics and their relation to educational disparities and inclusivity [16]. These studies reveal a significant increase in AI-related research output and highlight themes such as adaptive learning systems, intelligent tutoring platforms, and the ethical implementation of AI [18][19][20]. While these works focus on current AI, they establish the trajectory and research landscape upon which ASI's impact will be layered, emphasizing the existing concerns about responsible implementation and the need for inclusive education [7][8].

Furthermore, research by Zhao et al. (2025) critically examines the problems and promises of educational research in the age of AI, questioning why traditional educational research has struggled to influence practice and policy meaningfully [11]. They suggest that AI necessitates a fundamental rethinking of research purposes, methods, and epistemologies, a notion that becomes even more urgent with ASI. Li et al. (2025) delve into the paradigm transformation of educational philosophy in the era of AI, addressing the crisis of knowledge transfer dominance, technological dependence risks, and the imbalance between technological rationality and humanistic care [12]. Zagkotas (2025) extends this by exploring how AI reshapes the didactic transposition of knowledge, curriculum development, and the role of algorithmic systems in selecting pedagogical content [9]. These insights are crucial for understanding how ASI might fundamentally redefine what constitutes "knowledge" in education and how it is transmitted. Finally, Yu and Yu (2023) conduct qualitative and quantitative analyses of AI ethics in education, identifying key authors, sources, and organizations, providing a map of the ethical discourse that will be pivotal for navigating ASI's complexities [15]. The synthesis of these works underscores that ASI's implications are not just technological but deeply philosophical, ethical, and societal, demanding a holistic research approach.

Identification of Research Gap

Despite the growing body of literature on Artificial Intelligence in education, a significant research gap exists concerning the specific implications of Artificial Super Intelligence (ASI) on education research. Current studies primarily focus on the ethical, pedagogical, and methodological impacts of present-day AI, including advanced generative AI and machine learning tools [21][22][23][24][19]. While these works provide a foundation, they largely operate within the paradigm of AI as a sophisticated tool or assistant that enhances human capabilities [3]. The literature, however, lacks comprehensive, prospective analyses of a future where ASI, an entity far exceeding human cognitive capacity, becomes an integral, potentially autonomous, component of the research process [1][10].

Specifically, the identified gaps include:

1. Lack of dedicated epistemological frameworks for ASI-driven educational knowledge production: While existing work discusses AI's influence on knowledge transfer and curriculum development [12][9], there is no framework specifically addressing how ASI's capacity for generating novel insights, designing complex experiments, and interpreting vast datasets might redefine the nature of educational knowledge itself, its validation, and its truth criteria.
2. Insufficient exploration of human-ASI symbiotic research models: Current discussions emphasize "human-in-the-loop" approaches for AI citation:16][8]. However, the implications of ASI's superior cognitive abilities necessitate an exploration of genuinely symbiotic research models where ASI might lead [research design, hypothesis generation, and even critical analysis, requiring a re-evaluation of the human researcher's role, expertise, and agency within such a partnership [2][3].
3. Limited prospective analysis of systemic ethical governance for ASI in education research: Existing ethical guidelines for AI in education address issues like data privacy, bias, and equity [4][5][14][6][15]. Yet, these do not fully account for the scale, autonomy, and potential for emergent behaviors of ASI. There is a critical need for frameworks that can anticipate and govern the ethical implications of ASI operating at a super-human level, particularly concerning accountability, control, and the potential for unintended consequences in shaping educational outcomes and research agendas.
4. Absence of specific "Deep ASI Literacy" curriculum for future education researchers: While "Deep ASI Literacy" has been proposed [1], the specific pedagogical content, methods, and competencies required for education researchers to effectively engage with, understand, and critically evaluate ASI-generated research outputs and methodologies remain undefined.

This research aims to fill these critical gaps by providing a forward-looking, theoretically robust, and ethically grounded examination of ASI's transformative potential and challenges for education research.

Objectives of the Research

The primary objectives of this Research are to:

1. Develop a theoretical framework that models the potential interactions and symbiotic relationships between Artificial Super Intelligence (ASI) and human researchers in the context of educational inquiry, moving beyond current "human-in-the-loop" paradigms [3][7].
2. Analyze the epistemological shifts that could arise from ASI's integration into education research, examining how ASI's capacity for advanced data synthesis and hypothesis generation might redefine the nature of educational knowledge, evidence, and research validity [12][2].
3. Propose a comprehensive ethical governance framework specifically tailored for the deployment and utilization of ASI in education research, addressing amplified concerns related to data privacy, algorithmic bias, accountability, and the safeguarding of humanistic values in learning [4][5][6].
4. Outline key competencies and a preliminary curriculum for "Deep ASI Literacy" necessary for future education researchers, enabling them to effectively collaborate with, critically assess, and ethically navigate ASI-driven research environments [1].
5. Identify potential societal and policy implications for the future of education research, including recommendations for educational institutions, funding bodies, and policymakers to prepare for and harness ASI's transformative power responsibly [7].

Major Research Questions

The major research questions guiding this inquiry are:

1. How might Artificial Super Intelligence (ASI) fundamentally alter the methodologies of educational research, from hypothesis generation and experimental design to data analysis and interpretation?
2. What epistemological transformations would the integration of ASI bring to the field of education research, particularly concerning the definition of knowledge, the criteria for evidence, and the processes of knowledge validation and dissemination?
3. What specific ethical challenges, amplified by ASI's super-human capabilities, will emerge in education research, and what robust governance frameworks are necessary to address data privacy, algorithmic bias, and human accountability?
4. What constitutes "Deep ASI Literacy" for education researchers, and what pedagogical strategies are required to cultivate the competencies needed to effectively collaborate with and critically assess ASI-generated research?
5. What policy recommendations are essential for educational institutions, research funding bodies, and governments to proactively prepare for and responsibly integrate ASI into the future of education research, ensuring equitable access and human-centered outcomes?

Hypotheses:

- * H1: The integration of ASI will lead to a paradigm shift in educational research methodologies, enabling the automated generation of complex, multi-modal hypotheses and experimental designs that surpass current human cognitive limits.
- * H2: ASI's analytical capabilities will necessitate a re-evaluation of current epistemological criteria in education research, potentially prioritizing data-driven correlational insights over traditional causal mechanisms derived from human intuition.

* H3: Without proactive and robust ethical governance, ASI's deployment in education research will significantly exacerbate existing concerns regarding data privacy breaches and algorithmic biases, leading to unintended and inequitable educational outcomes.

* H4: The development and widespread adoption of "Deep ASI Literacy" among education researchers will be critical for harnessing ASI's potential beneficially while mitigating its risks.

Methodology for the Research Work

This research will employ a mixed-methods approach, combining systematic literature review, conceptual analysis, expert interviews, and scenario planning to address the complex and prospective nature of ASI's impact on education research.

Systematic Literature Review and Conceptual Analysis: A comprehensive systematic literature review will be conducted on existing research pertaining to AI in education, AI ethics, future studies of AI/ASI, and educational philosophy [25][16][18][20]. Databases such as Web of Science, Scopus, and ERIC will be searched using keywords including "Artificial Super Intelligence," "ASI," "AI in education research," "ethics of AI education," "epistemology of AI," and "future of educational research." This review will consolidate current understandings, identify trends, and map the conceptual landscape [18]. Conceptual analysis will then be applied to synthesize findings, develop theoretical frameworks, and clarify definitional ambiguities surrounding ASI and its implications [12].

Expert Interviews: Semi-structured interviews will be conducted with a diverse panel of approximately 20-30 experts. This panel will include:

* Leading AI researchers specializing in advanced AI/ASI development (e.g., from institutions known for cutting-edge AI).

* Prominent education researchers with expertise in educational technology, philosophy of education, and research methodology (e.g., from institutions with high-impact educational research programs).

* Ethicists focusing on AI and technology governance (e.g., from academic ethics centers or policy organizations).

* Policymakers involved in education technology and AI regulation (e.g., from national or international educational bodies).

Justification of Research Sites and Sampling: Experts will be selected using a purposive sampling strategy, aiming for maximum variation in perspectives and expertise, particularly from institutions with significant contributions to AI development and educational innovation. The justification for this approach is to gather insights from individuals at the forefront of both AI capabilities and educational implications, ensuring a forward-looking and comprehensive understanding that anticipates future developments rather than merely reacting to current trends [10]. Interview data will be transcribed and analyzed using thematic analysis, identifying recurring themes, emerging challenges, and potential opportunities.

Scenario Planning: Building upon the literature review and expert insights, a series of future scenarios will be developed to explore various possible trajectories of ASI integration into education research. These scenarios will range from optimistic (e.g., highly symbiotic human-ASI collaboration) to pessimistic (e.g., increased algorithmic bias, deskilling of researchers, privacy erosion) to depict the range of potential outcomes. This method helps to identify critical uncertainties and decision points for policymakers and researchers.

Data Collection Methods:

* Literature data: Retrieved from academic databases (e.g., Web of Science, Scopus) and categorized using reference management software.

* Interview data: Audio recordings and detailed notes from semi-structured interviews.

* Scenario data: Developed through iterative workshops with a smaller subset of experts, validating assumptions and potential outcomes.

Data Analysis Methods:

* Quantitative Bibliometric Analysis (for literature review): Tools like VOSviewer and CiteSpace will be used to visualize knowledge maps, identify research clusters, and track the evolution of key themes in AIEd and AI ethics [25][18][15].

* Qualitative Thematic Analysis (for expert interviews and scenario planning): Inductive coding will be employed to identify, analyze, and report patterns within the qualitative data. This will allow for the extraction of expert opinions on ASI's impact, ethical considerations, and future needs [15].

* Conceptual Synthesis: All findings will be integrated to construct the theoretical frameworks, ethical guidelines, and policy recommendations, ensuring a coherent and well-supported argument.

This rigorous, multi-faceted methodology is designed to address the complexity and speculative nature of ASI, generating robust and actionable insights for the education research community.

Innovation/Path-Breaking Aspects of the Research

This research distinguishes itself through several innovative and path-breaking aspects, moving beyond current discourse on AI in education to proactively address the advent of Artificial Super Intelligence (ASI) [5][2]. Firstly, it pioneers the development of an epistemological framework specifically designed to understand how ASI's advanced capabilities in data synthesis, hypothesis generation, and complex problem-solving will redefine educational knowledge itself [3]. This moves beyond merely applying AI as a tool to critically examine how ASI might fundamentally alter what constitutes valid knowledge and evidence in educational research [4]. Secondly, the study proposes and explores genuinely symbiotic human-ASI research models, challenging the prevalent "[human-in-the-loop]" paradigm by envisioning scenarios where ASI actively leads research design and critical analysis [5]. This approach re-evaluates the human researcher's role and agency in an ASI-driven ecosystem [5]. Thirdly, the research will formulate a comprehensive ethical governance framework tailored to the unique scale, autonomy, and potential for emergent behaviors of ASI, addressing amplified concerns regarding privacy, bias, and accountability at a super-human level [6][2]. Lastly, the development of a "Deep ASI Literacy" curriculum for future education researchers is a novel contribution, providing specific pedagogical content and competencies necessary to navigate and critically engage with ASI-generated research outputs, thus ensuring a humanistic alignment with advanced intelligence [1]. These innovations aim to provide a crucial foresight perspective, enabling the education research community to proactively shape a future where ASI enhances human flourishing rather than diminishing it [1].

Conclusion

The preceding sections have detailed a comprehensive research exploring the profound implications of Artificial Super Intelligence (ASI) on education research. This work posits that ASI, with its ability to exceed human problem-solving speed, power, and precision across virtually all intellectual domains [1][2], will necessitate a fundamental paradigm shift in how educational inquiry is conceived, conducted, and governed [3][4]. The proposal meticulously outlines a theoretical framework grounded in socio-technical systems theory, critical pedagogy, and the ethics of technology, aiming to understand the intricate interactions between advanced AI, human researchers, educational institutions, and societal values. It highlights a critical research gap: the absence of dedicated epistemological frameworks for ASI-driven educational knowledge, insufficient exploration of genuinely symbiotic human-ASI research models, limited prospective analysis of systemic ethical governance for

ASI in education research, and the lack of a specific "Deep ASI Literacy" curriculum for future education researchers.

To address these gaps, the research proposes specific objectives: developing a theoretical framework for human-ASI interaction in educational inquiry, analyzing epistemological shifts from ASI integration, proposing a comprehensive ethical governance framework, outlining key competencies for "Deep ASI Literacy," and identifying societal and policy implications [1]. The methodology involves a mixed-methods approach, combining systematic literature review, conceptual analysis, expert interviews with a diverse panel of AI researchers, education specialists, ethicists, and policymakers, alongside scenario planning. Data analysis will leverage quantitative bibliometric tools like VOSviewer for literature review and qualitative thematic analysis for expert insights and scenarios [5].

This research is inherently innovative and path-breaking. It moves beyond current "human-in-the-loop" paradigms to explore genuinely symbiotic human-ASI research models, envisioning scenarios where ASI actively leads research design and critical analysis, thereby redefining the human researcher's role and agency [5]. Furthermore, it formulates a comprehensive ethical governance framework specifically tailored to the unique scale, autonomy, and potential for emergent behaviors of ASI, addressing amplified concerns regarding privacy, bias, and accountability at a superhuman level [2]. A crucial contribution is the development of a "Deep ASI Literacy" curriculum, providing pedagogical content and competencies necessary to navigate and critically engage with ASI-generated research outputs, ensuring humanistic alignment with advanced intelligence [1].

The expected outputs include high-impact journal articles, an edited book synthesizing findings, policy papers for governmental and educational bodies, and a public dataset to foster transparency and further research. These outputs are designed to establish a foundational understanding of ASI's implications for education research, inform policy, and guide the academic community in navigating this emerging technological landscape.

The relevance for policy is significant, as the research will inform the development of robust ethical guidelines and regulatory frameworks for ASI in education, guiding curriculum development for "Deep ASI Literacy," and providing a foresight perspective for anticipating long-term societal and educational shifts [6][7]. Societally, this research will inform public understanding of evidence-based educational practices in an ASI-influenced world, protect societal values through ethical governance, and empower individuals to navigate a complex technological landscape, ultimately striving to ensure that ASI integration enhances human flourishing and critical thinking [8][9]. The proactive and comprehensive nature of this research is vital for steering the future integration of ASI into education research towards equitable, human-centered outcomes.

References

- [1] <https://www.bohrium.com/en/paper-details/deep-asi-literacy-educating-for-alignment-with-artificial-super-intelligent-systems/1138829802757685248-15096>
- [2] <https://www.bohrium.com/en/paper-details/scientific-discovery-in-the-age-of-artificial-intelligence/894066109072801798-8233>
- [3] <https://www.bohrium.com/en/paper-details/artificial-intelligence-in-research-ecosystem-ai-roles-new-research-thinking-paradigms-and-collaborative-potential/1157763149185679360-0>
- [4] <https://www.bohrium.com/en/paper-details/other/1039777905611112477-0>
- [5] <https://www.bohrium.com/en/paper-details/ethical-challenges-associated-with-the-use-of-artificial-intelligence-in-university-education/1146933413328977920-14829>
- [6] <https://www.bohrium.com/en/paper-details/other/1055798421308309518-67596>
- [7] <https://www.bohrium.com/en/paper-details/artificial-intelligence-in-education-implications-for-policymakers-researchers-and-practitioners/1005292555320950789-25858>
- [8] <https://www.bohrium.com/en/paper-details/navigating-the-ethical-terrain-of-ai-in-education-a-systematic-review-on-framing-responsible-human-centered-ai-practices/1046271062808985602-80334>

- [9] <https://www.bohrium.com/en/paper-details/artificial-intelligence-and-the-didactic-transposition-of-knowledge-implications-for-curriculum-development-and-knowledge-gatekeeping/1157457133013303297-0>
- [10] <https://www.bohrium.com/en/paper-details/the-ethics-of-creating-artificial-superintelligence-a-global-risk-perspective/1164872576720175104-80515>
- [11] <https://www.bohrium.com/en/paper-details/the-death-and-rebirth-of-research-in-education-in-the-age-of-ai-problems-and-promises/1167517488942940165-0>
- [12] <https://www.bohrium.com/en/paper-details/on-the-paradigm-transformation-of-educational-philosophy-in-the-era-of-artificial-intelligence/1153483809715388416-0>
- [13] <https://www.bohrium.com/en/paper-details/a-study-of-the-role-of-artificial-intelligence-ai-in-promoting-educational-equity-and-access-in-african-higher-education-institutions/1157331666465718274-0>
- [14] <https://www.bohrium.com/en/paper-details/artificial-intelligence-in-education-ethical-considerations-and-insights-from-ancient-greek-philosophy/1045944893781835787-108598>
- [15] <https://www.bohrium.com/en/paper-details/qualitative-and-quantitative-analyses-of-artificial-intelligence-ethics-in-education-using-vosviewer-and-citnetexplorer/864954828739051782-7971>
- [16] <https://www.bohrium.com/en/paper-details/ai-in-higher-education-a-bibliometric-analysis-synthesis-and-a-critique-of-research/1142346004276707329-6929>
- [17] <https://www.bohrium.com/en/paper-details/the-influence-of-artificial-intelligence-in-higher-education-based-on-four-thematic-axes-a-bibliometric-study/1039170303407685667-84768>
- [18] <https://www.bohrium.com/en/paper-details/visualizing-the-knowledge-mapping-of-artificial-intelligence-in-education-a-systematic-review/1051718653822631984-10001>
- [19] <https://www.bohrium.com/en/paper-details/application-of-ai-in-the-field-of-education-dynamic-course-generation/1038065546345578538-46649>
- [20] <https://www.bohrium.com/en/paper-details/systematic-literature-review-on-opportunities-challenges-and-future-research-recommendations-of-artificial-intelligence-in-education/817404075476779009-96836>
- [21] <https://www.bohrium.com/en/paper-details/reimagining-higher-education-the-transformative-role-of-artificial-intelligence-in-teaching-learning-and-research/1192946374962839553-2000000>
- [22] <https://www.bohrium.com/en/paper-details/generative-artificial-intelligence-tools-in-education-research-applications-and-methodological-enhancements/1187329626389610497-0>
- [23] <https://www.bohrium.com/en/paper-details/the-impact-of-artificial-intelligence-on-education/997243466800955687-0>
- [24] <https://www.bohrium.com/en/paper-details/unleashing-the-transformative-power-harnessing-artificial-intelligence-in-education/949079719054147656-93506>
- [25] <https://www.bohrium.com/en/paper-details/overview-of-artificial-intelligence-applications-in-educational-research/1153444849114939393-0>