English Abstracts

The Social Impact of AI and the Transformation of Education

MIMA Noyuri

This paper explores the significant impact of the rapidly advancing generative AI technologies on society and the resulting imperative for education to be transformed. The widespread adoption of generative AI has unveiled a range of risks, including the proliferation of misinformation and disinformation, an over-reliance on AI systems leading to a decline in people's critical thinking skills, shifts in job structures with potential job losses, and the concentration of power in large tech corporations. While technical solutions and legal regulations are vital to addressing these challenges, this paper focuses on the crucial role of education. It emphasizes the importance of fostering AI literacy and integrating ELSI (ethical, legal, and social issues)-oriented project-based learning and discussion-based learning methodologies into educational practices. By implementing these educational strategies, individuals can be equipped with the knowledge, skills, and ethical frameworks they require to responsibly navigate the complexities of an AI-influenced society. This paper outlines specific initiatives, such as the "aiEDU JAPAN" project's provision of free educational materials. Then, it discusses their significance in shaping education's future directions for meeting the demands of the AI era.

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Expectations for University Education and Curriculum Development in Practice: Considerations of Cross-Literary and Science Education

SUGITANI Yumiko

This paper focuses on cross-literary and science education, which is expected to contribute to solving problems in this unpredictable age. It examines the issues that arise in curriculum development and then discusses future curriculum management.

In recent years, universities have been required to have a systematic, cross-disciplinary, and flexible curriculum, and it has thus become necessary to devise both curriculum design and management. Cross-literary and science education ranges from general education to specialized education. Moreover, the curriculum is diverse, with different subject categories, scopes and levels of academic disciplines, course requirements, and number of credits, among others. In addition, there are issues related to the method of admission selection, educational objectives and goals, the curriculum, student awareness, and management.

Because cross-literary and science education covers a wide range of academic fields, many actors are involved in developing the curriculum. Therefore, ensuring linkages between curriculum design and collaboration in management is crucial. It is necessary to define whether cross-literary and science education should be regarded as an "objective" or a "means," to clarify educational objectives and goals, and to carefully design curricula, set course requirements, and provide course guidance. The goal is for students to have real learning experiences that transcend the boundaries of the arts and sciences in accordance with these objectives.

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Aiming for University Education as a Place Where Diverse Students Actively Learn from One Another

FUKUDOME Hideto

The evolution of AI and technology has significantly impacted education by driving efficiency and requiring innovative approaches aimed at supporting human growth that do not hinder learning. Universities should build educational frameworks that inspire students to be independent and interested in social issues. The University of Tokyo is striving for multidisciplinary education through reforming undergraduate education based on its "Academic Long-Term Vision" and establishing the College of Design.

Japanese education is characterized by a "siloed" structure that focuses on the efficient mastery of specialized fields in a short period. However, it has been criticized for not fostering independent thinking and initiative in students. By contrast, the United States emphasizes liberal arts education, which focuses on the formation of well-rounded individuals who think from diverse perspectives. Moreover, the natural integration of disciplines beyond specific areas of expertise is another major difference compared with Japan.

In modern university education, the integration of objective and subjective knowledge, as well as collaborative learning that respects diversity, is essential. It is necessary to cultivate an environment where the relativity and expansiveness of knowledge are recognized, and where diverse individuals can learn together. Additionally, education that addresses social issues should nurture students' ability to identify and solve problems, adopt interdisciplinary perspectives, and place importance on diversity and inclusivity. This approach ultimately aims to create a fairer society.

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Algorithmic Thinking as Common Basics: Development and Implementation of STEA²M – An Enhanced Framework for STEAM Education –

SUZUKI Yasuhiro

We propose "STEA²M," a new educational model based on algorithmic thinking, to address challenges in STEAM education, such as the integration of interdisciplinary knowledge and establishment of evaluation methods. Here, algorithmic thinking is defined as an extension of a key element of computational thinking, where an algorithm is redefined as "a sequence that transitions states of things and events" to develop it into a more general thinking method.

Introducing this concept into STEAM education is expected to provide a common foundation across disciplines, facilitating problem-solving in science and technology, structuring creative processes in the arts, and systematizing ethical judgment in the humanities. Through two practical examples in university basic education and art education, STEA²M's effectiveness is demonstrated as a versatile thinking method that transcends the sciences and humanities, promoting creative activities by integrating sensibility and logic and functioning as a foundation for interdisciplinary knowledge integration.

Particularly in the modern era, where coexistence with AI is necessary, this educational model, grounded in algorithmic thinking, has the potential to serve as a framework for cultivating human-specific creativity and logical thinking.

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The Uneven Distribution of "University Recentralization": Trends in Distribution of Admission Capacity in the Tokyo Metropolitan Area under the Shift in University Location Policies

TERADA Yuuki

This study aimed to examine the trends in the distribution of university locations in the Tokyo Metropolitan Area. For the analysis, a database of university and junior college enrollment capacities by municipality was constructed, covering data from 1955–2020 at five-year intervals. The following five key findings were obtained regarding the impact of university location policies in the Tokyo Metropolitan Area: (1) While enrollment capacity in Tokyo's 23 wards trended upwards until 1995, its proportion of the total metropolitan capacity has been declining since 1960; (2) increased capacity in restricted areas during the 1990s was influenced by temporary enrollment expansions; (3) after the deregulation of university location policies, suburban areas experienced declines in enrollment at varying times depending on their distance from Central Tokyo; (4) however, these declines were relatively small compared with the substantial increases in the 23 wards; and (5) a ward-level analysis revealed that some areas remain below peak capacity, indicating a patchy trend of recentralization. Additionally, enrollment growth in the 23 wards reflects two phases—one driven by capacity increases at existing campuses and another by the establishment of new campuses. These findings offer a nuanced perspective on university location dynamics in the Tokyo Metropolitan Area.

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Debates Over College Teaching Qualifications in Early-20th-Century USA: A Study Focused on NCA Accreditation Standards

YOSHIDA Shotaro

This study aimed to elucidate the discourse on college teaching qualifications in the early-20th-century United States by examining debates over college teaching qualifications in the accreditation standards of the North Central Association (NCA). Previous studies have identified discussions on preparations for college teaching from the 1930s-40s based on the concept of "teaching as well as research." However, the concept's relationship with the early development of accreditation remains unexplored.

During the period of higher education expansion, the study analyzed two phases – namely the "standards exploration period" until the mid-1920s and the "reconstruction period" until the mid-1930s. During the exploration period, the NCA established degree requirements while incorporating the "teaching as well as research" concept, which was maintained after the American Council on Education formulated national uniform standards. During the reconstruction period, amid criticism of accreditation, the limitations of quality assurance through degree requirements were recognized, which led to a greater emphasis on substantive teaching abilities.

The study's findings suggest that debates over faculty qualifications in accreditation standards, developed amid the coexistence of research universities and liberal arts colleges, provided opportunities to seek a balance between research and teaching. Thus, they laid a crucial foundation for subsequent discussions of faculty development.

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A Comprehensive View of Graduate School Laboratories from the Perspective of the Learning Environment: A Study Based on an Online Survey for Graduate Students

FUSHIKIDA Wakako

In Japan, university research laboratories have long supported specialized education as communities where faculty and students interactively create knowledge. However, as laboratory management is left to the discretion of the faculty, sharing the norms and values internalized in each laboratory requires more effort. This study considered graduate school laboratories, which embody the concept of "education through research," as a learning environment. It attempted to grasp the overall picture by breaking it down into its elements based on the following four aspects: space, artifacts, activities, and community.

An online survey was conducted at the end of 2023. Based on the responses of 223 graduate students, this study examined the commonalities and differences between four fields of study－namely multidisciplinary study, humanities and social sciences, science and technology, and biology. There were characteristics confirmed to be unique to the humanities and social sciences, to science and technology, and to biology in terms of spaces for graduate students, communication tools between faculty and graduate students, various activities in the laboratory, and the number of graduate students. This study's findings are expected to be widely shared and utilized by faculty and laboratory members to co-create ideal laboratories.

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The Presence of Higher Education in the Age of Climate Disasters: The Possibility of New Materialistic Educational Research in Korea

Seung-hyun CHOI

The purpose of this article is to identify and evaluate the development of the new materialism in recent educational research. This new materialism has been driven by the development of climate disasters and digital technologies. Research that uses semantic web technology and digital photography is also increasing in this new materialistic strand of educational research. This trend has led to retrospective examinations of the meaning and value of the agency of nonhumans who have been marginalized and excluded. However, the new materialism also faces philosophical and political criticism. Furthermore, the idea that people can freely change the arrangement they have with objects has been interpreted to mean that they can treat objects as they please according to their interests. Politically, this makes people turn a blind eye to humans as historical subjects and view matter and capitalist products as equally attractive. Ultimately, new materialism risks subordinating humans to matter. Nevertheless, new materialistic educational research is a resource for overcoming the separation between practical pedagogy and educational science in educational research by providing a language for the transition of modern education and leading us from the problem of facts to the problem of interest. This strand of research has taken on the task of determining how to update traditional educational research centered on reflective agency.

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Report Writing in High School Japanese Language Course "Logical Japanese"

ITO Nagako

The purpose of this study is to clarify how report writing is managed in Logical Japanese, a Japanese high school language course introduced in 2022.

In Logical Japanese, learning about writing may be broadly categorized as "learning through writing," which promotes a deeper understanding of reading comprehension, while "learning about writing" focuses on acquiring methodologies for writing texts. These aspects are generally distinguished in instructional materials, and report writing is positioned in the former category; however, the percentage of report writing is quite low.

In this course, materials related to report writing are limited to the collection, organization, and examination of information; setting of themes, and examination of written content. These learning activities are not necessarily associated with writing instructions and are frequently addressed in report writing as "learning about writing."

In the context of this course, one could consider report writing a limited learning activity related to writing.

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Formation of Research on Japanese Literature: Researchers at Higher Education Institutions and Their Work During the Pre-War Period

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This study examined the formation of research on Japanese literature across various universities. To examine the formation of academic knowledge through research in this field, it proposed a new methodology that integrates the results and approaches of general higher education and specialized field research. Considering the field of Japanese literature as a specific example, we discussed the methods through which researchers were trained and assigned to higher education institutions as well as the development of academic knowledge from Japanese literature and higher education general research.

We found that faculty, in addition to requiring experience in imperial university education, had to publish an article in a journal produced by their own university as a prerequisite for working at an imperial university. By contrast, no clear model existed for training faculty at private universities – unlike at imperial universities – and teachers came from diverse backgrounds.

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A Study on Faculty Recruitment in the Field of International Education and Exchange: Insights from Interviews with Faculty Members

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This paper examines the expectations for faculty recruitment and the challenges of personnel management in the field of International Education & Exchange. Interviews were conducted with university faculty members involved in hiring and organizational development to clarify the current state, potential, and challenges in the field.

The study makes two key findings. First, faculty members' roles in International Education & Exchange in Japan are becoming highly specialized across education, research, and practical expertise. Universities with administrative staff rotations often expect faculty members to have a wide range of advanced skills, including a doctoral degree.

Second, personnel decisions in the field are frequently influenced by fixed-term, grant-funded projects. However, evaluations tend to follow traditional faculty and graduate school systems, which makes it difficult for faculty to balance practical work and research. This poses challenges to organizational development, career growth, and the fostering of collegial relationships. Addressing these issues is essential to ensure the long-term sustainability and effectiveness of the field of International Education & Exchange. This study calls for strategies to more effectively support faculty and adapt systems to the unique demands of the area.

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