AI ETHICS

AI and the Future of Education

By Kan Suzuki, Professor, Graduate School of Public Policy, The University of Tokyo

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Hello, everybody. So my Name Is Kan Hiroshi Suzuki, a professor at the Graduate School of Public Policy, University of Tokyo, and also a professor of media and governance, at the Keio University. So today, I'd like to make a presentation about AI and the future of education. So, before I would like to make a presentation, I'd like to make a self-introduction. So, actually after I graduated the Tokyo University Law School, I entered the Ministry of International Trade and Industry (METI). So during METI days, I was in charge for the ICT policy after METI graduate. So I joined the Keio University as an associate professor. So other times on my major was information society. So after Keio University, so I moved to there on the diet member, or congressman. So, in 2001 I became the member of the house of cultures, upper house, also during my upper house days as a diet member, I have been appointed as a state minister of MEXT twice. So MEXT means the Ministry of Education, Science, Technology, Sports and Culture. After all diet members and counselors member days, I again, I come back to academia, now I'm teaching in Keio University, and University of Tokyo. And additionally, I have many hats. So one is the global board member of Teach for All. Teach for All is covering over 50 countries, focusing on the increasing of the level of education from grassroots power. And also, I'm doing advisor of bureau of education, the OECD, and especially I and my colleague have established the OECD Education 2030 project. And also, I used to be the chief policy officer to the MEXT so I have subbed for ministers. And I was in charge for the reform of national curriculum, and reform of the national university entrance examination. And also, I'm doing the headmaster at the Institute of Social Margins, and margins and all yeah, director Japan Football Association. And now I'm teaching in the several universities, for example, so I'm invited professor for Osaka University Medical School, and then to the Wakayama University, Fukui University, Chuo University in Osaka and also under supporting the Kanagawa Prefecture Governor. Kanagawa Prefecture is the second largest prefecture in Japan and next to Tokyo Metropolitan Government. And I have written several books, one is A Creative Learning. So the second one is World Class. World Class was written by the Andreas Schleicher, director general of OECD Education and Skill Bureau. So he's my friend is, so, that I have translated it to Japanese society. And also I and Fernando Ramos, Harvard University professor, wrote a book. So the title is an Audacious Education purposes. So, in this book, we wrote how governments transform the goals of education system.

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SoI have many experiments, to social innovation. So then, yeah, of course, my major is education field. So in education field, when I was a state Minister of Education, I reformed the structure of budgetary appropriations. And I'm the scholar who proposed the concept and plan over committee school campaign. So now, in Japan, 6 million people are supporting schools as school volunteers. And now, I have been very interested in enhancement of the rights to loan scholarship to all applicants- the free high school education, and also, as a chief policy officer of MEXT I was in charge of for the revising the course of study Introduce Active Learning, and the university entrance examination reform. And when I was the state minister, we Japan faced the very severe natural disaster - the Great East Japan earthquake. So, I was in charge for the revival from the Great East Japan Earthquake, and of creative revival of education. And so, my second major is medical policy. So, I have enacted the Cancer Control Act. And I also I resolved the health care crisis, and I increased the number of the doctors and I also I was in

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charge of all the monies went to the former University Hospital, and especially, so, my major is all supporting the medical innovation. So medical innovation, I made a five-year plan for the medical innovation and also I established the Cabinet Secretariat Promotion Office of Medical Innovation. And I have established AMED - Japan Agency for Medical Research and Development, and I enacted the law on products, including pharmaceutical, medical devices and act for the comprehensive acceleration of regenerative medicine and the act on the safety of regenerative medicine. So, during my experience to making the new Act, I have very unique experience to manage conflict between medical innovation and our risks. Yeah, that was very, very important experience for me, and also, I really understand the importance, the conflict and so, when we human beings introduced the new technology and the new innovative technology in the society. So, my major is a community NPO-management and the culture policy and sport management. So, I moved to the today's main topic, AI ethics and education. So, or as you know, the ITPE in 2019, they offered ethically aligned design of first edition.

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So the, concerning about the ethical and education the book, explaining, so we told we understand the ethical to go beyond moral constructs and include social fairness, environmental sustainability and our desire for self-determination and autonomous and the intelligent system, so, AIS for sustainable development, so ITPE sees sustainable development in the age of AI as ethical issue and points out that education is important for achieving this. So first inadequate education of future scientists and engineers, who will be responsible for society, in view of the enormous ethical and social problems associated with the development of technology. Second scientist, engineer, as well as our students of business and law, public policy, and the medicine must be prepared to view AIS as partners and internalized ethical doctrines. Third, pathway to access professional problems need to be created, not only for undergraduate and graduate students, but also for elementary, middle and high school students. So education systems worldwide, have to be reformed and transformed to fit the new demands of the information age. In view of the exchanging a mix of the skills, demand from the workforce, young people everywhere need to develop their capacity for creativity, human empathy, ethics, and the system's sense thinking, in order to work productively, alongside robots and AIS technologies. So in universities, innovation is needed to walk productively and ethically with the technology. Even in university education, students must be prepared for the risks and opportunities that the AIS law will bring, rather than aiming for a workforce suited to an industrial society that ended in the 20th century. So the ITPE is shown at this table, so, comparing skills and demand 2018 versus 2022. Yeah, so in 2022, analytical thinking and innovation and active learning and the learning strategies, creativity, originality, and the initial technology design and programming, and the critical thinking and analysis, complex problem solving, and the leadership and the social influence, emotional intelligence, with reasoning, problem solving, and ideal, ideation and the system analysis and evaluation. So these are 10 must must be emphasized in school education reform. Now, also, there are future society and global civic debate on the governing the rights and the artificial intelligence. So ITPE the future society and others are beginning to view the education, education of human resources to cope with the changing law and the labor caused by AI as ethical issue.

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So I myself, so I'm teaching in Keio University, so I'm teaching a class of a public philosophy. So amazingly, the number of students has rapidly increased, recently increased. So now 950 students are participating in my class of public philosophy. So, so many students, university students, have become interested in public philosophy. Yeah. And also I am teaching public philosophy not only at Keio University but also the Tokyo University Graduate School of Public Policy, and the Department of Public Health, and the Faculty of Pharmaceutical Science, and

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also at the Osaka University I'm teaching all public philosophy in the School of the Medicine, and at the Keio University Faculty of Nursing and the Medical care and there, when I teach public philosophy, so I always and Oh, so important that so we should teach the general public philosophy not only AI ethics, so yeah. And so actually, so I'm writing the high school textbook of a public philosophy. Yeah. So, oh. I'm always, I'm talking, so we human beinga, so will face era of a VUCA. So, all epoch maker changing world and the human history for the first time in 250 years. So, always I'm explaining and the key issues to think about the epoch-making. So, the one is, so, one of the very important concept is the singularity. So, there, Kurzweil, Doctor Kurzweil so all as you know, he explained in the mid-2014 artificial intelligence will surpass human intelligence, and the OECD and the World Economic Forum always in importance of the key concept of VUCA. So VUCA means of volatility, uncertainty, complexity and ambiguity. And so, as an advisor, and the bureau member of OECD, OECD, in education policy has emphasized the new competency. So, all like reconciling the tension and the dilemma in the era of VUCA due to the introduction of new technologies and the occurrence of a natural disaster. Many unpredictable conflicts occur under the unknown condition. So, that's why so, reconciling the tension and the dilemma, so will be the most important competency. So, after graduation from the modern era, which began with the industrial and the Civic Revolution, the first major turning point in the history of the world, humanity and the earth in 250 years is coming. We need epoch makers who can create a new era. So under this concept, the Japanese Government and the Japanese community, Japanese education community, so Japanese Universities and so, so we always are saying ... So, we are facing not only unexpected risks, but also unexpected opportunities. So yeah, so the key word again, singularity and VUCA and advances in science and technology like AI, IOE, robotics, regenerative medicine, so we will increase both social benefits and the risks and they'll also, yeah, globalization and the complexity diversity increasing the unexpected, this dilemma complex trade offs and conundrums, yeah, so the trends of the global history.

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So, we must educate human resources, who can face unexpectedness and the dilemmas and overcome a crisis situation and also, we must educate our human resources, who can muster AI under who can face problems, challenges and difficulties that cannot be solved by AI and also, we must educate human resources, who can initiate and carry out creative and cooperative activities. So the human main activity, so well, or transfer from the production to communication, collaboration, creation culture. Yeah, so and so under these concepts, education policy should pay attention to educate active learners. Active learner means a person who engages in independent, interactive and deep learning and entrepreneurship, and creative colleague worker, social orchestrator, social innovator. So will be educated by new education, so not cooperative routine labor. And so, if we try to educate social orchestrator and the creative social innovator and creative cooperative artworker, so the project are based on learning and the problem-based learning will become the main part of education. So, and the liberal arts education will again, become a very important, so I emphasize the meaning of history education. So I think, I think so, history is stories of our ancestors and philosophers who struggled in the midst of the dilemmas. So that's why we must learn the history. So, when we, when our generation, and when our new generation, my children, my history, my students, so we'll learn the history, so the way we can get that wisdom and the courage from our ancestors, philosophers stories and the ELSI is very important. ELSI means that ethical, legal, social issues and also, so, integration of social science is the humanity and the natural sciences, interdisciplinary learning and the transdisciplinary learning will be very important and of course, so education of digital literacy, will become the main important intelligence. And now, so or when I was a Steven minister, and, you know, the chief policy officer, so Minister of Education, Japanese Ministry of Education, established ministerial roundtable on the human resources, cultivation for society 5.0. At that time, Yoshimasa Hayashi was the Minister of minister of

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MEXT, and I, myself, the Minister, chief policy officer of MEXT. So all members included, yeah, various types of professionals, not only educator but also the artists and innovators. Yeah, and Michael Burden from Oxford University joined our discussion.

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So we discuss the strength of humanity. So, sensitivity and ethics to understand and make sense of the real world, the ability to deal with and adjust to the dilemma and the unexpected, and the ability to carry out the responsibility. So, this is the main, so one of the main measure of the strengths of humanity. So that's why so, we again, educate new generation of the strengths of humanity, and also now, again, we emphasize the importance of the ability to accurately interact with the text and information at, at the same time, human resources, who discovered the Create Quantum Leap knowledge that these are photos of the technological innovation and the volume creation and also human resources, who can connect the technology innovation with the social issues and the creative platforms and the who we must re-educate the human resources, who can maximize the use and development of AI and the data in the various of field. So all we emphasize the importance of the offering diverse opportunity and the place to realize that equally and individually optimized learning And theory and individually optimized learning and so, again the importance of trans-interdisciplinary studies, including social science and humanities and natural sciences. Yep. And now, next, I like to explain about the OECD discussion. So, OECD Education 2030 made the so-called Learning Compass. This is a learning compass. So, OECD education learning frameworks, so, the purpose is the 2030 well-being, individual well-being and the societal well-being, the purpose of education. Now, we emphasize the importance of the student agency, and co-agency with the peers and the teachers and parents and communities and student agency include the self-efficacy, motivation, self-motivation, identity, hope, purposefulness, and the growth mindset. So, interrelated constructs and also we emphasize that competency should include not only knowledge and skill, but also attitude and the values: attitude and the values will become the more important. And so, we fix the three main goals of education, new education, so, one is creating new value, second one is taking responsibility, third one is again also reconciling the tensions and the dilemmas. Yeah and so, we must reform, reorganize the whole education collective to support the the three competencies. In Japan, referring to the OECD discussion and the following the ministerial a roundtable we have reformed the national curriculum, so which will start from 2020.

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So through three stages including elementary, junior, high and high school, so most important concept is the active learning. And before, these reforms we already have a subject the so-called ethics, but at this time, we will introduce new subjects the so-called Cocio Cocio means of public philosophy and the public markets. Yeah. And also or we will introduce a new subject so, it's yeah, which a very in cooperation with a PBL in high school. So, the subject name, so, integrated inquiry, and science on the math inquiry: integrated inquiry means social science and natural science integration inquiry. So, in this PBL, the high school student will have many chances to think about the ethics and the technology and the innovation and also, will new subjects, so called integritated study of history. So, this subject, a new subject, is focusing on the modern and the contemporary period. So, especially including stories of the war and the technology, that science and technology have brought to the world, especially in modern era and integrated study of geography. At the same time, not only national curriculum reform but also though, we decided and we already have studied the university entrance examination reform. So not only focusing not only knowledge and skill, but also attitude and the value. So focusing on the, so public philosophy, how to manage the conflict and the tension and dilemma and so between new innovation introduction and our ethics. Yeah. So this is the our challenge now from Japan. So, please, share my challenge or Japan challenge and OECD

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challenge and and yeah, our university and our high school and such a grass roots initiative challenges. Yeah all thank you very much. So I'm very happy to share this information with you. And I'm looking forward to seeing you again and to have another chance to discuss about the future of AI in the education. Yeah, thank you very much all for joining or listening to my lecture.

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