Insights from Three 2024 Research Trips: Advancing AI in Education and Cross-Cultural Communication

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Abstract

In 2024, The authors participated in three major research trips exploring the intersection of artificial intelligence (AI) and education, with a particular focus on its influence on cross-cultural communication. These conferences and symposiums served as invaluable opportunities to engage with leading researchers, educators, and industry professionals, which fostered discussions on emerging AI-driven educational technologies, pedagogical strategies, and their implications for global learning environments. Through a combination of keynote lectures, panel discussions, and interactive workshops, we gained deeper insights into current trends, challenges, and innovations that are shaping AI's role in education. This report will provide an overview of each research trip, highlighting key presentations, notable discussions, and the most impactful ideas shared. Additionally, we will reflect on our personal experiences, discussing how these events have influenced our perspectives and academic pursuits. By summarizing significant takeaways and identifying future research directions, we hope to contribute to the broader discourse on AI's evolving role in education and its potential to enhance cross-cultural understanding.

Keywords: Artificial Intelligence in Education, Cross-Cultural Communication, Pedagogical Innovation, AI-Enhanced Learning, Global Collaboration in Academia

Introduction

As AI continues to play an increasingly prominent role in various industries, its influence on education is undeniable. The conferences we attended this year gave us invaluable exposure to how AI is being integrated into educational practices globally, offering unique insights into its potential to enhance both learning outcomes and the overall student experience. Each trip provided a rich environment for learning, reflecting the growing importance of AI in shaping the future of education. The presence of cutting-edge technology in these academic environments illuminated the many ways AI is set to redefine traditional teaching and learning paradigms, making education more efficient, engaging, and personalized.

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Trip 1: NIT-NUU Bilateral Academic Conference 2024 [1)]
Dates: July 14-15, 2024
Location: National United University, Miaoli, Taiwan
Attendees: Dr. Ken Ichikawa and Prof. Julien Sainte

Picture 1: Entrance to the venue

In July, we attended the 7th NIT-NUU Bilateral Academic Conference, a gathering focused on fostering international collaboration between academia in Taiwan and Japan. Together, we presented our research on the topic of "Using Generative AI in Conjunction with Cross-Cultural Communication Scenarios: A Case Study." Our session explored how AI could enhance communication in cross-cultural settings, offering a case study from our own work.

This event marked an important milestone in our academic journey, as it was our first time participating in a large-scale international conference. We were able to present our findings and also engage with scholars from diverse backgrounds, who shared their experiences with AI in educational contexts. The discussions provided us with fresh perspectives and helped us refine our own approach to integrating AI in educational environments. We also left the conference with a renewed sense of optimism about the potential for AI to facilitate cultural exchange, especially in global academic settings.

Personal Reflections:

This conference was our first time attending an international event of this scale, and we found the experience both enriching and inspiring. The diverse range of participants, from researchers to students, gave us a sense of the global conversation surrounding AI in education. We were particularly struck by the fact that both teachers and students were involved in presenting their research, which offered a refreshing perspective on the collaborative nature of academic inquiry. We reflected on how AI can bridge not only language barriers but also cultural differences in educational settings, making learning more accessible to a global audience.

We realized that AI tools could bridge language and cultural barriers, allowing students to engage more deeply in cross-cultural communication. Moreover, the integration of AI could significantly enhance the learning experience in classrooms where cultural diversity is a factor, making education more inclusive and relevant to a wider range of learners.

Detailed Summaries of Presentations:

- **Customizing AI Programs:** One of the key presentations that caught our attention was on customizing AI for educational purposes. The researchers demonstrated how AI could be fine-tuned to meet specific educational needs, such as adapting lesson plans based on student performance data. This approach highlighted the potential of AI to personalize the learning experience, something we believe can greatly enhance student engagement and retention. Customizing AI in this way could provide real-time feedback for both teachers and students, allowing the learning process to be much more dynamic and responsive to individual needs.
- **Detecting AI Usage in Academic Work:** Another presentation dealt with the ethics of AI in education, specifically focusing on how to detect if students were using AI tools to generate essays. This sparked a discussion on the importance of academic integrity in the age of generative AI. It was fascinating to hear about the various tactics and algorithms researchers were developing to identify AI-generated text, which made us reflect on the ethical implications of using AI in academic writing. While AI can undoubtedly enhance the quality of student work, it is essential to maintain a balance between utilizing technology and preserving academic honesty.
- **Creating Your Own AI Programs to Help Access Student Strengths and Weaknesses:** A particularly engaging presentation was about the development of AI programs that allow educators to assess students' strengths and weaknesses more effectively. The researcher demonstrated how custom-built AI tools could analyze student data from tests, assignments, and class activities, then provide tailored feedback that highlights areas for improvement. This not only empowers educators to support students more efficiently but also encourages a more individualized approach to teaching, which is especially important in diverse classrooms. This presentation left us thinking about the potential applications of such AI systems in our own teaching practices, particularly for students who may be struggling in specific areas. The possibility of AI acting as a diagnostic tool for student progress could redefine how educators approach lesson planning and intervention strategies.

Trip 2: International Symposium on Advances in Technology Education (ISATE)
Dates: September 24-27, 2024
Location: Singapore Polytechnic, Singapore
Attendees: Dr. Ken Ichikawa and Prof. Julien Sainte

Picture 2: Opening ceremony in progress

In September, we attended the International Symposium on Advances in Technology Education (ISATE). Although we did not give a presentation at this event, we found it to be an incredibly valuable experience. The symposium focused on how AI can be leveraged to improve teaching methods and make education more inclusive and efficient.

The opportunity to engage with educators from around the world was an eye-opening experience. We were able to witness the various ways in which AI is being implemented in education to support not only traditional academic subjects but also vocational and technical training programs. The event highlighted how technology could help bridge educational divides, allowing students from different backgrounds to access the same resources and opportunities for learning.

Personal Reflections:
One of the most thought-provoking aspects of ISATE was the diversity of topics presented. We had the opportunity to witness how AI is being used not just for academic purposes but also to tackle broader educational challenges, such as identifying at-risk students or making education more inclusive. We found ourselves reflecting on how these tools could help address inequalities in the classroom and create a more personalized learning experience. The emphasis on AI as a tool for both teaching and support made us think about how we could integrate AI into our own teaching practices to better meet the needs of our students.

For example, we became particularly interested in the idea of using AI to provide personalized learning paths for students with different levels of understanding, creating a more equitable educational experience. AI systems that can assess each student's progress and adapt the curriculum accordingly could be the key to improving engagement and retention, especially for students who may otherwise struggle in traditional settings. By tailoring learning experiences, AI can also help ensure that students from diverse educational backgrounds are given the tools to succeed in their own academic journeys.

Picture 3: Dr. Ichikawa attending the event

Detailed Summaries of Presentations:

- **Using AI to Identify At-Risk Students:** One presentation focused on using AI to predict which students might be struggling academically. By analyzing data such as attendance, participation, and previous grades, AI could identify at-risk students early, allowing educators to intervene proactively. This topic sparked our interest, as it aligns with our own research on student success and how technology can be used to enhance educational outcomes.
- **AI for Inclusivity in Education:** Another compelling presentation discussed how AI could be used to make education more inclusive. One example was the use of AI-driven speech recognition and translation tools to assist students who speak different languages or have disabilities. It was exciting to see how AI could help create an equitable learning environment where every student, regardless of background or ability, can succeed.
- **AI in ESL Classes with Different Grades:** A presentation that stood out discussed the use of AI in ESL classes, comparing schools where AI was integrated into lessons versus those where AI was not allowed. The researcher analyzed the impact of AI on different grade levels in ESL courses. In classes where AI tools like language translation apps, adaptive grammar exercises, and AI-powered feedback were permitted,

students showed more improvement in fluency and retention. In contrast, classes without such tools experienced slower progress, suggesting that AI can significantly enhance the learning experience in language acquisition, especially when tailored to individual student needs. This study reinforced our belief in the transformative power of AI in language education.

Trip 3: 2024 ETA International Symposium on English Language Teaching and Learning [2)]
Dates: November 8-9, 2024
Location: Chien Tan Overseas Youth Activity Center, Taipei, Taiwan
Attendees: Dr. Ken Ichikawa and Prof. Julien Sainte

Picture 4: General view of the venue

In November, we attended another conference where we presented our research on "Advancements in English Education for Japanese Science and Engineering Students: Insights and Developments." This conference was focused on the ongoing challenges and advancements in English education, particularly for non-native speakers in technical fields. Our presentation examined how English language proficiency is critical for Japanese science and engineering students, particularly in the context of global collaboration and the increasing need for communication in English in scientific research.

We had the opportunity to present our findings to an audience of international experts, which was both humbling and inspiring. The discussions that followed provided us with valuable feedback on our research and also introduced us to new ideas that we are eager to explore further. The focus on English education for specialized fields was particularly relevant to our work, and it deepened our understanding of how technology, particularly AI, can enhance the language learning process.

Personal Reflections:
This conference allowed us to reflect on the intersection of language education and technology. We realized that while language learning is critical, we also need to consider how technological tools can be integrated into language education to better serve the needs of specialized students, such as those in scientific and engineering fields. It was eye-opening to see how AI can support language learners in ways that traditional methods cannot, and it deepened our resolve to continue exploring how AI can improve English education for non-native speakers.

We were also reminded of the importance of understanding how technological tools can be used to bridge knowledge gaps and enhance learning in technical disciplines. As science and engineering fields increasingly demand global collaboration, the role of English language proficiency cannot be overstated. By focusing on enhancing communication skills, AI can enable students in technical fields to engage more effectively in international discussions and collaborations.

Detailed Summaries of Presentations:

- **AI and Language Learning:** A fascinating session explored the use of AI in language learning. The presenters showed how AI-powered apps and platforms can adapt to a learner’s pace and proficiency level, offering personalized vocabulary exercises, listening comprehension activities, and speaking practice. This

approach is highly relevant to our research, as it demonstrates how AI can cater to the specific needs of learners, particularly in specialized academic fields like science and engineering.

- **Specialized English for Science and Engineering:** Another presentation focused on the development of English resources tailored for students in technical fields. The researchers emphasized the importance of teaching specialized vocabulary and communication skills that go beyond general English proficiency. This session resonated with us, as it aligns with our own work on improving English education for Japanese students in scientific fields, and it provided valuable insights into how these students can be better supported through language instruction.
- **Enhancing Academic Writing Skills with AI:** One of the most impactful presentations was about using AI programs to improve academic writing skills and boost student motivation. The researchers showed how AI-driven writing assistants can help students structure their essays, improve grammar and vocabulary, and even suggest more effective ways to present arguments. This tool also provided motivational feedback, encouraging students to continue writing and improving their skills. This presentation resonated with us because it demonstrates how AI can not only enhance students' technical writing skills but also serve as a motivational tool to push students to become more engaged in the academic process.

Picture 5: The author presenting their work

Conclusion

Reflecting on these three research trips, we feel enriched by the diverse perspectives and innovative ideas shared at each event. Whether it was exploring the intersection of AI and cross-cultural communication at the NIT-NUU Conference, learning about the integration of AI into education at ISATE, or advancing our understanding of English education for Japanese science students, each trip provided valuable lessons and opportunities for collaboration. These experiences have deepened our appreciation for the transformative potential of AI in education and have inspired us to continue exploring how technology can enhance both teaching and learning across disciplines.

The feedback and insights we gathered will play a significant role in shaping our future research. In particular, we are eager to explore the ethical dimensions of AI in education, as the widespread use of AI raises important questions about privacy, academic integrity, and the potential for bias in AI models. As we continue to develop new AI-based tools for education, we will prioritize transparency and fairness to ensure that these tools serve all students equitably.

Looking ahead, we are excited to build on the foundations laid at these conferences. As we continue to collaborate with colleagues across the globe, we are confident that our research will contribute to the growing body of knowledge on AI in education and its potential to create more inclusive, engaging, and effective learning environments. These trips have been a vital part of our academic journey, and we look forward to continuing our exploration of how AI can shape the future of education.

Acknowledgments

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Notes

1) These joint presentations were summarized in the following paper. “Using Generative AI in Conjunction with Cross-Cultural Communication Scenarios: A Case Study”. See the reference list for more information.
2) These joint presentations were summarized in the following paper. “Advancements in English Education for Japanese Science and Engineering Students: Insights and Developments”. For more information, please refer to the reference list.

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