

行政院及所屬各機關出國報告

出國報告（出國類別：因公出國，海外實地學習課程）

**2024 Academic Visit to the Faculty of Educational
Sciences, University of Helsinki, Finland, and
Participation in the Multicultural Mathematics
Education Summer Camp**

出國報告書

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I Application Unit and the Applicant

Wen-Hua Chen, an Associate Professor in the Department of Mathematics and Information Education at the College of Science, National Taipei University of Education, possesses specialized expertise in bilingual mathematics, multicultural mathematics education, and Finnish education, notably in Phenomenon-based Learning. Chen's teaching portfolio encompasses *Teaching Materials and Methods of Bilingual Mathematics at the Elementary School Level*, *Multicultural Mathematics Education*, *Interdisciplinary Curriculum Design for Mathematics*, and *Practical Teaching of Elementary Mathematics in English*.

In the forthcoming field study program, Chen plans to lead students, who are pre-service mathematics teachers and have participated in the course *Practical Teaching of Elementary Mathematics in English*, to Finland. This program's primary aim is to allow students to immerse themselves in mathematics education within a different cultural context and acquire practical experience in the field. Through this initiative, students will engage with their Finnish counterparts, enhancing their comprehension of diverse cultures and educational frameworks.

Chen's extensive background in bilingual and multicultural mathematics education renders her the ideal leader for this field study program. With a deep-seated passion for *Teaching Materials and Methods of Bilingual Mathematics at the Elementary School Level*, *Multicultural Mathematics Education*, *Interdisciplinary Curriculum Design for Mathematics*, and *Practical Teaching of Elementary Mathematics in English*, Chen is dedicated to offering students a holistic understanding of mathematics education, thus equipping them for the globalized landscape.

II The Purpose of Academic and Cultural Exchanges

The Department of Mathematics Education at the University of Helsinki, Finland, has graciously extended an invitation to Associate Professor Wen-Hua Chen from the Department of Mathematics and Information Education at the National Taipei University of Education. This summer, she is invited to lead a contingent of Taiwanese pre-service mathematics teachers to Finland for a field study. The foremost aim of this overseas study program is to facilitate academic and cultural exchanges in mathematics education between Taiwan and Finland.

This program provides a platform for pre-service mathematics teachers from both countries to interact and share insights and experiences, enriching their perspectives and deepening their understanding of diverse cultural and educational frameworks. Furthermore, the program aims to expand the horizons of pre-service mathematics teachers and enhance their vision for multicultural mathematics education, encouraging their creativity and innovation for future education.

Another objective of this program is to bolster the exchange of mathematics education between the two nations, showcasing Taiwan's soft power to Finland. Our trainee teachers will demonstrate their departmental learning during the summer camp. They will teach elementary students mathematics in English while acting as cultural exchange ambassadors, presenting Chinese culture to all participants. In essence, trainee teachers can apply their theoretical knowledge in real-world settings, gaining invaluable firsthand experience in mathematics education.

Overall, this overseas study program offers a unique opportunity for pre-service mathematics teachers to participate in academic and cultural exchanges between Taiwan and Finland. It also aids in fostering international cooperation and understanding, allowing for an exchange of ideas and best practices in mathematics education between the two countries.

III The Content of Academic and Cultural Exchanges

Year 2024		Content	Location
Feb. 1st~	Preparing for academic exchanges in Finland: Mathematics lesson plans rich in Chinese cultural elements		
Aug. 13~15	Taoyuan → Helsinki, Finland & Settle down		
Aug. 16~17	Exploration of Finnish Cities and Living Environment		
18	Learn about the Finnish Library, Collection of Mathematics Teaching and Learning Resources (I)		Helsinki Central Library Oodi
19~21	Estonia: Tallinn		Tallinn
22	Visit professors and teacher trainees at the University of Helsinki (I)		Helsinki City Library
23	Learn about the Finnish Library, Collection of Mathematics Teaching and Learning Resources (II)		Helsinki University Main Library
24	Learn about Finnish History		The National Museum,
25	Cultural experience: Sauna, wild berry picking in Summer Cottage		Helsinki suburbs
26~27	Visit 8th-grade mathematics lesson		Comprehensive school
28~29	Visit professors and teacher trainees at the University of Helsinki (II)		University of Helsinki
30~Sep. 3	Nature and Monuments: Seurasaari, Suomenlinna, and church visiting		
Sep. 4	Helsinki → Taoyuan		

IV Reflections

In August 2024, I led nine students to the University of Helsinki, Finland, for around a three-week academic visit and multicultural exchange in mathematics education. As an associate professor specializing in mathematics education, this trip provided valuable academic insights for our students and gave me a deeper understanding of Finland's educational philosophy and cultural diversity.

Our academic exchanges covered various levels, including observing university and primary and secondary school mathematics lessons. During our time at the University of Helsinki, we had the opportunity to engage in in-depth discussions with several renowned professors, particularly Professor Eeva, Professor Jari, and Professor Markku. Their expertise in teacher and mathematics education immensely benefited us, offering new perspectives and inspirations for improving teaching strategies, especially in a multicultural education context.



During our visits to primary and secondary schools, we observed how the Finnish education system emphasizes student autonomy and the application of mathematics in everyday life. The students' active participation and critical

thinking skills impressed us, starkly contrasting the more traditional teaching methods in some Asia countries. This visit undoubtedly provided valuable insights into how we can introduce more interdisciplinary and multicultural mathematics education in Taiwan, which will be a focal point of our future efforts.



Beyond academic exchanges, we also had the opportunity to experience Finnish culture firsthand. Together, we visited Finland's renowned summer cottage and participated in the traditional mushroom-picking activities, a significant cultural experience during the Finnish summer. Our students not only learned about Finland's natural environment but also gained an understanding of how Finns live harmoniously with nature. Additionally, the local libraries we visited offered a wealth of educational materials and research resources, making our data collection on mathematics education more comprehensive.



This entire visit was highly rewarding for both the students and me in terms of both academic knowledge and cultural exchange. Again, I thank the university for its financial support, which made this academic visit possible.

V Suggestions

First, I sincerely thank the university for its generous financial support, which allowed our faculty and students to partake in an invaluable overseas learning experience. The opportunity to explore new educational landscapes, engage in cross-cultural exchanges, and deepen our understanding of international academic practices has been incredibly rewarding for all participants.

However, I must emphasize that despite the essential support provided, the rising global cost of living, particularly in Nordic countries like Finland, poses significant challenges for the long-term sustainability of such programs. For example, the grant for this academic trip was insufficient to cover even the full cost of airfare. This left both faculty and students bearing the financial burden for additional expenses like accommodations, meals, and local transportation. As the cost of living continues to rise, this disparity between funding and actual expenses is becoming a growing concern.

In countries like Finland, where the standard of living is significantly higher than in Taiwan, even basic needs such as food and lodging are considerably more expensive. The financial gap left by insufficient grants may discourage future participants from joining these programs. This is particularly concerning as international academic exchanges provide irreplaceable opportunities for students to gain global exposure, enrich their academic experience, and build cross-cultural understanding. Without sufficient financial backing, we risk limiting access to these life-changing experiences, particularly for students from less affluent backgrounds.

In addition, there is the potential for long-term consequences that could affect the university's ability to maintain strong international partnerships. If financial limitations hinder participation in exchange programs, the university may face challenges sustaining its global reputation and fostering international collaboration. This concerns the students and faculty who directly participate and the institution.

In conclusion, while we are deeply grateful for the financial support, the university must reassess the funding available for future international exchanges, especially in light of the rising global costs. If we are to ensure the success of these programs and maintain equitable access for all students, further financial

adjustments must be considered. Only then can we continue to offer our students and faculty the opportunities for international engagement vital to their academic and professional growth.