

# 04

## QUALITY EDUCATION



2020-2024  
Publications

174



2020-2024  
Percentage of all  
Taiwan Publications

4.0%



Course Units

4,846



Student Engagement  
with Units on SDG 4

92,858

# Research

## Advancing Digital Teaching Innovation in Higher Education

At the 2024 International Conference on Digital Learning and Open Education Forum (ELOE), the inter-university “Medical, Agriculture, Arts, and Engineering Alliance” was recognized for its strong foundation in digital pedagogy and course design. Among the highlights, Associate Professor Ken-Zen Chen (Institute of Education) collaborated with international scholar Barbara Oakley on the course “Learning How to Learn.” The project was selected as a successful case and presented a high-efficiency digital course design methodology that balances global reach and local needs. It received the “Teaching Case of the Year” award, and the related outcomes were published in the *International Journal of Educational Technology in Higher Education*.

## Strengthening Computational Thinking and Programming in Elementary Students

Associate Professor Tzu-Chi Yang from the Institute of Education investigated the use of graphic organizers (GOs) as instructional scaffolds to enhance elementary pupils’ computational thinking and programming learning. The study found that while all students recognized the importance of using computational thinking to solve problems, those taught with GO-based instruction significantly outperformed their peers on three indicators: computational thinking performance, programming skills, and flow experiences. The study was published in *Computers & Education*, and the work provides empirical evidence to inform elementary-level cross-disciplinary competencies, teacher professional development, and curriculum design.

## Social Impact

### **Co-Developing the Next Generation of Tech Talent with Local Government**

In partnership with the Taoyuan City Department of Education, the University hosted the “Make Friends with AI—Hands-on Boot Camp,” providing more than 100 high school students with a systematic pathway from AI fundamentals to practical implementation. The curriculum covered core technologies, including machine learning, deep learning, and natural language processing, paired with capstone projects and presentations to spark interest while strengthening model development and scenario-based application skills. Industry experts were invited to share real-world practices and discuss copyright issues surrounding generative AI, fostering responsible technological literacy, aligning learning with industry needs, and cultivating a globally competitive new generation of AI talent.

### **“Gong Academy”: A New Model for Later-Life Education**

Drawing on resources from eleven colleges, and launched with support from TSMC and the Hsinchu Science Park Industry–Academia Training Association, the University established the “Gong Academy,” named in reference to the historical gongshi (tribute examination). Integrated with the existing “University for Active Aging” and the “Silver Fitness Club,” it forms a “social-responsibility triad” for older adult education. Centered on lifelong learning, the program welcomes mid- to older-age learners back to campus for courses in brain health, personal finance, wellness, AI literacy and sharing, and language. It incorporates semiconductor process sensing and physician-supervised health technology assessments, and uses assignments and evaluations to build systematic learning records. Through cross-generational learning and industry–academia linkages, the program supports sustained engagement in health, learning, and social participation, promotes knowledge reuse and social contribution, and advances an inclusive, lifelong learning ecosystem.



# Education & Cultivation

## Integrating High School–University Resources to Enhance Learning Quality

The Affiliated Chu Pei Senior High School of National Yang Ming Chiao Tung University admitted its first class in the 2025 academic year, marking a new milestone for the university. The High School will serve as the university's focal point for high school education, integrating academic resources and facilities across its campuses. It will also offer curriculum planning consultations, comparable to high schools nationwide and those in Greater Hsinchu, to enhance learning outcomes and quality. The newly relocated High School will offer a "Bilingual Biomedical Experimental Class" and an "Electrical Engineering and Information Experimental Class" in the 2025 academic year. The university will provide access to the ewant open education platform and integrate ewant courses with APX Mathematics and Science exams to systematically guide students in their independent participation in AP international courses, making international education more accessible and affordable at the high school level.

## Expanding Self-Directed Learning through ewant Cross-University Courses

NYCU's ewant open education platform participated in the "2024 International Education Innovation Expo," showcasing quality education outcomes to education groups from 50 countries. The platform highlighted two flagship initiatives: the "Inter-University General Education Digital Course Program" and "SOS! Summer Online School," through which over 40,000 university students have successfully earned credits, breaking down inter-institutional barriers and expanding access to learning. In parallel, the "Digital Learning Enhancement Program for Senior High and Vocational Schools" now partners with nearly 200 high schools, encouraging students to pursue self-directed learning via digital resources to strengthen their subject foundations and explore cross-disciplinary interests. Through cross-campus collaboration and a diverse portfolio of courses, ewant not only enhances educational quality and a supportive learning environment, but also underscores NYCU's international impact on educational innovation and social responsibility.



## Stewardship

### Linking Orientation to Sustainability Education

During the 2024 Freshman Week, the University wove “Culture × SDGs” into campus tours and themed activities so that new students could familiarize themselves with learning spaces while grasping the University’s history and the core values of sustainability education. Through guided tours, interactive learning, and immersive experiences, campus cultural heritage and sustainability principles were translated into a learning journey that was tangible, participatory, and actionable, lowering barriers to entry and boosting engagement. This governance approach, co-led by university-level units, positions orientation as the first lesson in quality education, nurturing environmental responsibility and social care from the moment of matriculation, strengthening identification with and commitment to the SDGs, and embedding sustainability literacy systematically across formal and informal learning.



### 2024竹博覽會暨世界竹論壇

4/18(四)-4/20(六)

陽明校區：圖書館大廳  
光復校區：大禮堂、人社一館




● 網站連結 ● 台灣竹會FB



國立陽明交通大學  
NATIONAL YANG MING CHIAO TUNG UNIVERSITY

# 2024永續週

4/18(四) ——— 4/24(三)

#### 永續市集

4/20(六) 10:00-16:00

光復校區：浩然圖書館前廣場、工三前廣場及草坪



● 網購手帳 DIY預約  
● 體驗DIY預約

#### 永續校園無車日

4/22(一) 9:00-17:00

所有校區

少開車 多走路  
善用YouBike和Oloo





#### USR x SDGs 計畫成果發表會

4/23(二) 9:30-15:30

光復校區：電資大樓國際會議廳



● 議程及活動報名  
● 體驗活動集5點可兌換精美禮品

#### SDGs 成果海報展

4/18(四)-4/24(三)

陽明校區：守仁樓廣才廳前  
光復校區：綜合一館

現場打卡 分享上傳截圖 參加線上抽獎



● SDGs in NYCU

#### 氣候臨界影展

4/18(四)-19(五) 19:00-21:30

陽明校區：活動中心第一會議室

4/22(一)-23(二) 19:00-21:30

光復校區：人文電影館

#### 《狼女孩的氣候日記》-《氣候出逃》

歡迎同學參加影展徵文比賽，依主題各取三名




● 影展活動報名 ● 徵文活動報名

主辦單位：  國立陽明交通大學  
NATIONAL YANG MING CHIAO TUNG UNIVERSITY

執行單位：永續發展暨社會責任推動辦公室  
跨領域設計科學研究中心(TDIS)

協辦單位：學務處、總務處、校務大數據研究中心

## Sustainability Week Showcasing USR and SDG Practices

To deepen campus understanding and practice around climate change and sustainable development, NYCU held a Sustainability Week in April 2024, integrating education, research, and action to showcase concrete climate and sustainability initiatives. The program was coordinated with the 2024 Bamboo Expo & World Bamboo Forum, drawing 600+ international scholars, NYCU faculty and students, and local community members, and strengthening public-private collaboration and cross-sector dialogue. Highlights included a Sustainability Poster Exhibition and a USR x SDGs Showcase, which invited units across the University to share climate and environment-related projects, expand resource linkages on and off campus, and cultivate a community of practice with strong execution capacity. The Climate Tipping Point Film Festival pairs films with dialogue to deepen public understanding of climate risks and increase participation in sustainable action. A Sustainability Market promotes local agricultural products and eco-friendly goods, reinforcing support for sustainable agriculture and a low-carbon economy while advancing social resilience and climate adaptation.