



國立勤益科技大學
NCUT
NATIONAL CHIN-YI UNIVERSITY OF TECHNOLOGY

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[SDGs 17] Partnership for the Goals

[17.4.4] Does your university as a body measure the sustainability literacy of students?

National Chin-Yi University of Technology (NCUT) actively assesses and tracks the **sustainability literacy** of its students, aiming to cultivate a campus culture that emphasizes **environmental stewardship, social responsibility, and sustainable development awareness**. To gauge students' understanding and commitment to sustainability, NCUT employs various methods, including surveys, assessments, and coursework integration. This literacy assessment provides essential insights into students' knowledge of **sustainable practices and principles**.

1. Sustainability Literacy Assessments

NCUT conducts **annual surveys** and **literacy assessments** targeting students from diverse disciplines to measure their understanding of key sustainability concepts, such as **climate change, waste management, renewable energy, and social equity**.

- **Pre- and Post-Assessment Surveys:** Administered at the beginning and end of specific courses, these surveys measure changes in students' sustainability knowledge and awareness over time.
- **Comprehensive Literacy Exams:** Offered to students in environmental and engineering fields to evaluate their grasp of both theoretical and practical aspects of sustainable development.

2. Integration into Curriculum and Course Evaluations

Sustainability concepts are woven into the NCUT curriculum, particularly in **environmental science, engineering, and business courses**. Course evaluations assess students' understanding of **sustainable practices**, with particular focus on how they apply these principles in real-world contexts.

- **Capstone Projects and Case Studies:** Students complete projects related to **sustainable energy, waste reduction, or water conservation**, with final assessments evaluating both knowledge and application skills.
- **Cross-Disciplinary Courses:** To promote a holistic understanding, sustainability modules are included in various fields beyond environmental studies, enabling NCUT to assess literacy across disciplines.

3. Project-Based Learning and Community Initiatives

NCUT includes sustainability-focused projects and community service requirements, allowing students to **demonstrate their understanding of sustainability through real-world applications**.



- **Service Learning and Sustainability Campaigns:** These community engagement activities are evaluated to assess students' awareness and practical implementation of sustainable practices in settings outside the classroom.
- **Feedback from Community Partners:** External feedback helps NCUT measure the impact and effectiveness of students' sustainability efforts, offering a more comprehensive view of their literacy levels.

4. Longitudinal Tracking and Data Analysis

NCUT conducts **longitudinal studies** on sustainability literacy to observe trends over students' academic careers and evaluate the effectiveness of sustainability programs.

- **Alumni Surveys and Tracking:** Post-graduation surveys collect data on how students apply sustainability knowledge in their careers, providing insights into the long-term impact of NCUT's literacy programs.
- **Sustainability Literacy Progress Reports:** Analyzing data on student responses, project outcomes, and curriculum effectiveness helps NCUT continuously improve and refine its approach to teaching sustainability.

Through these methods, NCUT ensures that sustainability literacy is a core component of students' educational experience, equipping them with the knowledge and skills to contribute to a more sustainable and equitable world. The university's structured approach to measuring and enhancing sustainability literacy reinforces its commitment to both academic excellence and social responsibility.

Meeting the True Needs of Indigenous People! Professor Lin Zong-Hong's Decades-Long Commitment to Indigenous Communities

For over a decade, Tsung-Hung Lin, a professor in the Department of Computer Science at NCUT, has visited the Wangxiang tribe in Shinyi Township at least once a month. In fact, his service to indigenous communities' spans two to three decades, often spending his weekends in the tribe. In his early years, Lin assisted the Council of Indigenous Peoples in setting up information stations across the tribes, traveling extensively throughout Taiwan. After he began teaching at NCUT, he noticed students spending their time gaming in dorms rather than attending classes. This inspired him to take students to the tribes, aiming to use their technical skills to give back to society.

Professor Lin leads students in setting up computers and internet connections in remote tribal areas, introducing smart agriculture to improve farmers' livelihoods. Every month, he brings students to the Wangxiang tribe in Xinyi Township, Nantou County, for volunteer services, a practice he has continued uninterrupted for over a decade. His dedication has led other professors to jokingly ask if he's become an official member of the Bunun tribe.



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From Disaster Relief to Tribal Empowerment

“When I first started, many tribes didn’t have computers,” Lin recalls. Each time he ventured deep into the mountains, he found himself in remote areas without cell phone coverage, appreciating the beauty of nature yet feeling deeply for the difficulties tribal people faced in communication. In the past, poor road conditions would often isolate tribes, especially during rainstorms that caused landslides and debris flows. Initially focusing on disaster relief, Lin and his students began setting up computers and internet connections, envisioning that in times of natural disasters, tribes could reach out for help through the internet.

Lin remembers that some tribes initially had no computers at all, while others only had a “pile of seats.” “Back then, it was trendy to donate second-hand computers to remote areas, so a large number of old computers flooded in. Many broke down within a few years, with mainframes left in classrooms as seats for young children.” Witnessing these challenges, he decided to lead his students in understanding the actual needs of the community. They started by assembling and repairing computers, setting up modems, and installing internet cables. Once the networks were in place, university students would teach children how to use them for learning.

Smart Agriculture Revolutionizes Farming, Boosting Harvests

Thanks to Lin and his students’ support, the quality of life in these once-isolated tribes has greatly improved. Now, tribespeople can easily access computers and enjoy reliable internet connections. Children missing their parents working far away can connect through video calls, reducing the urge to leave home in search of them. Monthly check-in visits also provide crucial support for vulnerable families.

Lin recalls an instance when, during an event, a child avoided touching his lunchbox, choosing to play instead. Upon learning the situation, they discovered that the child wanted to save the lunch for his sick grandfather but felt too embarrassed to say so. Lin immediately prepared extra meals for the child to take home.

Professor Lin values hands-on experience and lifelong learning. His students teach indigenous children about computers, 3D printing, and making robotic cars. Before teaching, students must fully understand the concepts themselves. Having a chance to apply what they learn in real-life situations boosts students’ interest and motivates them to study harder for better outcomes.

In addition, many tribal farmers grow various fruits and vegetables, but in the past, poor harvests often occurred due to root rot in crops like tomatoes. Lin and his students installed IoT sensors to monitor temperature and humidity, measuring soil moisture saturation and greenhouse temperatures. Students learned to transmit sensor data back to a central system, resulting in real-time data insights that help farmers with precise irrigation. The new elevated greenhouses reduced pests and pesticide

pollution, while automated smart agriculture devices extended the harvest period and doubled crop yields, significantly improving farmers' livelihoods. The tribes are extremely grateful.

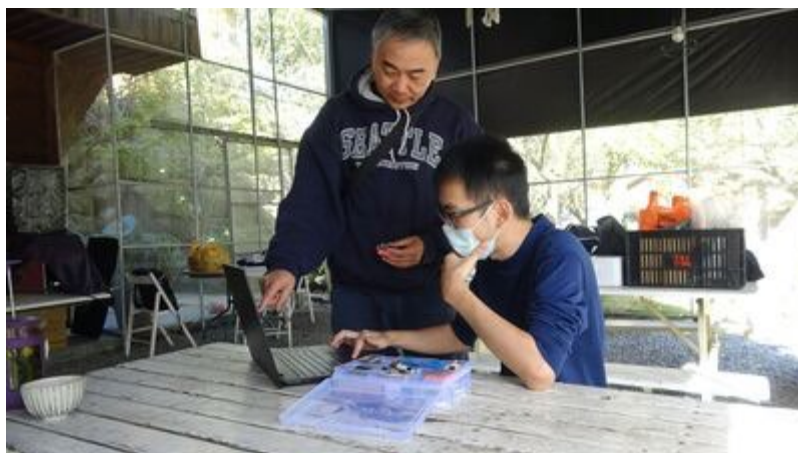
Learning, Not Just Serving

People often think that going to remote areas is about offering help, but Lin tells his students, "Understand their needs first, and ask them for guidance." His approach is to "learn through service, and serve through learning."

He believes students should first ask what kind of help is needed and provide genuine assistance, rather than blindly offering resources that may go unused. While visiting the tribes, students also learn about hunting, trap-making, pizza making, enzyme production, and brewing plums. They use local materials to build barbecue grills, learn to distinguish between male and female jelly fig trees, and carve wood to make spinning tops. During Bunun festivals, tops are whipped with vines as a symbol of abundance and good luck, with the tops staying upright longer signifying greater blessings. Since students lack the vines, they creatively use slippers for this joyful tradition, creating cherished memories filled with laughter.

"Sometimes, this work requires a certain spirit," Lin reflects. While some initially doubted him, he has persisted for decades, embodying the spirit of lifelong learning and bringing groups of students into the tribes. There, they realize that "helping others is helping themselves." Lin notes that while many people come to help, few stay long enough to make a lasting impact, with many being brief visitors. Observing fleeting charitable gestures that don't last, Lin believes it's essential to leave behind deeply rooted skills in remote areas. That way, even if he can't return one day, the tribespeople will still know how to repair computers and remain self-sufficient.

Bringing technical knowledge to indigenous communities while equipping students with lifelong skills, Tsung-Hung Lin creates a cycle of good, benefiting both students and the tribes. With knowledge as a foundation, he transforms education and offers a brighter future for the tribes.



"Visit Taiping-Community Colleges" activity--Explore the beauty of Taiping (combined with NCUT's USR program)

The Taiping District Social Building Center organized the Taiping District "Community College Activity" to integrate the natural ecological resources of the district, use the fertile land as a classroom, learn from nature, and conduct industrial exchanges between urban and rural areas.

Combining local cultural buildings, **NCUT's USR program**, and connecting local cultural and historical workers in the community, the goal is to create a place. The community college adopts the mode of deliberation and democratic operation, trains ecological tour guides, proposes a creative eco-tourism plan for Taiping District's micro-travel itinerary planning and design, and nearly 40 people explore the beauty of Taiping together.

Taiping community has found many characteristic resources in recent years. Based on the concept that the community is a classroom, it will integrate the surrounding natural and cultural tourism landscapes, agricultural and special industries, ecological experience, cultural buildings, folk beliefs, local festivals and other resources to explore the characteristics of the tour and development.

The "Community Landscape College Activities", brainstorming through group discussions, inspired several creative small travel plans, and through online voting, People in Taiping District felt a sense of participation. They hope to attract tourists who are interested in learning about Taiping's people, culture, real estate, production and scenery, so as to develop the cultural tourism industry and build a Taiping micro-travel tourism brand.



媒體報導-滿足族人真正的需要! 林宗宏數十年深耕部落不停歇 (本校資工系教授)

稿源：2024-10-29/翻轉教育

十幾年來，林宗宏每個月至少進望鄉部落一次。事實上，他投身原鄉服務已長達二、三十年，每逢假日幾乎都在部落裡度過。早年，林宗宏協助原住民族委員會到部落建置資訊站，時常全臺灣跑透透，到勤益科大任教以後，看見學生窩在寢室裡打電動，也沒有去上課，他便萌生帶學生去部落的想法，希望以專業能力回饋社會。

到原鄉部落架設電腦與網路，導入智慧農業，改善農民生計，勤益科技大學林宗宏教授每個月帶著學生到南投縣信義鄉望鄉部落進行公益服務，十幾年來沒有間斷，對於部落發展投入之深，連校內其他教授都開玩笑說：「你是不是已經入籍布農族？」

十幾年來，林宗宏每個月至少進望鄉部落一次。事實上，他投身原鄉服務已長達二、三十年，每逢假日幾乎都在部落裡度過。早年，林宗宏協助原住民族委員會到部落建置資訊站，時常全臺灣跑透透，到勤益科大任教以後，看見學生窩在寢室裡打電動，也沒有去上課，他便萌生帶學生去部落的想法，希望以專業能力回饋社會。

從防災救難到部落深耕

「一開始很多部落是沒有電腦的。」林宗宏每次進到深山，站在手機不通的部落裡，心裡一面想著，能夠暫時遠離塵囂，享受大自然是多麼美好，一方面又心疼部落族人通訊不易的處境。尤其，早年很多地方道路路況不佳，一下雨就坍方、土石流，令部落成為孤島，林宗宏從協助部落防災的角度出發，毅然決然與學生捲起袖子，開始架設電腦及網路，想說日後萬一發生天災，部落仍可透過網路對外求援。

林宗宏還記得剛到部落時，有的部落裡一臺電腦也沒有，有的部落則是空有一堆「座椅」。

「早年流行捐二手電腦到偏鄉，大量舊電腦湧入，這些電腦沒幾年就壞了，主機只好堆放在教室裡，成為小學生的座椅。」看見這些困境，他決定先帶領學生瞭解族人需求，再從電腦組裝、維修、架設數據機、拉網路線開始，等到網路都佈建好了，再由大學生教導小朋友使用學習。

智慧農業改變種植，蔬果產量大豐收

原本孤立的部落在林宗宏師生的協助下，生活品質有了很大的改善。族人現在很容易可取得電腦，也有便利的網路連線可以使用。小朋友思念在外工作的雙親，可以透過視訊與父母開心聊天，不會再離家出走，吵著要去找媽媽。每個月到部落的關懷訪視，也幫助了弱勢的家庭。

林宗宏還記得，有一次辦活動，中午提供小朋友便當，有位小朋友卻一口都不碰，一直在旁邊玩耍。深入瞭解後才發現，與小朋友相依為命的爺爺生病了，「他想把便當留給爺爺，卻難以啟齒，只好在旁邊玩耍裝忙。」得知以後，林宗宏立刻準備更多的便當，讓孩子帶回去與爺爺共享。

林宗宏表示，他重視的是學生的動手實作與永續學習。學生教導原民小朋友學習電腦、玩 3D 列印與製作自走車機器人，而在教導之前，自己要先摸透原理，才有辦法教給小朋友。也因為有機會在部落印證實務，學生們的學習興趣提高，一有空就會埋頭研究，讓下次表現更好。

此外，部落的農民平時務農，種植許多蔬果，以前遇到番茄爛根，收成不好，林宗宏便與學生運用物聯網感測技術，替農民裝設溫濕度感測器，測量土壤含水飽和度及溫網室室溫，讓學生學習如何將感測數據回傳主機，最後成功建立現場即時可視的數據盒，要澆多少水，農民一目了然。另外興建的溫網室以離地方式種植，大幅減少病蟲害及農藥的污染。而在導入自動化的智慧農業感測裝置以後，農民的蔬果採收期變長了，產量也增加了一倍，大幅改善農民的生計，族人都非常感恩。

我們是來學習的，不是來服務的

人們總是認為到偏鄉就是去做服務，林宗宏卻跟學生說：「要先瞭解對方的需求，應該先跟對方請教。」也就是所謂的「在服務中學習，在學習中服務。」

他認為，學生要先請教對方需要哪些協助，給予他們真正需要的，而不是盲目投入造成資源浪費。學生到部落裡，也趁機向部落族人學習狩獵、做陷阱、自己動手做披薩、做酵素、釀梅子，以當地的素材做出烤肉架，學會辨認愛玉樹的公母，甚至動手削木頭做陀螺。布農族節慶會用樹藤鞭打陀螺，陀螺站越久，表示今年越豐收、越幸運。學生沒有樹藤，便改用藍白拖「打」陀螺，過程充滿歡笑，學生也留下滿滿回憶。



「有時候，做這種事情憑得就是一股傻勁。」以前人們不看好林宗宏，但他堅持數十年不輟，秉持著永續學習的理念，帶著一批批學生走進部落，體悟「幫助別人，就是在幫助自己」的真諦。他也感嘆，「到部落幫忙的人很多，但是深耕的人很少，大部分是一些過客。」以前看過許多煙花式的愛心湧入，卻難以持續，讓他更體認到，要把技術深耕留在部落或偏鄉，萬一有一天不能再到部落了，族人也能自己維修電腦、自給自足。

把科技知識帶進原鄉，並讓學生學會終生受用的知識與技能，林宗宏啟動善的循環，讓學生與部落雙邊受惠，以知識為後盾，翻轉教育，也給了部落更好的未來。

網站連結：[滿足族人真正的需要！林宗宏數十年深耕部落不停歇](#)