



NATIONAL TAIWAN NORMAL UNIVERSITY

# Featured Research Newsletter

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ISSUE 08 | SUMMER 2025



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NATIONAL TAIWAN NORMAL UNIVERSITY

# ISSUE 8

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# Feature News

## CLTC Introduction

### Chinese Language and Technology Center (CLTC): Merging Humanities and Technology to Transform Language Education

At National Taiwan Normal University (NTNU), the Chinese Language and Technology Center (CLTC) is redefining Chinese language education by integrating the depth of the humanities with the power of advanced technology. Under the leadership of Chair Professor Yao-Ting Sung (Executive Director) and Associate Professor Jun-Ren Lee (Director), CLTC stands at the forefront of interdisciplinary innovation—bridging language acquisition, cultural studies, and artificial intelligence to foster a human-centered approach to educational technology.

#### CLTC's Four Core Research Areas

CLTC unites specialists from linguistics, psychology, education, cultural studies, and information engineering to conduct research across four key domains:

- **Language Acquisition** – Explores cognitive and developmental foundations of Chinese language learning.
- **Core Language Technology** – Advances natural language processing (NLP), big data analysis, and AR/VR tools for digital learning enhancement.
- **Teaching & Assessment** – Develops AI-driven learning platforms, innovative teaching materials, and adaptive evaluation systems.
- **Cultural Education** – Promotes Taiwan Studies, Oceanic Sinology, and digital culture education to foster global cultural engagement.

Beyond academic research, CLTC supports underserved communities, boosts Taiwan's global visibility, and contributes to the future of the Chinese language industry.

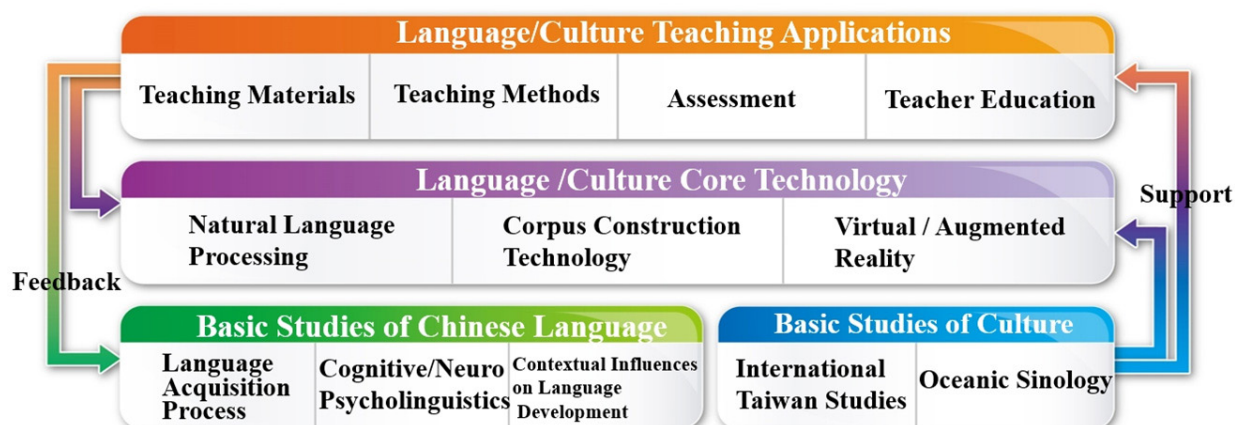


Figure 1. Cross-Disciplinary integration of CLTC's four research pillars.

### Academic Excellence at a Glance (2020-2024)

From 2020 to 2024, CLTC demonstrated outstanding academic productivity and impact, publishing 250 journal articles in top-tier indexes such as SSCI, SCI, A&HCI, THCI, TSSCI, and SCOPUS. The Center not only maintained a high publication volume but also significantly exceeded global citation benchmarks.

**Key Highlights:**

- **High Citation Impact – FWCI Consistently Above Global Average**  
CLTC achieved a consistently high Field-Weighted Citation Impact (FWCI), averaging above 1.65 each year and reaching a peak of 2.03 in 2023.
- **Top-Tier Journal Visibility**  
A strong percentage of publications appeared in the top 10% most-cited journals and the top 1% of highest-ranked journals, reflecting the Center’s global academic recognition.

*Table 1: Academic Performance Overview*

Year	Publications	FWCI	% in Top 10% Most-Cited Journals	% in Top 1% Journals
2020	52	1.74	15.3%	6.7%
2021	48	1.65	13.7%	17.5%
2022	48	1.85	12.6%	12.7%
2023	50	2.03	29.7%	10.3%
2024	52	1.93	15.3%	9.7%

*\* FWCI is a benchmark metric by Elsevier; a value of 1.0 represents the global average in the field.*

### Shaping the Future of Chinese Language Learning

CLTC continues to lead the transformation of Chinese language education through:

- Global leadership in Chinese language acquisition and teaching research.
- Development of AI-powered assessment tools and international learning standards.
- Creation of world-class digital platforms for engaging language education.
- Integration of AI, AR, and VR for immersive learning and assessment.
- Positioning Taiwan as a global hub for linguistic and cultural research.

### Vision for Global Impact

CLTC is committed to expanding its research and innovation footprint—strengthening Taiwan’s role in global education, cultural preservation, and AI-driven learning. Through interdisciplinary collaboration and a forward-looking mission, CLTC remains a key force in shaping the future of Chinese language learning.

► Learn more about CLTC: <https://cltc.ntnu.edu.tw/about/en/3>

## Cover Story

# Dr. Jia-Fei Hong: Bridging Corpus Linguistics and Digital Innovation in Teaching Chinese as a Second Language

Dr. Jia-Fei Hong, Associate Dean of the College of International Studies and Social Sciences and Chair of the Department of Chinese as a Second Language at National Taiwan Normal University (NTNU), is a prominent scholar at the intersection of linguistic research and digital pedagogy. In recognition of her early academic excellence, she received the Best Ph.D. Dissertation Award from the Linguistic Society of Taiwan in 2010.



Her research encompasses Chinese lexical semantics, corpus linguistics, and Chinese grammar, with an increasing emphasis on integrating technology into language instruction. Dr. Hong is known for her leadership in developing adaptive, learner-centered platforms that have transformed the way Chinese as a Second Language (CSL) is taught and assessed.

### Research, Publications, and Global Influence

Dr. Hong has authored and edited several landmark publications, including two books with Springer:

- Teaching Chinese Language in the International School Context
- Verb Sense Discovery in Mandarin Chinese: A Corpus-Based Knowledge-Intensive Approach

Her Chinese-language edited volume, *Teaching Chinese Language in the International Schools*, further explores practical strategies and innovations in CSL teaching.

To date, she has published 35 journal articles, 13 book chapters, and presented over 70 conference papers. Her work has made significant contributions in the fields of corpus-based semantics, reading pedagogy, language assessment, and Chinese grammar development. She actively serves on editorial boards including the *Journal of Chinese Language Teaching* and *Journal of Technology and Chinese Language Teaching*, and is a board member of both the **Taiwan Linguistics Society** and the **Taiwan Chinese Language Teaching Society**.

### Digital Innovation in Action: COOL Chinese & SmartReading

COOL Chinese (Competence-Oriented Omniform Learning): A comprehensive e-learning platform supporting CSL learners across listening, speaking, reading, and writing. It integrates tools such as:

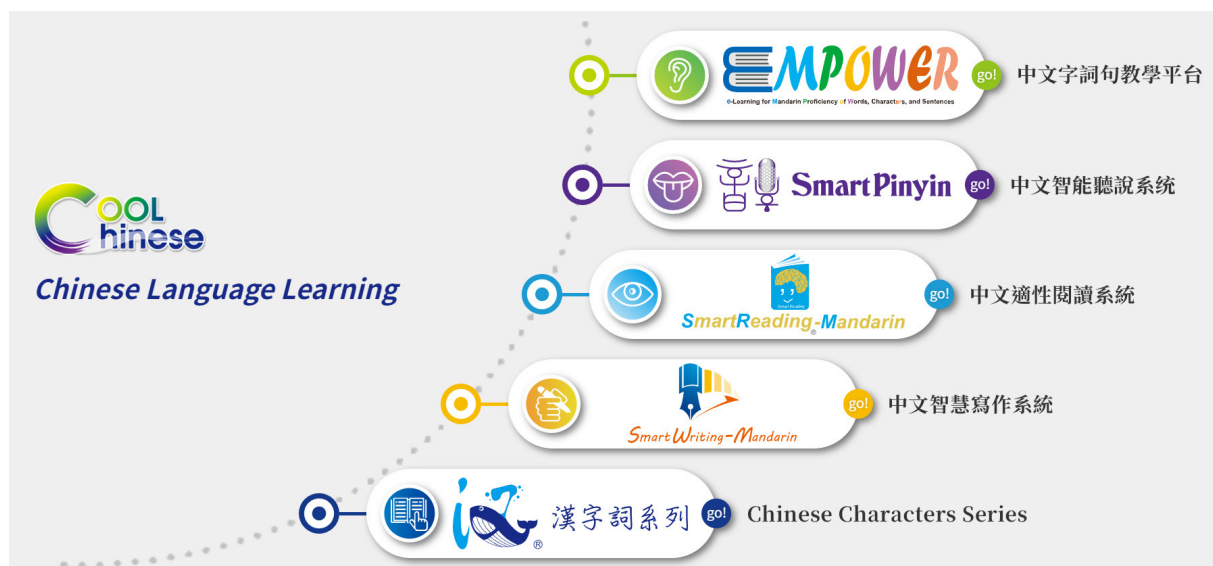


Figure 2: COOL Chinese Digital Learning Platform Interface.

- **eMPOWER:** A digital platform offering structured vocabulary, character, and sentence-level practice with personalized exercises.
- **SmartPinyin:** A pronunciation tool using speech recognition to give instant, detailed feedback and track learner progress.
- **SmartReading-Mandarin (SR-M):** An adaptive reading system that matches e-books with learners' reading levels, complete with diagnosis tools and comprehension challenges.
- **SmartWriting-Mandarin (SW-M):** A writing platform that automatically evaluates essays with feedback aligned to international standards (ACTFL, CEFR, HSK), helping students refine their skills.

**SmartReading**, another flagship initiative, focuses on enhancing reading through AI-driven diagnostics and personalized recommendations. Its key features include:

- **DACC (Diagnostic Assessment of Chinese Competence):** Provides detailed, level-specific reports on learners' reading ability based on five key dimensions.
- **Booklist Recommendation:** Offers curated e-book suggestions matched to learners' proficiency and interests.
- **Reading Plan:** Encourages self-regulated learning by supporting goal-setting, comprehension monitoring, and progress tracking.



## Advancing Chinese Language Education Through Research and Innovation

Dr. Hong's work exemplifies the integration of rigorous linguistic research with innovative educational technology. Her contributions not only advance academic knowledge but also translate into practical, scalable tools that are shaping the future of Chinese language learning around the world.

Through visionary leadership and a commitment to learner-centered design, Dr. Hong continues to redefine best practices in the teaching of Chinese as a second language in the digital age.

# Additional News and Highlights

## Research News

### Quantifying the Unseen:

## Dr. Jia-Fei Hong Develops Sentence Difficulty Index for Chinese Language Learning

Dr. Jia-Fei Hong, Associate Dean of the College of International Studies and Social Sciences and Chair of the Department of Chinese as a Second Language at National Taiwan Normal University, has introduced a groundbreaking tool to assess sentence difficulty in Chinese—a crucial yet often overlooked element in language learning.

Published in *Forum for Linguistic Studies*, Dr. Hong's research addresses a long-standing challenge: how to scientifically measure the complexity of individual sentences in Chinese. While sentence difficulty is fundamental to reading comprehension and language acquisition, previous efforts to define and measure it lacked consistency and practical value.

► Read the full paper here: <https://doi.org/10.30564/fls.v6i4.6737>



### A Data-Driven Framework

Drawing on resources like the Digital Platform for Chinese Grammar, 8000 Chinese Words database, and CRIE 3.0, the research team built a comprehensive system to evaluate sentence complexity. They cross-referenced their findings with standards such as the Chinese Proficiency Grading Standards and the HSK, ensuring broad relevance for international learners.

Their approach includes comparative analysis of native and learner corpora, machine learning validation, and expert review. A novel formula—Grammar Level  $\times$  Point Distribution Ratio—was introduced to compute sentence difficulty scores. To demonstrate how the Sentence Difficulty Index works in practice, Dr. Hong's team analyzed sample sentences using their formula. The table 2 below shows a ranking based on calculated difficulty scores:



Table 2: Example of Sentence Difficulty Calculation

Sentence	Score	Ranking
Ta e si(3) le, ba(4) zhuo shang de shi wu dou(1) chi wan(2) le. (She was starving and ate all the food on the table.) (3*18.90%+4*14.09%+1*25.09%+2*19.59%)	1.77	5
Yin wei(2) ta e le(2) san tian, suo yi ba(4) zhuo shang de shi wu chi wan(2) le. (Because she hadn't eaten for three days, she ate all the food on the table.)	1.74	4
Ta tai(1) e le, ba(4) zhuo shang de shi wu dou(1) chi le hai shi(4) e. (She was so hungry that she ate all the food on the table and was still hungry.)	1.63	2
Ta ji shi(5) chi wan(2) le(1) bing xiang li suo you de shi wu, ye ke yi(2) ji xu chi. (Even if she ate all the food in the refrigerator, she could continue to eat.)	1.72	3
Ta jiu suan(6) chi wan(2) le(1) bing xiang li suo you de shi wu, ye bu(1) jue de bao. (Even if she ate all the food in the refrigerator, she wouldn't feel full.)	1.14	1

(Note: Score calculated by grammar level × proportional weight of each grammatical element.)

## From Concept to Application

This new Sentence Difficulty Index enables educators and developers to visualize and quantify what was once intuitive. It transforms sentence complexity into measurable data, offering practical insights for:

- Tailoring teaching materials to different proficiency levels
- Enhancing adaptive learning platforms
- Providing objective benchmarks for learner assessment

## A New Chapter in Chinese Language Education

Dr. Hong's work not only advances the field of readability research but also provides powerful tools for educators worldwide. By making the abstract measurable, this study opens new possibilities for personalized, data-informed Chinese language instruction.



## Research News

# From Lab to Tabletop: NTNU CKIS Team Launches Innovative Chinese Character Learning Game

Blending cognitive science, Chinese language pedagogy, and playful design, the Chinese Key-Image Strategy (CKIS) Team at National Taiwan Normal University (NTNU) has developed an educational board game, *Playing Chinese Characters with Key-Images*. Unveiled at the 2025 Taipei International Book Exhibition by Professor Li-Yun Chang, the game introduces a fresh, research-based approach to Chinese character learning—especially for beginners.



## Game-Based Learning Meets Cognitive Research

Led by Chair Professor Hsueh-Chih Chen, Professors Zhen-Xing Lin and Li-Yun Chang, the CKIS team has been conducting cross-disciplinary research since 2015, supported by NTNU's Chinese Language and Technology Center (CLTC). Their work spans publications, apps, teaching aids, and learning materials designed to make Chinese characters more accessible.

The new board game features **78 key radicals and high-frequency characters**, each illustrated with "**key-images**"—visual mnemonics that connect character forms and meanings. With multiple game modes, learners can build recognition, recall, and confidence through active, collaborative play.

## From Research to Real-World Impact

The CKIS team's work is guided by the SUCCESS (Sequence, Utility, Correspondence, Creativity, Explicitness, Significance, and System) framework developed by Professor Chen, ensuring research translates into practical outcomes. Their achievements include:

- Peer-reviewed SSCI/TSSCI journal articles
- Widely used textbooks and apps
- International workshops on character education
- A picture book series *Wo Hui Di Zi Gui* blending character learning with values education

## Empowering Learners and Shaping the Future

By transforming character learning into a playful, visual experience, NTNU empowers diverse learners and sets a new standard in Chinese language pedagogy. As CLTC Executive Director Yao-Ting Sung states, the goal is not just to teach characters—but to bridge cultures and generations through innovation.



Figure 3: “Playing Chinese Characters with Key-Images” launches at the Taipei Book International Exhibition.

► Learn more: [CKIS Official Website](#)

For partnerships or inquiries: [chinesekeyimage@gmail.com](mailto:chinesekeyimage@gmail.com)

## Engagement News

# Love and Deep Listening: The Path to Inner Self

## SEED Center Hosts Transformative Lecture

### on Mindfulness and Well-Being

In an age marked by constant stimulation and rising stress levels, the quest for inner peace has become more vital than ever. Responding to this growing need, the Social Emotional Education and Development Center (SEED) at National Taiwan Normal University (NTNU), in collaboration with the Plum Village International Mindfulness Practice Center, hosted an inspiring public lecture titled “Love and Deep Listening: The Path to Inner Self” on March 15, 2025.

The event featured Dharma Teacher Sister Tuệ Nghiêm from Plum Village, France, along with three esteemed Dharma Teachers, who shared meaningful teachings and practical insights on mindfulness and emotional well-being. Together, they guided participants on a journey toward deeper presence, focus, and inner wisdom.

Sister Tuệ Nghiêm emphasized that “The foundation of loving others is loving oneself,” highlighting how mindfulness begins with understanding—an essential component of emotional healing and growth. Drawing from Eastern wisdom traditions, she illustrated how awareness of small, often-overlooked experiences in daily life can lead to profound self-knowledge and clarity.

A key highlight of the session was the guided practice of sitting and walking meditation, offering participants first-hand

experience of how mindfulness can be integrated into daily routines. These practices offered simple yet powerful tools for managing stress, nurturing emotional resilience, and deepening connections with others.

Through this event, the NTNU SEED Center reaffirmed its commitment to advancing social-emotional learning by blending theory with lived experience. By cultivating emotional intelligence and mindfulness in both academic and community settings, the Center aims to empower individuals to lead balanced, compassionate lives.

This lecture represents another milestone in SEED’s ongoing mission to promote holistic education and well-being, contributing to the development of a more mindful and caring society.

► For more details, visit: <https://pr.ntnu.edu.tw/ntnuneews/index.php?mode=data&id=23289>



Figure 4: Dharma Teacher Sister Tuệ Nghiêm guiding faculty and students in exploring inner self.

## Upcoming Events

### 2025 National Conference on Linguistics (NCL) at NTNU



The National Conference on Linguistics (NCL) will be held on October 25-26, 2025, at National Taiwan Normal University (NTNU), Taipei. Organized by the NTNU Chinese Language and Technology Center, the event provides a key platform for linguistic scholars and students to engage in academic exchange.

This year's theme, "New Narratives on Language: Transformation and Diversity," will explore language evolution and its diverse developments. The conference will feature keynote speeches, invited talks, workshops, and paper presentations.

Aiming to support young researchers, the NCL offers student presenters expert guidance from invited discussants. Since 2000, the conference has played a vital role in advancing linguistic studies in Taiwan. Scholars and students are encouraged to participate in this enriching event, fostering professional growth and interdisciplinary dialogue in linguistics.

For more detailed on the conference, visit: <https://top.ntnu.edu.tw/2025NCL/CH/home.aspx>.



## Upcoming Events

### The 5th World Congress of Taiwan Studies

Co-organized by Academia Sinica  
and National Taiwan Normal University.



The 5th World Congress of Taiwan Studies (WCTS) is set to be held in person at Academia Sinica in Taipei, Taiwan, from May 21 to 23, 2025. Co-organized by Academia Sinica and the International Taiwan Studies Center at National Taiwan Normal University (NTNU), the congress will convene leading scholars and experts from around the world.

This year's theme, "Taiwan in a Changing World: Past, Present, and Future," invites interdisciplinary dialogue on Taiwan's evolving global connections through historical, contemporary, and forward-looking lenses. Fields represented will include history, philology, archaeology, ethnology, economics, law, political science, linguistics, sociology, literature, and philosophy.

As a major international platform for advancing Taiwan Studies, the congress aims to foster meaningful academic exchange and strengthen global research networks. Scholars, students, and professionals are warmly invited to attend and help spread the word about this landmark event.

For more details, please visit: [https://wctsv.project.sinica.edu.tw/english/english\\_index.html](https://wctsv.project.sinica.edu.tw/english/english_index.html).

# Awards & Honors

## Featured Research Center Scholars

### Ranked Among the World's Top 2% Scientists in 2024

The August 2024 update of the “Updated Science-Wide Author Databases of Standardized Citation Indicators” has once again highlighted outstanding researchers from National Taiwan Normal University (NTNU). Scholars affiliated with NTNU’s Featured Research Centers have been ranked among the world’s top 2% scientists, reflecting their exceptional contributions to global scientific advancement.

These distinctions not only highlight individual research excellence but also underscore NTNU’s growing international reputation and the far-reaching impact of its academic endeavors across diverse disciplines.

List of Career-Long Impact (1960-2023)	List of Single Year Impact (2023)
<ul style="list-style-type: none"> <li>• <a href="#"><u>Prof. Chin-Chung Tsai</u></a></li> <li>• <a href="#"><u>Prof. Chun-Yen Chang</u></a></li> <li>• <a href="#"><u>Prof. Nian-Shing Chen</u></a></li> <li>• <a href="#"><u>Prof. Meng-Jung Tsai</u></a></li> <li>• <a href="#"><u>Prof. Tzu-Chien Liu</u></a></li> <li>• <a href="#"><u>Prof. Yu-Ju Lan</u></a></li> <li>• <a href="#"><u>Prof. Yao-Ting Sung</u></a></li> <li>• <a href="#"><u>Prof. Jon-Chao Hong</u></a> (<i>newly listed</i>)</li> <li>• <a href="#"><u>Prof. Yuen-Hsien Tseng</u></a></li> <li>• <a href="#"><u>Prof. Berlin Chen</u></a></li> <li>• <a href="#"><u>Prof. Yu-Kai Chang</u></a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#"><u>Prof. Chin-Chung Tsai</u></a></li> <li>• <a href="#"><u>Prof. Chun-Yen Chang</u></a></li> <li>• <a href="#"><u>Prof. Nian-Shing Chen</u></a></li> <li>• <a href="#"><u>Prof. Meng-Jung Tsai</u></a></li> <li>• <a href="#"><u>Prof. Jyh-Chong Liang</u></a></li> <li>• <a href="#"><u>Prof. Hsin-Yi Chang</u></a></li> <li>• <a href="#"><u>Prof. Tzu-Chien Liu</u></a> (<i>newly listed</i>)</li> <li>• <a href="#"><u>Prof. Yu-Ju Lan</u></a></li> <li>• <a href="#"><u>Prof. Yao-Ting Sung</u></a></li> <li>• <a href="#"><u>Prof. Jon-Chao Hong</u></a></li> <li>• <a href="#"><u>Prof. Yu-Kai Chang</u></a></li> <li>• <a href="#"><u>Prof. Wei-Ta Fang</u></a> (<i>newly listed</i>)</li> </ul>

► Related Links : [World's Top 2% Scientists 2023](#)

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## Dr. Silvia Wen-Yu Lee Honored with the 2025 Outstanding Research Award from the National Science and Technology Council, Taiwan

The National Science and Technology Council, Taiwan, has awarded Dr. Silvia Wen-Yu Lee the prestigious Outstanding Research Award for 2025, recognizing her remarkable contributions to the field of technology-enhanced learning.

As a Distinguished Professor at the Graduate Institute of Information and Computer Education and a member of the Institute for Research Excellence in Learning Sciences, Dr. Lee has been at the forefront of research in E-learning, Virtual Reality, Science Education, and Computational Thinking.



Her pioneering work has significantly advanced innovative educational methodologies, enhancing digital learning environments and fostering new teaching strategies. This award highlights Dr. Lee's dedication to academic excellence and her impact on the intersection of technology and education. Her contributions continue to shape the future of learning, inspiring educators and researchers worldwide.

Congratulations to Dr. Lee on this well-deserved recognition!

# NTNU Featured Research Newsletter

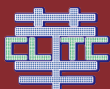
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International Taiwan Studies Center, NTNU  
國際臺灣學研究中心



社會情緒教育與發展研究中心  
Social Emotional Education and Development Center



華語文與科技研究中心  
Chinese Language and Technology Center



學習科學跨國頂尖研究中心  
Institute for Research Excellence in Learning Sciences