JingShi Wisdom&Learning

Be in awe of education, for it shapes the soul of human,
Be cautious to technologies, for its adoption has to be effective,
Be entangled with ‘wisdom’, for uncertainty tends to be increasing,
Be serious to academics, for academic research requires evidence.

——Dean Ronghuai Huang, delivered at the closing ceremony of the Second US-China Smart Education Conference on March 20, 2017

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北京师范大学智慧学习研究院
Smart Learning Institute of Beijing Normal University

Smart Learning Institute of Beijing Normal University

The Smart Learning Institute (SLI) of Beijing Normal University is a comprehensive experimental platform involving scientific research, technology development and instructional teaching, which is jointly established by Beijing Normal University and a global educational technology company, Elernity (a subsidiary of NetDragon). SLI focuses on finding learning patterns powered by ICT, creating smart learning environment and platforms for lifelong learning, as well as supporting diversified, personalized and differential learning needs for digital learners.

- Focusing on the methods of design, optimization and evaluation for learning environment as well as developing the key technologies for learning environment engineering aims at providing a widely-spread solution for promoting smart learning.
- Constructing the theory of smart learning and exploring the approaches of integrating ICT with Education aims at offering an international exchange and cooperation platform to smart learning research.
- Studying on the characteristics and patterns of schooling, family education, community education, enterprise learning and public learningaims at providing support for constructing a learning oriented society and smart city.
- Expanding the experimental areas and schools for smart learning as well as exploring the characteristics of ICT-based instruction and the models of future schools aims at promoting educational transformation and innovation.

Co-Dean Dejian LIU

Chairman of the Board, Executive Director of NETDRAGON, The Special Allowance Expert in State Council, Co-Dean of Smart Learning Institute of Beijing Normal University, Chair Professor at the College of Education of Harvard University.

Co-Dean Ronghuai HUANG

Co-Dean of Smart Learning Institute of Beijing Normal University, Director of UNESCO International Research and Training Centre for Rural Education, Director of National Engineering Laboratory for Cyberlearning and Intelligent Technology.

Open Series in Springer

- *New Frontiers of Educational Research*
Editors : Shi Z., Huang, R., & Zhou Z.
- *Lecture Notes in Educational Technology*
Editors : Huang, R., Kinshuk, Jemni, M., Chen, N.-S., & Spector, J. M.
- *Smart Computing and Intelligence*
Editors : Huang, R., Kinshuk, & Sampson, D.

Springer'sJournals

- *Journal of Computers in Education*
(The Official Journal of GCSCE)
Editors: Huang, R., Hwang, G.-J., Kong, S.-C., & Chen, W.
- Smart Learning Environments
(The Official Journal of IASLE)
Editors: Huang, R., Kinshuk, Chen, N.-S, & Soloway, E.

Design and Learning Laboratory

Study on the features and patterns of design, computational and innovative thinking for youth; Develop courses and books about design methodology, computational thinking and ICT; Build cooperative platform with world-renowned universities, enterprises and institutes for design and innovation.

Course in Havard University

Smart City and Learning Environment Laboratory

Study on the typical learning fields in smart cities and learning societies; Create database of smart learning environment; Publish serial reports on leraning environment as well as service industry and products of cyberlearning.

Open Educational Resources (OER) Laboratory

Study on the solution of OER under its impact to the developing countries; Construct the OER community for The Belt & Road countries ; Publish reports on the trends of ICT in education.

GSE Conference

IAU visited

ICT-based Instruction Center

Smart Education Demonstration Zone

Explore the methodology of integrating ICT into education with large-scale experiments; Study on the solutions of smart classroom and smart campus; Provide the services for transferring education through the bridge of the theory and practice.

Educational Robotics Center

Study on the scenarios of robotics in education and the trend of artificial intelligence; Develop the courses for robotic education and STEAM education for K-12 schools. Design educational robotic for various learning fields, such as school, family, etc.

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Any feedback or suggestions, please contact us via the following methods:
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Spring 2024

Features

The 7th Global Competition on Design for Future Education

The 7th Global Competition on Design for Future Education was launched on March 1st and will feature a "1+2" series of activities. The "1" refers to the main competition, which will be held across four tracks targeting higher education students, K-12 teachers, vocational students, and enterprises. The "2" refers to two monthly collection activities, including a poster design contest and a video submission event

Introduction to the GCD4FE Theme

- **Generative AI in Education:** Utilizing AIGC tools for creating text, videos, programming code, and 3D prints to enhance quality, efficiency, and equity in education.
- **Metaverse and Education:** Includes metaverse courses, virtual learning spaces, innovative educational games, cultural heritage, metaverse meetings, digital twins in education, and subject-specific virtual education spaces.
- **Rural Education:** Focuses on teacher supply, studentmotivation,learning environment design, tech talent development, local resource curriculum, interdisciplinary exploration, and innovative teaching tools.
- **Inclusive Education:** Designing educational solutions for disabled individuals, the elderly, girls, children with learning disabilities, gifted children, and vulnerable groups affected by war or crises.
- **Educational Neuroscience:** Covers policies, curricula, teaching, assessment, campus culture,educational spaces, teaching aids, toys, and AI/metaverse design.

Detailed Interpretation of the GCD4FE

- **Higher Education Track:** The competition includes a higher education track, warmly inviting undergraduate and graduate students from universities worldwide to participate.

This track encourages participants to actively engage in thinking about the future of education and to put their ideas into practice, seeking high-quality solutions for the development of global future education

- **Vocational Education Track:** As a crucial part of the national education system, vocational education provides talent and technical support that drive industry digitalization and significantly boost economic development. This year, the competition has introduced a new vocational education track. The competition encourages students from vocational institutions, both domestic and international, to actively participate. By applying design thinking to solve educational problems, this track aims to showcase the innovative mindset and practical skills of vocational students in applying emerging technologies and concepts to educational activities.
- **Enterprise Track:** This year, the competition has introduced a new enterprise track, encouraging participation from technical professionals and product designers within companies. The track aims to showcase their talents in technological development and innovative design, empowering educational transformation through digital technologies. It also seeks to enhance the leadership role of enterprises in technological innovation, contributing to the high-quality development of education.

Launch of the GCD4FE Registration

- **Main Competition (Four Tracks):** Register for the competition through the official website. Competition website: http://gcd4fe.bnu.edu.cn/)
- **Call for Posters:** Download the registration form from the official competition website, then submit your work along with the completed registration form to the competition email (d4fe@bnu.edu.cn).
- **Call for Videos:** Check the submission details on the competition website, and then submit your work using one of the following methods:
  UNESCO Institute for Information Technologies in Education (IITE) E-Library platform (https://elibrary.iite.unesco.org/)
  E-Library platform Chinese site (https://elibrary101.iite.unesco.org/)
  Competition email (d4fe@bnu.edu.cn).

Outstanding Posters of March

- **Wisdom Fusion: Co-Creating the Future-Oriented Classroom**
  Author: LIU Yanyan, Graduate Student in Applied Psychology, Department of Psychology, Beijing Normal University.
- **Future Education Rhapsody**
  Author: LIU Zhongchen, Ph.D. Student at Chonnam National University, South Korea
- **Science Education Initiative: Enthusiast Academy-Empowerment Platform for Science Teachers in Underdeveloped Regions under the New Curriculum Standard**
  Author: WANG Zhaoxin, Undergraduate Student in Network and New Media South China Normal University

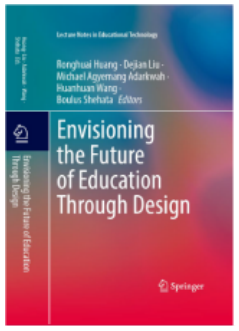
Outstanding Videos of March

In March 2024, participants from around the world competed and exchanged ideas on the same stage. After layers of screening and in-depth discussions, the monthly excellent works The Life of Watt and the Process of Improving the Steam Engine and Convex Lens Imaging stood out, while AI-Driven Teacherless Music Classroom was elected as the monthly popular work.

To watch the short videos, please scan the QR code.

Design and Learning MOOC Launched

On January 8th, 2024, Beijing time, the 9th Smart Learning Academic Week of Beijing Normal University announced the launch of the "Design and Learning" international course, developed using AI technology, which is now available on XuetangX. This course, created by Professors HUANG Ronghuai and LIU Dejian's team from the Smart Learning Research Institute of Beijing Normal University, aims to address educational challenges and drive innovation and transformation in the education sector through design thinking methodologies. The course framework is based on project-based learning and integrates mature theories, the latest achievements, and typical cases of future education design. It encourages collaboration across schools and disciplines to design key educational scenarios.



The Global Smart Education Conference 2024

Notice on the Convening of GSE 2024

Since its inception in 2020, the Global Smart Education Conference has served as a crucial platform for the international community to engage in exchanges and cooperation in the field of smart education. The "Global Smart Education Conference 2024" will be held under the theme of "Educational Transformation and International Understanding." The conference will feature plenary sessions, high-level dialogues, thematic forums, roundtable discussions, and workshops focused on smart education policies, technologies, and practices. It will also present research findings and cooperation plans, showcase outstanding cases and solutions, and foster deeper collaboration to jointly create a bright future for smart education that benefits all of humanity.

The thematic forums planned for this year's conference include:

Emerging Concerns: Digital Transformation and Educational Reform, Artificial Intelligence and the Future of Education, Data Governance and Public Services, Mental and Physical Health and Student Growth, Academic Research and International Communication, Integration of Science, Technology, and Education, and Industry-Education Integration.

Comprehensive Focus: Early Childhood Education, Basic Education, Higher Education, Vocational Education, and Lifelong Education.

Key Element Exploration: Digital Textbooks, Smart Reading, Smart Campuses, Educational Equipment, and Educational Assessment.

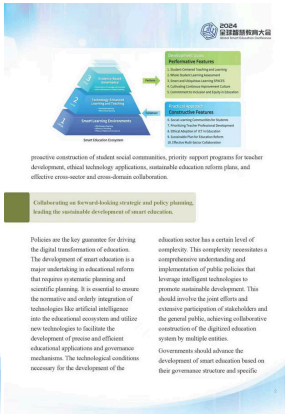
Broad-Spectrum Discussions: New Ecosystems for Regional Smart Education, Smart å and Rural Education, Teacher Education and Digital Literacy, Chinese Language Education and Cognitive Development, Digitalization of Experimental Teaching, Smart Learning, and Educational Design (detailed agenda to be announced separately).

Best Practices of Smart Education (2024)

To advance the development of digital and smart education, promote the exchange of experiences, and share outstanding cases, the "2024 Best Practices of Smart Education Collection" activity is being conducted under the guidance of the Department of Science, Technology, and Informatization of the Ministry of Education. This activity is organized by the Expert Group Secretariat of the Smart Education Demonstration Zone Creation Project in collaboration with the Educational Informatization Strategy Research Base.

The case collection is categorized into four types: Regional Development, School Practice, Solution, and Research Outcomes. These categories cover areas such as digital transformation, smart education innovation, and application scenarios. Cases should highlight their unique features and effectiveness, with a strong emphasis on data and empirical evidence. The case documentation should include a title, abstract, keywords, and body text (approximately 6,000 words), along with the author's name and contact information. Cases can be submitted voluntarily or recommended, with around 200 outstanding cases expected to be selected. The results will be announced and certificates awarded at the " Global Smart Education Conference 2024." Selected cases will be edited, published, and recommended for publication in relevant journals. The submission deadline is June 18th, 2024. For more details, visit: https://gse.bnu.edu.cn/202403/5118.html.

Concept Document of GSE2024

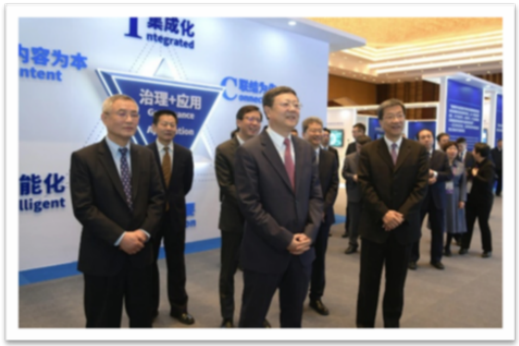


Important Events

The 2024 World Digital Education Conference

The 2024 World Digital Education Conference was held in Shanghai from January 29th to 31st, 2024. It was jointly organized by the Ministry of Education of the People's Republic of China, the Chinese National Commission for UNESCO, and the Shanghai Municipal People's Government. The conference, themed "Digital Education: Application, Sharing, Innovation," focused on topics such as teachers' digital literacy, the digitalization of education, artificial intelligence, and digital ethics. The goal was to promote inclusive, equitable, and quality education through digital education, contributing to the United Nations' Sustainable Development Goals. The event attracted more than 800 representatives from over 70 countries and regions worldwide.

On January 30th, the conference officially opened. CHEN Jining, Secretary of the Shanghai Municipal Committee of the CPC, and CAI Dafeng, Vice Chairman of the



Standing Committee of the National People's Congress, attended the opening ceremony and delivered speeches.HUAI Jinpeng, Minister of Education, gave the keynote speech titled "Promoting Jointly Application, Sharing and Innovation of Digital Education". During the conference, WU Yan, Vice Minister

of Education, presided over the launch ceremony of the international version of National Smart Education Platform.The conference attracted more than 800 representatives from over 70 countries and regions worldwid

Among the participants, NetDragon Websoft showcased projects such as the EDA platform, Future Lab, and hyper-realistic virtual human live streaming applications, garnering widespread attention from organizations such as the Ministry of Education, UNESCO, and the University of Oxford. NetDragon's educational products and technologies are present in 192 countries and regions globally. The company actively explores integrating new technologies such as AI, VR, and AR into its educational products, and successfully spun off its overseas education business to be listed on the New York Stock Exchange at the end of 2023. At the closing ceremony of the conference, the "AI & Education" Chair of Beijing Normal University assisted the Chinese National Commission for UNESCO in releasing the International Best Practices of Digital Education. This compendium includes 55 digital education cases from 35 countries and regions worldwide, categorized into six main themes, including fostering interconnected learning environments, sharing quality resources, facilitating the integration of digital technology and education, promoting digital literacy, creating an inclusive digital learning system, and providing access to education for the most marginalized groups. It showcases the diversity and inclusiveness of digital education innovations globally, offering valuable insights for countries in developing their digital education systems.

During the conference, a parallel session titled "Digital Governance of Education and Governance of Digital Education" was held. This session was guided by the Secretariat of the Chinese National Commission for UNESCO and organized by the Shanghai Municipal Education Commission, the Ministry of Education’ s Overseas Study Service Center, and Donghua University. Minister of

Education, attended and delivered a speech, emphasizing the profound impact of digital technology on global education.The Chinese

government places high importance on the digitalization of education governance and has introduced the Interim Measures for the Administration of Generative Artificial Intelligence Services, establisheds the Education Digitalization Expert Advisory Committee and the Artificial Intelligence Ethics Committee, and is promoting technological innovation and risk prevention. The session attracted ministerial-level representatives from countries such as Angola and Uzbekistan, as well as representatives from international organizations such as UNESCO and the World Bank. Topics such as "Practical and Innovative Experiences in Digital Governance of Education" and "Participation and Cooperation of Multiple Stakeholders" were discussed in depth.

The National Olympiad in Artificial Intelligence (NOAI) 2024

Teacher’s Symposium Was Held at Beijing Normal University

On March 9th, Beijing Normal University successfully hosted the National Olympiad in Artificial Intelligence (NOAI) 2024 Teacher’s Symposium. The event gathered over a hundred experts and scholars from the fields of artificial intelligence education and scientific research, as well as outstanding teachers and academic leaders in AI education practice.

The organizers and keynote speakers provided a comprehensive introduction and interpretation of the emerging international academic activity for secondary school students from multiple perspectives, including the purpose of establishing International

Olympiad in Artificial ntelligence (IOAI), I NOAI’s development plans, ways to participate and collaborative curriculum development and sharing. The conference also invited attendees' institutions to become founding members of the first round of proficiency testing, exploring innovative pathways for AI in the field of education together.

Yuanzhuo Initiatives "Spring: A Season for Reading" Information Technology Theme Book Authors Series Sharing Session

First Session: Exploring Computational Thinking: The Future Direction of STEM Education

On March 17, 2024, Professor Yu Xiaoya, Director of the Artificial Intelligence and Maker Education Research Center at Beijing Institute of Education, delivered a brilliant sharing session titled "Cultivating Computational Thinking Based on STEM Education". By introducing eight practical domains, Professor Yu demonstrated the extensive application of computational thinking across fields and proposed a self-checking practice process for students and teachers in STEM courses, providing a feasible and effective approach to implementing computational thinking.

Wang Aisheng, Senior Teacher at Qingzhou No.1 Middle School, Shandong Province, Programming World – Python Edition

Professor Yu Xiaoya, Director of the Artificial Intelligence and Maker Education Research Center at Beijing Institute of Education, STEM and Computational Thinking.

Second Session: Coding to Inherit Culture: A New Chapter in Python and Programming Education

IOn March 23, 2024, Wang Aisheng, a Senior Teacher at Qingzhou No.1 Middle School in Shandong Province, shared insights under the theme "Algorithm and Programming Education Based on Computational Thinking: Taking the Creation of 'Programming Jianghu' as an Example". Mr. Wang integrated algorithm education with traditional Chinese martial arts culture, innovatively introducing concepts like swordsmanship, sword techniques and sword philosophy to analogize program knowledge, algorithm design, and computational thinking.

Third Session: Exploring the Future of Education: New Paths for Super AI and Future Education

On March 30, 2024, Li Junyi, a Guest Researcher of the China Education 30 Forum, discussed with the audience under the theme "Super AI and Future Education–Four Main Courses for Educators to Savor". Mr. Li proposed four major themes of "AI+Education": dualistic thinking, cognitive models, role positioning, and practical actions. Through 30 thought-provoking questions, he explored the impact of AI on education and the evolving role of teachers in the AI era.

Li Junyi, Guest Researcher of the China Education 30 Forum, Super AI and Future Education

Book & Articles

Generative AI and its Uses in Education: Foundational Controversies and Responding Strategies

Open Education Research Miao Fengchun

The paper is the second edition of a serials of interpretative articles on the Guidance on generative AI in education and research released by UNESCO, and the main aim of this edition is to examine the controversies around generative AI and its use in education. Based on an analysis of how it works, the development and deployment of generative AI have triggered the following controversies: worsening digital poverties, outpacing domestic governance, the collection of pre-training data without consent, the unexplainability of the architecture, the foundational models can't under the real world, the outputs of generative AI is polluting the internet, the outputs are projecting dominant values, amplifying the creation and dissemination of illegal deepfakes. Generative AI poses direct and most profound threats on the core values of education including inclusion, equity, cultural and linguistic diversities, pluralism in knowledge construction and expression, and therefore, those core values should be upheld as the logic base when examining the proportionality of generative AI to service purposes of education.

The Logic of Digital Technology Empowering Current Educational Reforms——From Environment, Resources to Digital Pedagogy

Basic Education in China Huang Ronghuai

The digitalization of education serves as a crucial breakthrough point for China to open up new frontiers in educational development and establish new competitive advantages. To fully leverage its pivotal role, it is essential to clarify the inherent logic through which digital technology empowers current educational reform. The integration of digital technology into education has evolved through three primary stages: the construction of learning environments, the development and application of digital resources, and the digital transformation of teaching. These stages respectively prioritize infrastructure development and equipment deployment, emphasize resource platform building and

nhanced service delivery capabilities, and focus on the holistic reshaping of pedagogical approaches. In response to the global shift toward educational digitalization, while continuously optimizing and intelligently upgrading learning environments and digital resources, attention must be directed toward key dimensions such as technology-enabled deep learning, green and robust digital learning environments, evidence-based teaching practices, and collaborative education built on human-machine trust. By collectively researching, exploring, and implementing digital pedagogy, we can drive the innovation of educational paradigms and build a human-centered, efficient, and resilient digital education ecosystem.

Typical Scenarios and Governance of Educational Robot Application

China Modern Educational Equipment

Huang Ronghuai, Chen Ying, Ahmed Tlili

Abstract: The rapid development of generative AI has triggered new concerns about the integration of intelligent technologies into education. Educational robot shows great potential in assisting teaching and learning, but it also brings new ethical and safety risks, so the research, regulation and governance of educational robots should be strengthened. We sort out seven typical application scenarios, including educational robots in STEM education, robot-oriented programming, language learning supported by social robots, etc., and propose the values and application suggestions of chatbot in school education through social media discourse analysis about ChatGPT. We also argue that a credible AI framework in education should be constructed, and intelligent technology governance should be carried out to provide guarantee for the high quality and sustainable development of education.

How does digitalization drive the transformation of teaching and learning in vocational institutions?

China Education Daily Liu Dejian

Driven by the rapid development of new-generation information technologies represented by artificial intelligence and big data, society is undergoing accelerated transformation. Traditional industries are experiencing digital transformation and intelligent upgrading, with new business forms, occupations, and job roles emerging

endlessly. There is an urgent need for a large number of talents with high digital literacy, strong adaptability, and advanced technical skills. China has deeply advanced the National Strategy for Education Digitization, promoting the integrated innovation of digital technologies with education and teaching. Efforts to achieve the integration of vocational and general education, the integration of industry and education, and the integration of science and education have outlined a new blueprint for the high-quality development of vocational education. Oriented toward employment and aiming to cultivate skilled talents, vocational education places greater emphasis on students' operational capabilities and practical skills, stimulates their interest in learning, and attaches importance to lifelong learning and lifelong services that integrate pre-employment and post-employment education. Learning on demand adapts to learners' diverse study needs, meets multi-level requirements for advancing learning goals, reduces the intimidation of initial learning, and uses intelligent technologies to effectively connect resources, environments, and services. This provides a new paradigm for the digital transformation and high-quality development of vocational education.


中国教育报

智慧教育 03

北京市房山区：

数字化打开区域教育优质均衡新空间

数字化如何推动职业院校教学改革


“智慧景行”让育人过程看得见

Digital Education: Application, Sharing, and Innovation——Overview of the 2024 World Digital Education Conference


Digital Education: Application, Sharing, and Innovation

—Overview of the 2024 World Digital Education Conference

Feng Tingting[1,2], Liu Dejian[2], Huang Lulu[3], Cao Peijie[4], Zeng Haiju

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2.Smart Learning Institute, Beijing Normal University, Beijing 1008

3.China Education Daily, Beijing 1000

4.China National Academy of Educational Sciences, Beijing 1000

Abstract: As the new wave of technological and industrial revolutions continues to unfold, digital technology increasingly serves a driving force reshaping fundamental aspects of human societal thinking, organizational structures, and operational modes. The symphony educational reform is intricately interwoven with the ongoing digital transformation. The key to advancing digital education lies in applicati the potential lies in collaboration, and vitality lies in innovation. Open cooperation is an indispensable path forward. The World Digi Education Conference serves as a crucial platform for fostering exchange and collaboration in digital education. This paper, based on the k insights from the 2024 World Digital Education Conference, explores new concepts, technologies, and pathways in the application, shari and innovation of digital education. From “3C” to “GAI3”, the discussion encompasses topics such as enhancing teachers' digital literacy a competency, building a digitalized and learning-oriented society, empowering basic education through digitalization, artificial intelliger and digital ethics, digital governance in education, and the evaluation of digital education through indices, contributing to the discourse on t future path of digital education.

Keywords: digital education; application; sharing; innovation; smart education

China Educational Technology

Feng Tingting, Liu Dejian, Huang Lulu, Cao Peijie, Zeng Haijun

AAbstract: As the new wave of technological and industrial revolutions continues to unfold, digital technology increasingly serves as a driving force reshaping fundamental aspects of human societal thinking, organizational structures, and operational modes. The symphony of educational reform is intricately interwoven with the ongoing digital transformation. The key to advancing digital education lies in application, the potential lies in collaboration, and vitality lies in innovation. Open cooperation is an indispensable path forward. The World Digital Education Conference serves as a crucial platform for fostering exchange and collaboration in digital education. This paper, based on the key insights from the 2024 World Digital Education Conference, explores new concepts, technologies, and pathways in the application, sharing, and innovation of digital education. From "3C" to "GAI3", the discussion encompasses topics such as enhancing teachers' digital literacy and competency, building a digitalized and learning-oriented society, empowering basic education through digitalization, artificial intelligence and digital ethics, digital governance in education, and the evaluation of digital education through indices, contributing to the discourse on the future path of digital education.