

Global Smart School Initiative

| *Envisioning Smart Schools,
Piecing Together the Future of Education.*



Smart Learning Institute of Beijing Normal University, China

August 2026



The Global Smart Education Network (GSENet) was jointly established in 2022 by Beijing Normal University (BNU), the UNESCO Institute for Information Technologies in Education (UNESCO IITE), the Commonwealth of Learning (COL), the International Society for Technology in Education (ISTE), the Arab League Educational, Cultural and Scientific Organization (ALECSO), the Southeast Asian Ministers of Education Organization (SEAMEO). As of now, the Network comprises 28 partners from all major regions of the world. It has developed into a global platform for international cooperation, policy dialogue, joint research in the field of smart education.

GSENet seeks to advance the effective implementation of smart education worldwide and contribute to equitable, inclusive, and quality education for all. In collaboration with its partners, the Network has launched the Joint Research Programme on National Smart Education Strategies, produced the Global Smart Education Development Reports, and regularly convened the GSENet Webinar Series.



2024 • 2033
International Decade of
Sciences for Sustainable
Development

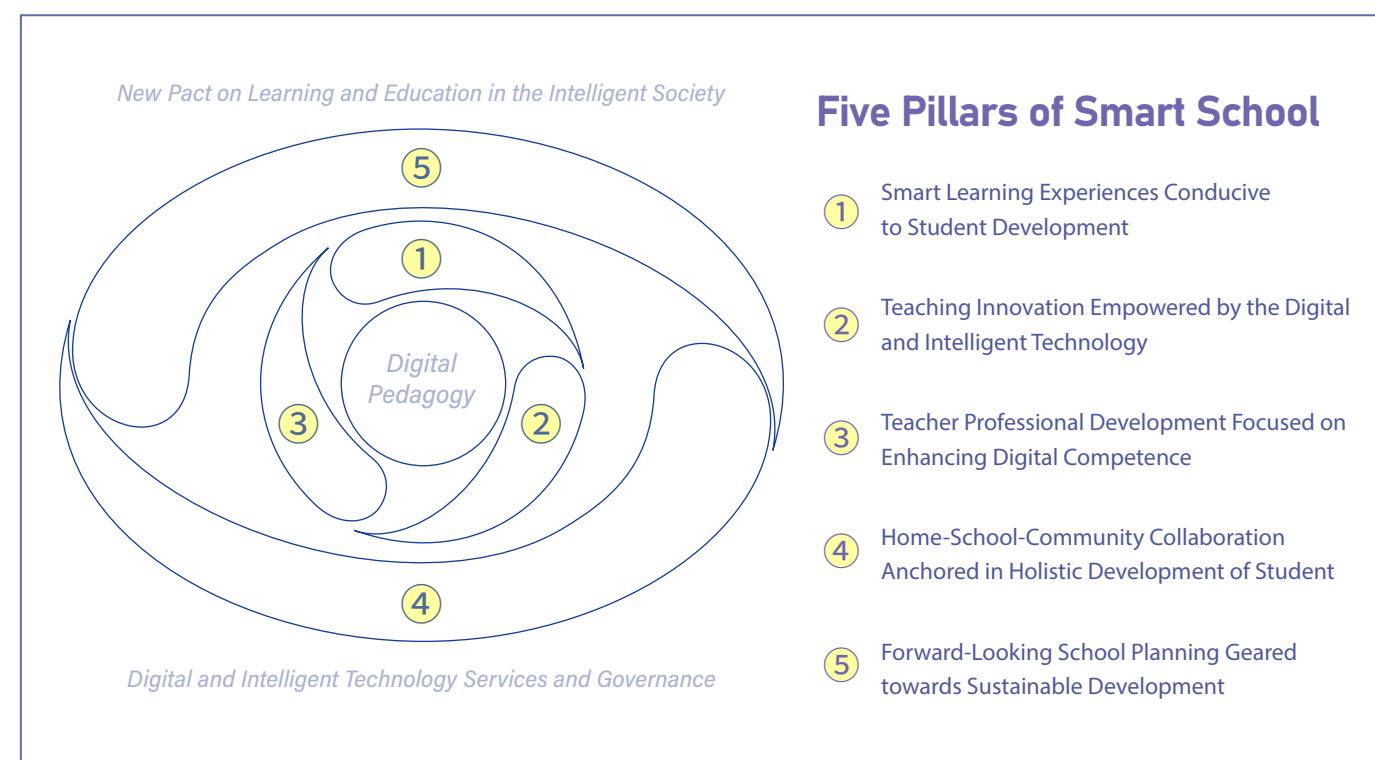
Reshaping the Future of Educational Science Based on Intelligent Social Experiment (ISE)

Intelligent Social Experiment (ISE), grounded in real educational and instructional practice, explores how teaching, learning, and school development evolve in the AI era. Through large-scale and long-term observation, as well as interdisciplinary and evidence-based research, ISE seeks to identify the processes, conditions, and mechanisms through which emerging technologies shape educational transformation. It aims to generate new theories, models, and practical strategies for responsible AI integration in education, supporting SDG4 and contributing to the post-2030 education agenda for more inclusive, equitable, and high-quality learning futures.



What is a Smart School

A smart school is a new model of schooling that develops, pilots and refines digital pedagogies within digital and intelligent learning space to provide high-quality learning experiences, highly adaptable learning content, and highly efficient teaching. It rethinks the foundational logic of education in the intelligent society by exploring a new pact on learning and education and translating its principles into practice. It provides students, teachers, school administrators and parents with personalized and on-demand learning, assessment and educational services. It is committed to expanding equitable access to educational opportunities, optimizing coordination among the resources, services and stakeholders that support education within and beyond the school, and strengthening governance of both the application of digital and AI technologies and the mechanisms and processes of school transformation, with a view to continuously improving the quality of teaching and learning and supporting students' holistic development in the age of AI.



Background and Rationale

The systemic challenge: rethinking schooling in the intelligent age

The central challenge facing education today is no longer simply how to introduce more technology into schools. It is fundamentally about ensuring that schools continue to deliver meaningful learning, educational equity, human development, and social cohesion in an era increasingly shaped by digital transformation and artificial intelligence. As intelligent technologies reshape teaching, assessment, management, and decision-making, the future of schooling has become a structural issue rather than a purely technical one. At stake is whether schools can evolve as educationally sound, socially responsible, and future-oriented institutions. UNESCO has called for renewing the social purpose of education through a new social contract that places technology at the service of human-centred, equitable, safe, and ethical development. This requires two fundamental lines of inquiry: *What is changing in schools, and what should remain constant in schools in the intelligent era? What should be done, and how can it be achieved?*

The emerging landscape: growing experimentation worldwide

These policy discussions are increasingly turning into practice. Future-oriented initiatives worldwide share common features: personalised learning, data-driven decision-making, enhanced teacher support, and deep integration of intelligent technologies across teaching, assessment, management, and student support. Examples include the AI-powered Alpha School in the United States, national pilots in countries such as Korea, Estonia, Greece, Slovakia, Finland, and France, and China's *White Paper on Smart Education*, which outlines visions for future teachers, classrooms, schools, and learning centres, emphasizing data-driven governance and holistic student development.

The remaining gap: need for a shared framework

Despite growing international attention and expanding practices, there is still no widely shared framework for defining what constitutes a future-oriented, educationally sound, and socially responsible school. Existing efforts often focus on individual elements such as tools, infrastructure, or teacher support, but lack a whole-school level transformation plan. Against this background, the *Global Smart School Initiative* seeks to establish a global, inclusive and evidence-informed platform for experience exchange, evaluation and advisory support, and school certification. It will bring together contextualised practices, examine the conditions that enable them to succeed and support their responsible adaptation and continuous improvement. Rather than defining a universal model, the Initiative will strengthen experience sharing and help piece together an evolving understanding of smart school and the futures of education.

Vision

The Initiative envisions a global community of smart schools that develop, pilot and refine digital pedagogies in AI-empowered learning environment to provide high-quality learning experiences, highly adaptable learning content and highly efficient teaching. These schools translate the principles of UNESCO's new social contract for education into practice, demonstrate how school-level innovation can advance SDG4, and provide foresight exercise for education beyond 2030.

Pathways

Best-Practice Sharing

Identify, document and share practices aligned with the Smart School Pillars to foster peer learning, strengthen the evidence base and piece together an evolving picture of the smart school of the future.

School Transformation Consultancy

Establish experts committee to conduct diagnostic reviews and provide tailored advice, helping schools identify strengths, set improvement priorities and develop context-responsive pathways for transformation.

Smart School Certification

Recognise demonstrated practice and continuous improvement through transparent, evidence-based certification aligned with the Smart School Pillars, covering both the application of digital and intelligent technologies and the mechanisms and processes sustaining school transformation.

Expected Outcomes

■ A shared framework for smart schooling

A globally informed yet context-sensitive framework supporting school self-assessment, transformation advisory and certification.

■ A global evidence base for future policy and practice

A diverse and accessible portfolio of smart school practices, evaluation findings and consultation insights that documents what works, for whom, under what conditions and in which contexts; identifies emerging possibilities, enabling conditions and risks; and informs education policy, research and the post-2030 education agenda.

■ A global community of practice for Smart School

A sustained network connecting schools, educators and partners through peer learning, collaborative inquiry and mutual support.

■ Stronger capacity for education transformation

Greater capacity among participating schools to identify needs, plan change, adopt digital and intelligent technologies responsibly and sustain evidence-informed improvement.

■ A credible recognition mechanism

A transparent certification system recognising demonstrated practice, whole-school transformation and continuous improvement across diverse contexts.



Pillar I: Smart Learning Experiences Conducive to Student Development

This pillar focuses on the development of smart campuses and future learning spaces to enhance smart learning experiences and enable every learner to reach their full potential. In teaching and learning, digital and AI-enabled cognitive tools should be carefully evaluated and selected for their pedagogical relevance and efficacy, and used purposefully to support learners’ cognition development. Schools should also foster diverse, inclusive, active and supportive learning communities that enable learners to engage in flexible, coherent and seamless learning across different times, spaces and contexts. Schools should create easy, engaging and effective learning experiences in which learners engage in active inquiry, meaning construction and transformation of knowledge across contexts, ultimately fostering deeper learning and enabling personalised learning at scale.



PIECE 1 Wings Agora, Netherlands

Fostering Student Development through “Challenges” and an Open Learning Community

Wings Agora is an innovative secondary school in Roermond, the Netherlands, delivering secondary education through a learner-centred model built around *autonomous learning, personalised learning pathways, and engagement with the world beyond school*. Rather than organising learning around a common timetable and standardised progression, the school begins with what each *student finds meaningful and genuinely wants or needs to learn*.

Learning through “Challenges” Rooted in Student Curiosity

At Wings Agora, *students’ interests and curiosity provide the starting point for learning*. With guidance from a coach, each student frames a “challenge” around a question to explore, a problem to solve, or an idea or product to develop. The student and coach agree on the intended learning outcomes, approach, timeframe, resources and expected output. Students then identify relevant sources, expertise and networks, present their plans, and pursue inquiry through research, interviews, experimentation,

design or practical work. Plans evolve as new questions arise. Progress, setbacks and adjustments are recorded in a logbook, and each challenge concludes with a presentation and a reflective conversation with the coach. Agora’s *five interconnected “worlds”*, including scientific, societal, ethical, artistic and spiritual, provide complementary lenses for examining complex questions. By drawing together knowledge from different fields, each challenge connects inquiry with practical application, collaboration and reflection, fostering interdisciplinary learning and the ability to apply learning in new contexts.

Combining Learner Autonomy with Structured Coaching

At Wings Agora, *student choice is supported by a clear learning structure*. Daily group starts, weekly coaching conversations, presentations of plans and outcomes, and regular feedback help students set priorities, monitor progress and remain accountable for their learning.

Teachers act as coaches, guiding the learning process through dialogue, questions and feedback. They help students deepen their inquiry, reflect on their progress and connect with relevant expertise and resources. This *balance of autonomy and structured guidance* enables students to assume growing responsibility while sustaining purposeful learning.

Extending Learning through an Open Learning Community

At Wings Agora, *learning extends beyond the school*. Students draw on the expertise and resources of community organisations, businesses and cultural

institutions, working with practitioners when their challenges call for wider knowledge or experience. Parents and professionals contribute as active learning partners by offering placements, leading workshops and inspiration sessions, or advising students on specific challenges. These connections create an open learning community in which students learn with and from others in authentic contexts. This wider community provides a high-quality learning experience that combines autonomy, purposeful challenge, collaboration and sustained support.

<https://wingsroermond.nl/agora/praktische-info>

PIECE 2 Beijing No. 18 High School, China

Developing Independent Inquiry and Deeper Learning through Critical Engagement with AI

Beijing No. 18 High School is a public secondary school in Beijing’s Fengtai District and one of the *AI in Education pilot schools* in Beijing. As generative AI became part of students’ everyday learning, the school shifted its attention from whether students could use AI to whether they could learn meaningfully and independently with it. By 2024, 63% of students had already used generative AI tools in the school. In response, the school created a generative AI literacy course that engages students in questioning, investigation and critical evaluation. Rather than providing isolated training in AI tools, the course engages students in a recurring process of questioning, investigation and critical evaluation.

Critical Inquiry through Deep-dive Human–AI Dialogue

The course address authentic issues concerning relationships between people, technology, nature and society. Teachers introduce a situation rather than a predetermined question, allowing students to identify what they find significant or puzzling and formulate their own lines of inquiry. Most class time is reserved for independent and collaborative investigation involving dialogue between students and teachers, among peers, and with AI.

In the process, teachers extend students’ thinking through probing questions, prompts and analytical tools. AI helps

students access information, broaden their perspectives, analyse problems and evaluate possible solutions. Students remain responsible for framing the question, critically evaluating information, developing the response and making the final ethical and value judgements.

Deeper Inquiry through Eight Elements on Learning Designing

To prevent inquiry from becoming a succession of uncritical prompts, the course structures learning around eight connected practices. Students situate an issue in an authentic context and select appropriate ways of examining it; clarify the respective roles of learners, teachers, peers and AI; plan and test a course of action; monitor how their own thinking develops; challenge unsupported or biased AI outputs; connect evidence across sources and disciplines; and reach their own reasoned conclusions.

Students move repeatedly between questioning, dialogue, verification, synthesis and reflection. This enables them to progress from collecting information to constructing explanations, developing solutions and transferring what they have learned to new situations. AI functions as a cognitive scaffold and a partner in dialogue, while intellectual ownership and responsibility remain with the student.

<http://www.bj18.net/>

Pillar II: Teaching Innovation Empowered by the Digital and Intelligent Technologies

This pillar emphasizes on supporting a school-wide paradigm shift in teaching and learning through the purposeful use of secure, stable and reliable digital and AI technologies. Smart schools should develop trustworthy learning spaces to provide a sound foundation for teaching and learning. Schools should encourage and support teachers to use learning analytics to gain insight into learning process and behaviours. Drawing on these insights and working in alignment with curriculum standards and textbooks, teachers should access, identify and use high-quality, user-friendly and inclusive digital education content to design and organise diverse learning activities. Schools should guide students to engage in human–AI teaming learning, with tasks allocated appropriately to draw on the complementary strengths of learners and intelligent systems and to broaden the forms of class interaction and learning support. Schools should also adopt a growth-oriented approach to assessment that focuses on students’ individual progress and developmental needs and continuously collect diverse evidence of learning and provide timely feedback to inform instructional adjustments and develop evidence-informed teaching practices.



PIECE 3

Primary School Savremena, Serbia

Extending Classroom Interaction and Learning Support through Human–Robot Collaboration

Primary School Savremena is an innovative primary school in Belgrade, Serbia, with a strong focus on human–robot collaborative teaching and learning. The school introduced the humanoid robot Pepper as a teaching assistant within a classroom model centred on student learning.

Defining Complementary Roles for Teachers and Pepper

Pepper supports rather than replaces the teacher. Teachers retain responsibility for setting learning objectives, designing activities, facilitating collaboration and making pedagogical decisions. Pepper assists with presenting content, answering questions, administering interactive quizzes and providing immediate feedback. Students can speak directly with the robot or engage with it through collaborative, programming and problem-solving activities designed by the teacher. This division of roles allows teachers to guide the overall learning process while *Pepper supports recurring and*

interaction-intensive tasks, establishing a clear model of human–robot collaboration.

Using AI to Make Classroom Interaction More Responsive

Technology thus serves not simply as a source of novelty, but as a tool connecting student interaction, immediate feedback and pedagogical adjustment. Pepper can recognise speech, movement, faces and emotional cues and communicate through voice, gesture and its integrated screen. These capabilities support interactive lessons, emotion recognition and personalised feedback. A subsequent software extension tested Pepper’s connection with ChatGPT, expanding its ability to understand questions and generate natural-language responses. Students’ quiz responses and interactions provide teachers with additional evidence of participation, understanding and learning difficulties. Teachers can use this information to adapt explanations,

activities and follow-up support.

Supporting Implementation through Teacher Training and Technical Assistance

Before classroom implementation, teachers received training in operating Pepper’s management platform, controlling its movement and incorporating its functions into lesson design. The school also provided ongoing management and technical support, including software testing and development. These arrangements helped teachers use the robot purposefully while reducing the disruption caused by technical issues.

Classroom observations and teacher feedback reported greater student interest, attention and active participation, as well as stronger willingness to interact among some previously less vocal students. Pepper’s interactive quizzes and immediate responses also encouraged students to ask questions and remain engaged with the learning content. The case demonstrates that the educational value of intelligent technology depends not only on its technical capabilities, but also on sound instructional design, teacher mediation and reliable implementation support.

<https://en.savremena-osnovna.edu.rs/>

PIECE 4

Yinchuan Huaxi Middle School, China

Making Student Thinking Visible and Using Learning Evidence to Improve Teaching

Yinchuan Huaxi Hope Middle School is a rural lower-secondary school serving a resettled community in Ningxia. It was among the region’s first pilot schools to advance classroom reform and improve teaching effectiveness.

Advancing Equity through Trustworthy Digital Learning Spaces

Faced with limited access to high-quality educational resources and wide differences in students’ prior learning, the school began integrating information technology with classroom reform at an early stage. It has since equipped every classroom with national *Classroom Connect Project* and established specialist learning spaces for virtual reality, digital reading, music, history, calligraphy and physical education. Teachers also make regular use of digital resources from the *National Smart Education Platform* and the *Ningxia Education Cloud*.

Making Students’ Thinking Visible for Evidence-Informed Teaching

Since 2014, the school has used visual thinking tools throughout pre-class, in-class and post-class learning to make students’ reasoning more visible. Before class, teachers distribute preparatory tasks through the *Ningxia Education Cloud*, while students use graphic organisers to structure their knowledge and identify gaps in

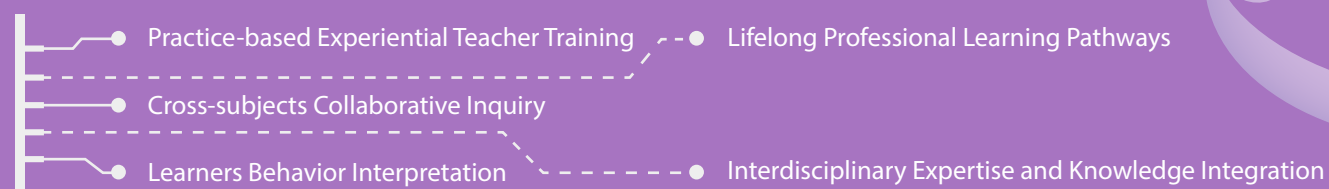
understanding. During lessons, teachers select tools suited to different subjects and tasks. Science students use flowcharts to examine experimental procedures and relationships between variables, humanities students use tree diagrams to analyse the structure of texts, and English students use mind maps to plan their writing. After class, students use graphic organisers to analyse errors, reorganise and consolidate their knowledge, and reflect on their learning processes.

The school uses learning data and analytics to respond to learner variability and provide differentiated support. Drawing on digital learning platforms and student devices, it integrates evidence from pre-class work, classroom participation and assignments to give teachers an up-to-date picture of each student’s readiness, progress and areas of difficulty. Teachers use these insights to refine their lesson plans and provide highly adaptable learning content through resources and tasks tailored to students’ diverse needs. Evidence from subsequent learning informs the next cycle of planning and instruction, making continuous, evidence-informed improvement part of everyday teaching. Since these practices were introduced, the proportion of students progressing to upper-secondary education has risen steadily to 70%, with marked gains among students requiring additional learning support.

<http://ycjy.nxeduyun.com/index.php?r=space/school/theme/index&sid=a8719585f58947dbb21555e1a78d1bd9>

Pillar III: Teacher Professional Development Focused on Key Digital Competence

This pillar centres on enhancing teachers' digital competence through a school-level and adequately resourced system offering diverse pathways for teacher professional development. Schools should offer active, experiential and practice-based teacher training grounded in real classroom challenges and practical tasks, enabling teachers to engage deeply in cycles of practice, reflection and improvement, and to translate theories into classroom actions. Schools should also establish institutionalised pathways of lifelong professional learning for teachers, backed by stable funding, dedicated time and regular development opportunities. Schools should facilitate cross-disciplinary collaborative inquiry through which teachers share knowledge and co-design instruction, deepen their understanding of other disciplines, and integrate knowledge across subject areas to design and deliver interdisciplinary teaching. Teachers should be guided to gather, analyse and interpret evidence from classroom observations and other sources, including data from digital platforms and AI tools, to understand how students are progressing and engaging in class and to adapt their teaching in response.



PIECE 5

Crescent Girls' School, Singapore

Developing Digital Teaching Competency through Collaborative Lesson Design and Open Classrooms

Crescent Girls' School is a secondary school in Singapore and one of the country's pioneer *FutureSchools@Singapore*. In 2011, it launched the *Crescent Academy for Digital-Age Learning (CrADLe)*, making teacher professional learning a sustained part of its digital transformation. CrADLe supports the meaningful infusion of technology into teaching to develop *21st-century competencies*, including self-directed and collaborative learning.

| Using 21CLD to Drive an Iterative Cycle of Lesson Design

Crescent adopted 21st Century Learning Design (21CLD) across the school to provide teachers with a *shared framework and clear criteria for analysing and improving lesson design*. Teacher teams use the 21CLD rubrics to examine existing learning activities, focusing on whether technology creates meaningful opportunities for collaboration, knowledge construction, real-world problem-solving and deeper learning. Based on this

analysis, teachers collaboratively redesign their lessons, test them in the classroom and examine evidence from student work, classroom observations and learning assessments. They then reflect on implementation and refine the design. *This practice-based cycle, analysing, co-designing, implementing, observing evidence and improving, positions technology as an enabler of pedagogical change rather than an end in itself.*

| Opening Classrooms for Peer Learning

Since 2017, Crescent's *Open Classrooms* have enabled teachers to observe how colleagues use technology in authentic lessons. Observations focus on how digital tools support students in articulating their thinking, collaborating with others and completing learning tasks. Post-lesson dialogue allows teachers to examine the relationship between learning objectives, student responses and the pedagogical value of technology. With workshops, webinars and school-to-school exchanges,

Open Classrooms connect technology training with classroom enactment and peer reflection. Professional learning is therefore grounded in teachers' everyday practice and continually translated into changes in lesson design and classroom interaction.

| Building Interdisciplinary Curriculum Design Capacity

Teacher professional learning is also embedded in Crescent's three-year Integrated Curriculum Programme. Under the Secondary Three theme of Governance, teachers of English Language, Mathematics and Social Studies jointly align learning objectives, activities and assessment.

English Language develops Skilled Communication, Mathematics applies statistics to real-life situations, and Social Studies supports research, global awareness and understanding of public issues.

Collaborative design requires teachers to engage with the concepts and ways of thinking of other disciplines while contributing their own subject expertise. By working together on authentic curriculum problems, teachers strengthen their capacity to connect disciplinary knowledge, design interdisciplinary learning experiences and assess shared learning outcomes.

<https://www.crescent.edu.sg/>

PIECE 6

Shenzhen Mingde Experimental School, China

Advancing Teacher Professional Development through Practice-Based Teacher Training and Cross-Disciplinary Collaboration

Shenzhen Mingde Experimental School (Group) is a public school jointly established by the Futian District Government and Tencent Charity Foundation. It has grown into a multi-campus education group providing twelve years of education from primary through upper-secondary level. Guided by a commitment to extending learning beyond conventional boundaries and preparing students for the future, the school embeds teacher professional development throughout the cycle of curriculum development and classroom practice.

| Cross-Disciplinary Evidence-based Project-Based Learning (E-PBL)

The school has developed E-PBL approach that brings together primary and lower-secondary teachers from different subject areas to jointly design problem-driven projects and learning activities. Collaborative professional learning is organised around an ongoing cycle of design, classroom implementation, reflection and iterative refinement. Learning analytics form part of teachers' professional practice. Digital management platforms and intelligent sensing systems bring together data on classroom interaction, assignment completion and inquiry activities. Teachers use these data diagnostically to assess student learning and adapt classroom tasks and learning support. The systematic use of learning evidence strengthens their capacity to identify learning needs and

make evidence-informed improvements to teaching. The school established 40 innovation laboratories and 40 teacher teams working across subject areas to carry out joint lesson planning and peer review, developing 297 interdisciplinary courses spanning primary, lower-secondary and upper-secondary education. Work on shared curriculum challenges broadens teachers' understanding of other disciplines and strengthens their capacity to integrate knowledge across fields. Evidence from student performance informs the continuing refinement of project and inquiry tasks.

| Dedicated Funding and Cross-Sector Partnerships

Public funding and support from an education foundation provide a stable financial basis for teacher professional development. The school also works with 25 companies, including Huawei, Tencent and DJI, and with universities, such as The Chinese University of Hong Kong (Shenzhen), to establish innovation laboratories. These partnerships provide teachers with access to industry technologies innovation, research expertise and real-world contexts. Scientists, engineers and other specialists also contribute to educational activities at the school. Cross-institutional appointments, financial incentives and structured professional development pathways provide further opportunities for teachers to engage in curriculum innovation and sustained professional learning.

<https://mdsy.szftedu.cn/>

Pillar IV: Forward-Looking School Planning Geared towards Sustainable Development

This pillar highlights how assessments of schools’ maturity of digital transformation can inform forward-looking planning and guide sustainable development. Schools should rethink their educational aims and assess the digital infrastructure, digital learning and teaching practices, resources and available external support for school development, to articulate a clear vision, mission and define feasible pathways for school digital transformation. Schools should establish multi-stakeholder decision-making mechanisms that meaningfully involve policymakers, school leaders, teachers, students and parents throughout the planning, implementation and evaluation process. Schools should also continuously monitor and periodically evaluate their digital infrastructure, adopt technologies responsibly, and embed data-informed decision-making in school governance. Schools should foster a culture of continuous improvement in which monitoring, feedback and reflection are embedded throughout the development cycle and inform the ongoing refinement of school planning, governance decisions and technology practices in support of sustainable school development.



PIECE 7

Canada Royal Arts High School, Canada *Building a Culture of Continuous Improvement through School-Based Validation*

Canada Royal Arts High School is a secondary school in Vancouver where *planning and improvement are informed by evidence about how students learn and develop*. The school serves as the main site for the long-term implementation of the *Growth Science System: A Human Potential Alignment Framework*. Rather than treating innovation as a one-off project, it uses evidence from practice to test, refine and strengthen its approach over time.

Maintaining a Consistent Direction through Phased Development

Guided by the principle *Understand Before Intervention*, the school has making clear developing plan in three phase. Longitudinal observation and educational research between 2002 and 2016 shaped the initial framework. In 2017, the school began applying it in day-to-day teaching and student support, using feedback from educators, students and families to guide further refinement. Since 2024, AI-assisted digital tools have made it easier to bring information together, apply the framework consistently

and provide more timely insights. Although the methods and tools have changed, the school continues to place a careful *understanding of each student at the centre of educational decision-making*. AI supports the process, but teachers remain responsible for interpreting the evidence and deciding how students should be supported.

Using Evidence from Daily Practices to Refine Student Support Strategies

Teachers build a fuller picture of each student through classroom observation, learning records and regular conversations. They use this information to plan appropriate support and then monitor how students respond once it is introduced. Evidence from classroom participation, learning progress and student work is reviewed with colleagues, students and families. Approaches that work are retained, while those that do not produce the intended results are adjusted. New questions arising from practice feed into the next round of inquiry. The school's validation cycle therefore moves from observation to implementation, reflection,

refinement and a new cycle of action. Repeated use allows both the framework and classroom practice to evolve in response to the needs of different students.

Embedding Continuous Improvement in School Culture

The school has followed this process across nine consecutive academic years since 2017. Over time, *regular observation, professional learning, collaborative review and practical adjustment have become part of its everyday*

routines. Teachers learn from evidence and from one another, while students and families contribute perspectives that help the school assess whether its support is working as intended. This sustained process has made educational improvement a shared responsibility rather than an occasional initiative. Continuous improvement is therefore not separate from teaching and planning; it is part of how the school works and learns as an organisation.

<https://www.ciraschool.com/>

PIECE 8

Chongqing Shuren Jingrui Primary School, China *Guiding School Digital Transformation through Phased Planning and Continuous Improvement*

Shuren Jingrui Primary School was established in 2009 in Shapingba District, Chongqing. Since then, it has continuously explored how ICT can be integrated into teaching and learning. Digital transformation is central to the school's efforts to improve educational practice and support learner development, with priorities adjusted as the its needs and capacities evolve.

Foundations for School-wide Digital Transformation

During the 13th Five-Year Plan period, the school focused on establish the robust digital infrastructure and integrating ICT into daily teaching and learning. It installed a campus-wide gigabit wireless network, created online learning spaces for teachers and students, and introduced mobile learning devices and digital learning resources for regular classroom use. Measures to protect learner health and well-being accompanied this expansion. The school established procedures for managing devices and monitoring students' eyesight, alongside scheduled eye-care activities in the morning, between lessons, at lunchtime, after school and before bed.

Data-Informed Teaching Innovation

During the 14th Five-Year Plan period, the school shifted from expanding technology use to developing data-informed teaching and AI-enabled personalised support. It took a measured approach to AI adoption,

prioritising affordability and ease of use. Working with technology companies, the school co-developed an AI-enabled learning platform and created subject-specific AI assistants informed by its own lesson-planning materials. Digital tools were progressively embedded across the instructional cycle, including lesson planning, classroom teaching, assignments, assessment and follow-up support, as well as school administration. Teachers draw on learning and instructional data to differentiate pre-lesson activities, use flexible grouping as lessons unfold and provide targeted resources for consolidation. This enables learning support to be continually adjusted to each student's progress and needs.

Whole-School Ecosystem for the Integrated Use of DIT

During the 15th Five-Year Plan period, the school plans to adopt a more integrated, whole-school approach to the use of digital technologies and AI. It will further develop data systems spanning student development, teacher professional development, curriculum quality and school governance. The school also plans to create comprehensive digital learner profiles that bring together information on academic progress, physical and mental well-being, interests and strengths, and participation in community activities. Governance arrangements will be strengthened to enable broader stakeholder participation in this process.

<https://www.cqsjrxx.com/>

Pillar V: Home-School-Community Collaboration Anchored in Holistic Development of Student

This pillar address the purposeful use of digital and AI technologies to strengthen home-school-community collaboration to foster inclusive, equitable and quality education for holistic development of learners. Schools should respect all learners from diverse background, and ensure equitable participation and full inclusion, particularly those with special educational needs. Schools should establish a home-school partnership framework based on a clear delineation of roles and responsibilities, grounded in a shared commitment to learners’ holistic development. Schools also should enhance partnerships with civil society, local communities and the private sector and draw on public learning institutions and community learning spaces to expand learning opportunities beyond the classroom. In accordance with established ethical standards, schools should lead or participate in intelligent social experiments, conducting large-scale, long-term observation and interdisciplinary research grounded in empirical evidence to examine how teaching, learning and learner development evolve in the age of AI, and apply the findings to improve the quality of teaching and learning.



PIECE 9

Aga Khan Academy Mombasa, Kenya

Supporting Holistic Development through Digital Connectivity and Community Partnership

The Aga Khan Academy Mombasa is an IB World School in Kenya offering the full IB continuum from Year 1 to university entrance. Alongside academic learning, the school provides coordinated support for students through digital communication, inclusive provision and active partnership among educators, families and the wider community.

Connecting Families with Students’ Learning

The school uses ManageBac and SeeSaw to connect students, families and educators. Students can access and submit assignments, while parents can follow attendance, grades, project deadlines and outstanding work. Online workshops help families organise home learning and support children’s emotional well-being. The Parents’ Association also brings families’ views to the school and mobilises resources for students, including laptops for the Talent Identification Programme. Together, these measures make families active partners in student support.

Providing Inclusive and Personalised Support

The school’s Inclusion Policy addresses barriers associated

with language, culture, socio-economic background and ability. The Junior School Learning Support Unit uses baseline and ongoing data to identify additional needs. Students, teachers and parents then contribute to a Personalised Learning Plan (PLP), which sets out classroom accommodations, support strategies, review timelines and development goals. Financial aid, residential provision, computers, internet access and personal laptops further enable students from disadvantaged backgrounds to participate fully in school life.

Integrating Academic Learning, Well-being and Civic Responsibility

Five Aga Khan Curricular Strands, Ethics, Pluralism, Cultures, Governance and Civil Society, and Economics for Development, are integrated across subjects and school life. Co-curricular learning is organised around Expression, Action and Citizenship, encompassing the arts, sport and sustainable community projects. By linking academic learning with creativity, physical activity and service, the school develops students’ well-being, civic responsibility and leadership.

<https://www.agakhanacademies.org/general/welcome>

PIECE 10

Changsha Leifeng Huizhi Experimental Primary School, China

Passing on the Spirit of Lei Feng through Technology-Empowered Education and Multi-Sector Partnerships

Lei Feng is widely recognised as a symbol of selflessness and service to others in China. His influence extends well beyond his life story. The “*Lei Feng Spirit*” has come to represent dedication to the common good, conscientiousness in everyday work, perseverance and helping others without seeking personal reward. Volunteer service and everyday acts of kindness continue to give contemporary expression to these values.

Located in Lei Feng’s hometown in the Hunan Xiangjiang New Area, Changsha Leifeng Huizhi Experimental Primary School is the school he attended as a child. Its historical connection with Lei Feng and proximity to the Hunan Lei Feng Memorial Hall give the school a distinctive educational role. The school combines digital and AI technologies with partnerships across sectors to bring Lei Feng’s story and the values he represented to life in ways that resonate with younger generations. This provides a contemporary model for making enduring shared values meaningful through education.

Bringing Lei Feng’s Story into Everyday Learning through AI and Digital Media

Digital technology enables the school to connect learning about Lei Feng with the media and creative practices familiar to younger learners. At the centre of this work is an agent called “*Lei Xiaofeng*”, which incorporates the subject into lessons, school activities and community engagement. Students use generative AI in music classes to compose songs inspired by Lei Feng, AI tools in art classes to create visual designs and paper-cutting works, and 3D printing to produce related models. In addition, the digital reading facilities and automated borrowing systems in the school also give students ready access to multimedia resources throughout the school day. These practices allow students to explore, interpret and create, making the subject more accessible and engaging for a new generation.

Connecting School Learning with Community Resources

Multi-sector collaboration allows the school to connect

classroom learning with cultural resources, media production and community-based activities. Classes offered through a youth activity centre prepare students to serve as guides who introduce Lei Feng’s story. The school also works with the neighbouring Hunan Lei Feng Memorial Hall, whose cloud-based VR exhibition enables students to explore museum displays and interact with digital content. With Xiaoxiang Film Studio, the school produced Geng Yazi, a 24-episode short drama series about Lei Feng’s childhood, and developed Growing Up in the Spirit of Lei Feng, a school-based course that relates his experiences to students’ own lives. Online lessons, video platforms and a digital resource library make these materials available both within and beyond the school. Learning about Lei Feng has consequently become a shared endeavour involving the school, families, cultural institutions and community.

Putting Lei Feng’s Values into Practice through Inclusive Digital Education

The school puts Lei Feng’s example into practice by widening access to digital learning for students with different needs and for learners in remote rural communities. Leifeng Primary School is one of the first batch of schools provide inclusive education in classrooms. It serves more than 2,500 students across 64 classes, including four inclusive classes in which learners with and without special educational needs learn together and have equal access to information technology courses involving drones, 3D printing and robotics. Through the Greater Xiangxi Online School Partnership Project and the Smart Education of China Platform, the school works regularly with more than 30 remote rural schools, delivering online lessons, organising collaborative professional learning for teachers, and sharing courses, teaching expertise and digital resources. These initiatives connect schools with families, urban schools with rural schools, mainstream education with special education, and school-based learning with community-based learning, supporting a more inclusive, equitable and open network for learning and student development.

<https://mp.weixin.qq.com/s/PJLOLxSy1q-JS1Nx2Rfx9A>

Glossary of Key Terms for Smart Schools

Clear Vision and Strategic Planning

Pillar IV

Schools define a clear vision, priorities and feasible pathways for digital transformation based on educational aims, existing capacity and available external support.

Cognitive Tools Effectiveness

Pillar I

Digital and AI-enabled cognitive tools are selected and applied in alignment with learning objectives to support learners’ engagement in deeper learning activities.

Continuous Improvement Culture

Pillar IV

Monitoring, feedback and reflection are embedded throughout the school development cycle to continuously refine school planning, governance decisions and technology practices.

Cross-subjects Collaborative Inquiry

Pillar III

Teachers from different disciplines engage in collaborative inquiry around shared instructional problems through knowledge sharing and exchange of practice.

Data-Informed School Management

Pillar IV

Schools use operational and educational data to inform governance decisions, resource allocation and continuous improvement.

Deeper Learning

Pillar I

Learners engage in active inquiry, meaning construction, knowledge integration and transfer, enabling deep understanding and flexible application of knowledge.

Digital Content

Pillar II

High-quality, user-friendly and inclusive digital education content is identified and used in alignment with curriculum standards and textbooks.

Engaged Learner Community

Pillar I

Diverse, active and supportive learner communities are fostered to enable learners to collaborate, communicate and engage in shared inquiry with teachers and learning partners.

Evidence-informed Teaching Practices

Pillar II

Teachers continuously collect and analyse diverse learning data to inform instructional adjustments and ongoing improvement in teaching practice.

Growth-oriented Assessment

Pillar II

Assessment focuses on learners’ individual progress and developmental needs, using diverse evidence of learning and timely feedback to support continued growth.

High-quality Learning Experience

Pillar I

Learners are able to engage in learning with ease, sustained engagement and effectiveness in supportive and well-designed learning environments.

Home-School Team

Pillar V

Schools establish a home-school partnership based on clear roles and responsibilities, sustained communication and coordinated support for learners’ development.

Human-AI Teaming Learning and Teaching

Pillar II

Learners, teachers and AI systems are appropriately allocated according to their respective strengths, enabling collaborative interaction that expands the forms of teaching interaction and learning support.

Inclusion and Equity

Pillar V

Schools respect the diversity of learners and families and ensure equitable participation and full inclusion for learners from different backgrounds and with special educational needs.

Intelligent Social Experiment

Pillar V

Schools lead or participate in intelligent social experiments, conducting long-term and systematic observation to examine how learner learning and development evolve with the use of intelligent technologies, and applying the findings to improve educational practice.

Interdisciplinary Expertise and Knowledge Integration

Pillar III

Teachers understand knowledge and ways of thinking across disciplines and integrate content from different subject areas into interdisciplinary curriculum and instructional design.

Inter-school Collaboration Networks

Pillar V

Schools use digital platforms and collaborative mechanisms to share courses, expertise, resources and professional learning across schools.

Learners Behavior Interpretation

Pillar III

Teachers draw on classroom observations and learning data to identify learners’ learning status and classroom performance and adapt teaching accordingly.

Lifelong Professional Learning Pathways

Pillar III

Stable funding, dedicated time and sustained development opportunities provide institutional support for teachers’ continuous professional learning.

Multi-Stakeholder Decision-Making

Pillar IV

School leaders, teachers, learners and families participate meaningfully in school planning, implementation and evaluation.

Practice-based Experiential Teacher Training

Pillar III

Teacher training is grounded in authentic classroom challenges and practical tasks, enabling teachers to develop digital teaching competence through cycles of practice, reflection and improvement.

Responsible and Ethical Technology Adoption

Pillar IV

Schools responsibly select and adopt digital and AI technologies in line with educational principles, safety and ethical requirements, and actual needs.

Seamless Learning

Pillar I

Learning remains flexible and coherent across different times, spaces and contexts.

Social Desirability

Pillar V

Families, schools and communities develop a shared commitment to learners’ growth and development in the intelligent age.

Trustworthy Learning Space

Pillar II

Schools establish secure, stable and reliable digital and AI-enabled learning environments that provide a trustworthy foundation for technology-supported learning and teaching.



Piecing Together an Ideal Form of the Future School: The Smart School



References

- [1] UNESCO. (2021). Reimagining our futures together: A new social contract for education. UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000379707>
- [2] UNESCO. (2023). Global education monitoring report 2023: Technology in education: A tool on whose terms? UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000385723>
- [3] UNESCO Institute for Information Technologies in Education (IITE), Commonwealth of Learning (COL), Beijing Normal University (BNU). (2024). Global understanding of smart education in the context of digital transformation. UNESCO. <https://iite.unesco.org/wp-content/uploads/2024/10/2024-0920-Final-Global-Understanding-of-Smart-Education-in-the-Context-of-Digital-Transformation.pdf>
- [4] OECD. (2019). OECD Learning Compass 2030. <https://www.oecd.org/en/data/tools/oecd-learning-compass-2030.html>
- [5] Huang, R. H. (2025). Smart education: Pathways toward education 2050 (Abridged ed.). Smart Learning Institute of Beijing Normal University. <https://doi.org/10.6084/m9.figshare.29921666>
- [6] Huang, R. H., Adarkwah, M. A., Liu, M. Y. et al. (2024). Digital Pedagogy for Sustainable Education Transformation: Enhancing Learner-Centred Learning in the Digital Era. *Frontiers of Digital Education*, 1, 279-294. <https://doi.org/10.1007/S44366-024-0031-X>
- [7] Huang, R.H., Tlili, A., Liu, D.J. et al. What is the Science of Learning? a comprehensive review and analysis of the existing definitions. *Smart Learn. Environ.* 12, 66 (2025). <https://doi.org/10.1186/s40561-025-00418-w>



Editors: HUANG Ronghuai, LIU Dejian, XU Lin, LIU Mengyu, WU Yinghui, ZHUANG Rongxia, LIU Jiahao, WANG Huanhuan, ZENG Haijun

Brochure design: WANG Jingyi

To cite this document, please use the following reference:

Huang, R., LIU D., Xu, L., Liu, M., Wu, Y., Zhuang, R., Liu, J., Wang, H., & Zeng, H. (2026, August). Global smart school initiative. Smart Learning Institute of Beijing Normal University.

Image Credits: All images were provided by the featured schools or sourced from their official websites. Copyright remains with the respective rights holders.

Call for Participation

The Global Smart School Initiative invites schools, education authorities, research institutions, organisations and private-sector partners from all regions and educational contexts to:

- Share practices aligned with the Five Pillars of Smart School and engage in peer learning worldwide;
- Participate in smart school assessment, diagnostic review and certification;
- Join a global community of practice on Smart School and contribute practical evidence to shaping the education beyond 2030.

Stay in Touch

To express interest or request further information, please contact:

Global Smart Education Secretariat

Smart Learning Institute of Beijing Normal University, China

Email: smartlearning@bnu.edu.cn

Website: <https://sli.bnu.edu.cn/>



Scan to Contact