



East Asia

Lead for technology

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This regional edition is the result of a partnership of the GEM Report with Beijing Normal University (China), Sophia University (Japan) and the Korean Educational Development Institute (Republic of Korea). It focuses on the role of education leadership for digital transformation in East Asia, a region where some of the world's most ambitious technology reforms are being implemented. The report documents the three countries' major efforts to prepare their local education officers, school principals and teacher leaders so that they can facilitate the effective and equitable roll-out of these reforms.

Digital transformation in education is accelerating in East Asia.

- More than half of schools in China have independent digital management platforms. Japan brought its one-device-per student target under the GIGA school programme forward from 2023 to 2020 because of the COVID-19 pandemic.
- The region is fast adopting artificial intelligence in education. The Republic of Korea is introducing AI-powered textbooks to be fully rolled out by 2028. China aims to introduce AI education in all primary and secondary schools by 2030.

The role of school leaders for digital transformation is gaining attention.

- School principals can facilitate the growth of a digital culture, organize staff capacity development and select resources based on school needs. Their responsibilities are becoming ever more complex, ranging from procurement to cybersecurity and from pedagogy to well-being.
- This is now being recognized in new digital strategies. In China, school principals are being designated as Chief Information Officers. In Japan, the 2023 education digital transformation strategy positions principals as key drivers of digital innovation.

Teacher leaders are being assigned new roles to support the digital transition in classrooms.

- In China, the White Paper on Smart Education 2025 aims to provide teachers with 'new roles and missions'.
- In Japan, key persons, such as 'GIGA Leaders' are driving digital innovation in schools.
- In the Republic of Korea, two to three leading teachers per school are appointed to develop school-specific implementation strategies.

Local, school and teacher leaders need policy coherence, guidance and support.

- Nationwide learning management and assessment systems are significant. China has integrated 32 provincial systems into a unique national Smart Education Platform, organized by education level and track.
- Guidelines and standards on technology are needed to ensure its safe and effective roll-out. Japan recently released guidelines on the use of generative AI in schools.
- Specialist staff are needed to support schools in the digital shift. In the Republic of Korea, digital tutors manage the maintenance of school technology infrastructure.

Leaders need to foster collaboration between levels of governance and within institutions.

- Informal working groups between school leaders help them share experiences. A survey of principals in China found that the preferred training format was peer exchange.
- Local education officers can facilitate collaboration. Qinghai Province in China built partnerships with its more digitally advanced Shanghai, Jiangsu and Zhejiang peers.
- Consultation helps shape future digital education policies that are fit for purpose. Japan and the Republic of Korea consulted teachers in developing their digital strategies.

Leader training programmes are needed to manage the digital transition.

- All three countries require new principals to receive training and have updated teacher competency frameworks to include the use of artificial intelligence.
- Training is also important for system leaders. China and the Republic of Korea have ICT preparation courses for future administrators. In Japan, a survey of 815 municipalities found that negotiation and coordination were critical skills for implementing digital strategies.



The application of digital technology in education is complex. It takes many forms, which are increasingly integrated. A succession of innovations, from devices to artificial intelligence, are transforming the ways administrators manage, teachers instruct, and students learn and interact. The pace of change is unrelenting: boundaries between the physical and virtual worlds are becoming increasingly blurry; people and machines are hyperconnected; and the capacity to store and process data is expanding exponentially. Shielding students from threats to their security and well-being is a top priority, as is the need for all learners to behave responsibly in the digital world.

Digital technology, like other technologies, is the process and result of human efforts to satisfy needs and improve lives. Its growth and the increasing reliance of education systems on it should always ensure learners' interests are centrally placed. Digital technology should not substitute for education based on human interaction but instead support it.

RECOMMENDATION 1: NATIONAL POLICY FRAMEWORKS NEED TO BE CLEAR AND COHERENT

Leaders should have a clear understanding of technology reforms and their objectives. They should be able to work with interoperable and robust monitoring systems, with access to adequate resources.

RECOMMENDATION 2: SCHOOL LEADERS NEED CLEAR GUIDANCE AND OTHER SUPPORT TOOLS

Clear guidance and standards help leaders understand and ensure coherent digital transformation of schools. Well defined responsibilities and sufficient support combined with autonomy can improve school leaders' chances to make a difference.

RECOMMENDATION 3: SYSTEM AND SCHOOL LEADERS NEED TO BE PART OF EDUCATION TECHNOLOGY DECISIONS

The views of those closest to the classroom level need to be solicited and reflected in policy design to ensure that reforms are pedagogically appropriate.

East Asia is a global hotspot for education digitalization. There is strong policy intent for utilizing and expanding technology but all actors – central government, local governments, schools and their communities – need to work together to achieve meaningful and ethical digital transformation.

The role of system, school and teacher leaders is critical for the success of the ambitious reforms underway but may have been underappreciated. These leaders are the conduit to both ensure these reforms are implemented in schools and classrooms as well as to gather and feedback information on the bottlenecks and problems encountered.

The world is looking at the East Asian education experiment with great anticipation. The following recommendations aim to identify steps system and school leaders can take to *lead for technology*.

RECOMMENDATION 4: A COLLABORATIVE MANAGEMENT CULTURE IS NECESSARY FOR SUSTAINABLE CHANGE

Leaders need to foster collaboration within and between schools through communities of practice. Collaboration between schools and parents is also important to address valid concerns about the use of technology. Such practices can promote mutual support and create a sense of school community around a shared objective.

RECOMMENDATION 5: EDUCATION LEADER SELECTION AND TRAINING NEED TO FIT THE PURPOSE OF DIGITAL TRANSFORMATION

The preparedness of education leaders deserves more attention by policymakers. Public policy on education leader selection and training should constantly evolve to match current needs and reflect the latest lessons learned from evidence.

RECOMMENDATION 6: SPECIALIZED STAFF ARE NEEDED TO HELP SCHOOLS AND LOCAL EDUCATION OFFICES

Trained staff can relieve leaders of technical responsibilities and guide system and school leaders in the efficient and effective implementation of digital technology reforms.

Related resources

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- Global Report: *Lead for learning*
- Summary in 13 languages
- PEER country profiles on school leadership
- Regional edition on Central and Eastern Europe, the Caucasus and Central Asia: *Lead for inclusion*
- Regional edition on Latin America: *Lead for democracy*
- Gender edition: *Women lead for learning*

- Regional edition on East Asia: *Lead for technology* (in Chinese, English, Japanese and Korean)

a. Case studies on leadership and technology:

- China
- Japan
- Republic of Korea

b. Background paper on system and school leaders and digital transformation reforms in education

Forthcoming

- Spotlight on instructional leadership in Africa
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