

Keynote Speech: Construction and Evaluation Index System of Smart Campus: Experience and Cases From China

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Abstracts

The global health pandemic has shined a harsh light on the vulnerabilities and challenges humanity faces. Education needs to be rethought in a world of increasing complexity, uncertainty, and fragility. During and after the epidemic, it is necessary to reconsider helping schools to build a smart learning environment to meet the needs of future learning and teaching in schools with no-technology, low-technology and high-technology.

Since 2014, many provinces, cities, counties and schools in China have issued policies such as construction guidelines, evaluation index system, action plan and implementation scheme of smart campus. As early as 2014, Suzhou took the lead in releasing the *Guide to the Construction of Smart Campus Demonstration School*. Under the leadership of provinces and cities such as Jiangsu Province, Chongqing city and Guangdong Province, universities and primary and secondary schools across the country have accelerated the transformation from digital campus to smart campus.

At present, there are five smart campus standards and norms being implemented in China: *Assessment Standard for Green Campus (DB32/T 3160-2016)*, *Smart Campus Overall Framework (GB/T 36342-2018)*, *Specification for Digital Campus Construction in Primary and Secondary Schools (Trial)*, *Specification for Digital Campus of Vocational Colleges*, *Construction Standard of Digital Campus in Colleges and Universities (Trial)*. At the same time, China has implemented Smart Education Demonstration Area Construction Program and "5G + Smart Education" Application Pilot Project, and schools at all levels have set off a new wave of smart campus construction. With the support of smart campus policies, norms and standards, the construction of smart campus has achieved remarkable results. Smart campus has become an important practice field of smart education.

Over the past decade, China has accelerated the transformation from digital campus to smart campus. Colleges, universities, primary and secondary schools have vigorously promoted the construction of smart campus. Smart campus has become a hot topic in the field of smart education. In 2020, known as the first year of 5G and the first year of WiFi 6 popularization, human society has entered the 5G era. The advent of 5G era has brought new challenges and opportunities to the future development of education and accelerated the reconstruction of the new ecology of smart education. Smart campus, as an important practice field of smart education, will usher in a subversive impact. As the foundation of the seventh information revolution, 5G will accelerate the integration of new generation information technologies such as WiFi 6, artificial intelligence, skill Internet, tactile Internet, Internet of things, blockchain and video social networking, so as to promote profound changes in the future development of smart campus.

The development of smart campus in China has experienced campus network (from the early 1990s to 2001), campus informatization (from 2002 to 2005), digital campus (from 2006 to 2011), smart campus (from 2012 to 2018). At present, it is moving towards a new generation of smart campus / OMO (online merge offline) smart campus (after 2019). The new generation of smart campus should not only break through the "information island" and improve the

"smart", but also improve the service quality of smart education, promote the integration of urban and rural education, and promote the balanced and quality development of education.

At the 2018 Central Economic Work Conference, China redefined infrastructure construction and defined 5G, AI, Industrial Internet and Internet of Things (IoT) as new infrastructure construction. In 2020, China clearly defined seven major areas of new infrastructure: 5G, UHV, Intercity High-Speed Railway and Urban Rail Transit, New Energy Vehicle Charging Pile, Big Data Center, AI and Industrial Internet. In July 2021, China's Ministry of education and other six departments issued the *Guiding Opinions on Promoting the Construction of New Educational Infrastructure and Building a High-Quality Education Support System*. The new educational infrastructure includes six key directions: new infrastructure of information network, new infrastructure of platform system, new infrastructure of digital resources, new infrastructure of smart campus, new infrastructure of innovative application and new infrastructure of trusted security. These policies and measures have actively promoted the digital transformation of education and the development of smart campus.

Under the background of the new infrastructure of education, smart campus needs to be redefined. We need to rethink the following issues: The development trend of smart campus in the future; How to apply emerging intelligent technology in smart campus; The organizational form of the future school; Planning and design of smart campus; Enhance the future competitiveness of schools to promote the sharing of high-quality educational resources and prevent a child from falling behind. In recent years, China has formed a variety of cases in the development of policies and standards, solutions, new infrastructure construction, learning and teaching resources, typical applications, management and evaluation of smart campus. For example, the solution of "5G + smart campus" is being adopted by the school, and teachers and students are trying to use 5G technology to promote learning and teaching. These cases and experiences will provide reference and reference for the ongoing project *Recommendation on Technology Architecture of National Smart Campus*.

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