



Education Futures

The digital future of education:

A study of developments in the adoption of digital technologies in China's education sector, and opportunities for international involvement

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About Education Futures

Education Futures is an initiative of British Council. It is a series of in-depth research reports in education to provide insights to UK institutions.

The report series will identify education opportunities linked to a variety of key topics of global policy and commercial interests. The reports would support decision-making allowing the UK to better anticipate and respond to opportunities in specific countries.

*A copy of the full report is available for purchase.
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Executive summary

Introduction and market overview

China's population is becoming wealthier and increasingly urban, driving demand for formal education as well as supplementary learning options. Along with the rise of the Chinese economy, there has been a steady growth of the nation's private education industry, including an increasing number of private universities. The percentage of Chinese citizens with tertiary education grew by 150% from 2000 to 2010. The government wants to improve education and IT infrastructure in order to achieve its goals for the broader economy, which include moving towards higher value-added and creative industries. Yet at present, supply of quality higher education cannot keep up with demand, and at the level of basic education, the key challenges are providing connectivity and adequate human talent to bridge the enormous digital divide. Increased use of digital technology is seen as a major part of the solution.

According to official figures, government spending on education finally reached 4 percent of China's GDP in 2012, 19 years after the target was first set in 1993. Investment in the online education industry is also growing, and an increasing number of Chinese Internet companies are investing in online education and online education platforms.

Encouragingly for prospective investors, foreign involvement is seen as another part of the solution—albeit within certain limits. After all, education and information and communications technology (ICT) are two areas in which the Chinese government has traditionally been sensitive towards allowing outside involvement, owing to its continued attempts to control flows of information.

China's digital education market is estimated to have exceeded Rmb70bn in 2012, representing growth of over 20% year-on-year. Supporting this, the overall education budget expanded to Rmb230bn in 2013. With growing demand going hand-in-hand with increased government support for the education sector, it is worth finding ways to navigate competition and policy obstacles to enter the market.

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Policy support for digital technology in education

In July 2010 the Chinese government launched the National Medium-to Long-term Education Development and Reform Plan (2010-20), promoting the development of digital education in three main areas:

- **Accelerating information infrastructure**
- **Developing quality education resources**
- **Improving school administration data management**

It also set the goal of creating digital learning environments for every student by 2020. Yet the focus of education policy remains on boosting overall education enrolment figures. Interestingly, the government also mentioned opening up the market to foreign investors as a goal in its Reform Plan, as a means to meet its targets.

Digital facilities, such as online education platforms, e-campus and e-libraries, are seen as a key part of expanding access to education. All provinces have been asked to start digital education trials by 2015, and all K-12 (kindergarten up to year 12) schools have been promised broadband connectivity by 2020.



In March 2012 the Ministry of Education published the Education Information Technology 10-Year Development Plan (2011-2020) which outlines a high-level vision for the future of information technology in education. The IT Development Plan aims to improve the level of IT for educational administration, and increase the level of integration between IT and educational development, and is based on these principles:

- **Everyone can enjoy an IT study environment**
- **Establishing a learning-based social system supported by IT platforms**
- **Implementing broadband coverage for all districts and schools**

At the level of basic education, providing the large, relatively deprived rural population with adequate teaching staff and facilities has been one of China's major education challenges. Government funding for distance learning has extended to over 80% of rural schools in central and western China in recent decades. Yet facilities in these regions still lag behind,

with children receiving significantly less government funding for digital education than their counterparts on the east coast. The Reform Plan aims to bridge the digital divide, with ambitious plans to connect every classroom, and every individual, to the Internet.

Although the spread of connectivity and digital technologies is highly desirable, there is a concern that inputs are prioritised over outcomes. Technology's impact is limited if teachers are unable to make best use of it. A more nuanced approach to technology in the classroom is so far only being tried out in certain "key" schools, generally in the most advanced cities in the east. Given that these schools tend to attract the country's best teachers as well as relatively privileged students, and that families are currently helping to fund digital initiatives, a smooth rollout to the rest of the country's schools is not to be expected without significant extra funding and support from the government.

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The *IT Development Plan* is one such government initiative that both encourages the implementation of IT systems nationwide which support the education industry, and also fosters the development of IT talent that will help sustain the education sector.

According to a recent report by Deloitte on China's education sector, online education in China is currently transitioning from version 1.0 (one-way playback video) to version 2.0: a more personalized and collaborative learning environment. Most video production still appears in the traditional format and has not been adapted to a more personalised environment, while video instruction lacks interactivity and therefore the ability to attract a strong user following. A survey from leading U.S. educational publisher McGraw-Hill shows that students interacting and sharing with other students and teachers represents the core value of technology's impact on education, and only through this type of interaction will the quality of education delivery make significant progress. Integration of social media elements is another avenue to consider in order to achieve this goal.

The tertiary sector is better-placed in terms of both financial and human resources to introduce digital technology into campuses. The Ministry of Education (MoE) and other ministries are involved in initiatives to promote resource-sharing and collaboration among universities, a common theme among which is the localisation of research, technology and platforms. There is a political impetus behind the use of domestically developed technology, reflecting mistrust, at the official level, of foreign technology platforms.

E-books and e-libraries are becoming more commonplace at the university level, with Shanghai aiming for all universities to use e-textbooks by 2015. Yet here, as at the level of basic education, the Chinese government is placing most emphasis on introducing technologies, and not enough on reforming modes of delivery to improve outcomes. The demand certainly exists for the latest in education delivery styles—as proven by the numbers of Chinese students overseas—yet

education reform is failing so far to meet this demand.

In summary, China faces two big problems in education: equalising access to good education; and meeting parents' and students' growing demand for a more liberal style of education that can equip students with the skills required for modern and international workplaces. Whilst the government is focusing on the provision of infrastructure and technologies, it is not doing so as part of a more comprehensive education reform, despite its stated aim of developing a more creative workforce.

Domestic players

The largest provider of online formal education is the Open University System of China (OUSC). Altogether, the MoE has accredited 68 online education providers, including single-mode online universities, online colleges run from within conventional universities and other institutions.

MoE approval is required for companies that provide the digital platforms for formally accredited online learning programmes. Three such companies are Open Edutainment, ChinaEdu Corporation and China Cyber Learning.

Outside of the formal sector, a growing number of private online education providers have emerged, with most offering courses in business, English, IT and exam preparation.

Inter-university networking initiatives are developing fast. These tend to be government-led and based on domestic technologies. Examples include the government-led China Education and Research Network (CERNET); the joint government- and university-led Leadership of open-source University Promotion Alliance (LUPA); and the MoE-led Alliance for an Open Platform for Internet Applications Innovation.

Some high schools in China are now providing multimedia digital classroom trials. Domestic providers are so far struggling either to provide a high-end rival to Apple's iPad, or bring down the price of non-counterfeit tablets enough to encourage a wide-scale rollout across Chinese schools. However, Chinese ICT companies are increasingly beginning to compete at the global level, and domestic provision is likely to improve quickly in the coming years.



International players

Notable international successes in China's digital education market include a US course management system (CMS) provider, Blackboard, whose products are used in the majority of Chinese universities and colleges, and the iPad's enormous market share in the tablet sector, boosted by its use in a number of high school classroom tablet trials.

Most universities also have access to virtual classrooms, massive open online courses (MOOCs) and e-libraries, some of which incorporate software from international providers. However, in China's economically underdeveloped regions, there is still a long way to go to ensure that all students can use the Internet to study.

Some foreign companies have faced censorship-related problems when entering or staying in the China market. Examples include Google and Amazon, with its Kindle. Incoming education providers will face the same vetting of content and online access.

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Opportunities for foreign involvement

Owing to regulation of the formal education sector, as well as a tendency to encourage the use of local technologies and products in government-run sectors, outside investors will find it easier to enter less tightly controlled parts of the market. For example, there is still space for newcomers in the thriving private sector catering to the demand for supplementary learning options, particularly if they provide products that are harder for Chinese companies to develop, or introduce best practice in teaching methods from abroad.

However, this is not an absolute rule, and successes by firms such as Blackboard and IBM demonstrate that constructive partnerships can be formed with Chinese universities and schools.

Growth opportunities exist for foreign involvement in areas such as home-schooling and vocational education. Growth in the e-books and digital publishing sector is expected to be rapid in the coming years, and consumers are open to good-quality foreign brands, yet challenges include bringing costs down to make them a realistic aspiration for Chinese schools and parents. Digital note-taking and other cloud-based services are other growth areas, while the enormous popularity of social media in China suggests that sites such as Sina Weibo could be successfully leveraged as education delivery platforms. Children's education software also offers opportunities for growth.

Challenges to market entry

Key challenges for foreign firms include:

- **China's unpredictable regulatory environment**
- **The government's tendency to want to localise important IT R&D and products, partly for economic benefit and partly out of protectionist reasons**
- **Lack of trust: a culture of plagiarism undermines online education**
- **The rapid emergence of Chinese companies as global players and the growing number of counterfeit products will intensify competition at both ends of the market**
- **China's shortage of personnel in terms of both IT and education experience will impede progress in digital education**

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