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How Chinese Higher Education Is Preparing for the Future of Work

A university student in China today might find himself or herself taking a "golden course" that blends practical and academic training. The student earns degree credit while gaining direct exposure to industry. The course might even be sponsored by Alibaba, the online retail giant, or another large firm.

As defined by the education authorities, golden courses must be both pedagogically innovative, with blended and online options heavily favoured, and original in integrating practice-oriented content. The focus is often on imparting various digital skills. The courses are expected to maintain the high academic level typical of university lessons and offer training that prepares graduates for work. The stated goal is to impart future-relevant skills within the context of a traditional higher education degree.

Chinese higher education is responding to the global challenge of rapidly changing labour force needs. Adaptations come thick and fast in China, as the example of golden courses indicates. That example is just one of many. Lessons can be learned for discussions in Europe from China's innovations in higher education.

In this Global Outlook, we highlight a selection of higher education innovations in China. All address the familiar challenge of transforming graduates into productive workers, or more making learning the basis for economic contribution. Core themes here are *flexibility*, *experimentation*, and considerations about *industry-education* connections.

Our focus is deliberately not on central planning or policymaking. The goal is not to summarize a new national plan or speculate on the meanings behind a slogan. A multitude of national initiatives exist; assuming they cohere is misguided. Just as important, many effective initiatives originate far from the Party leadership in Beijing. China is a huge and diverse country, and politics is practically decentralized, even if the shift in recent years has been back toward the centre. Local experimentation has been a mainstay of policy change since the 1980s. A look at a few types of initiatives can shed light on how Chinese education is adapting to current economic and technological conditions.

Factories in schools, schools in factories

Municipal governments have collaborated with universities and industry to test innovations in education. Cities are often close to the effective levers of the political economy. Municipal authorities can connect input from employers to the design of education. In 2023, for example,

a pilot zone in Beijing connected elite universities to technology firms. Under this programme, firms help universities develop training opportunities for students in areas such as AI and the digital economy. Central authorities in 2025 decided that the pilot programme should be expanded nationally with a focus on data-related training.

Another set of initiatives comes under the phrases of "factories in schools" and "schools in factories", names that reflect experimentation in ways of linking work and study. Under these initiatives, students are involved in projects within private companies and learn from the advice of in-field experts. Instead of a university-based instructor setting and delivering educational content, practitioners contribute to course design and teaching while the workplace becomes a classroom. Huawei, for example, runs an ICT Academy in connection with many universities across the country. Tencent also operates training facilities for students in digital technology.

Universities and industry have also come together to create sector-specific consortia. The "National Integrated Circuit Industry-Education Integration Community" is an example. Under this initiative, top universities, including Tsinghua University, work with multiple firms to train students for careers in the integrated circuit sector. This collaboration helps ensure a sufficient number of graduates have the skills industry needs. The idea is that such programmes benefit young people, universities, and employers, while supporting a positive direction for the economy.

These initiatives might be said to fall under national plans for "digital talent" development. The Party leadership sanctions the space in which these initiatives operate. However, private sector actors and education institutions are very much driving these policies within a broader environment that encourages innovation in preparing the workforce for changing employment needs.

Micro majors

A challenge for universities globally has been to relate fixed degree programmes to shifting workforce needs. In China, education institutions have been experimenting with the establishment of numerous "micro majors". As a local twist on the turn to microcredentials, these short courses in skills-oriented subjects complement the more typical majors of undergraduates. A series of three or more courses within a given concentration results in a certificate in that micro major area. Fields such as AI or leadership training are common. The Ministry of Education authorizes these initiatives and offers guidelines for their establishment.

Universities offer micro majors both to their ordinary students and to the wider public. The programmes are administered to serve both groups. Courses run outside of ordinary study and work hours. For students in a standard degree programme, micro major courses have no impact on grades. In this way, students and universities maintain traditional degree programmes while adding a component that

might make graduating students more attractive as employees.

While universities have been the primary overseers and deliverers of micro major programmes, online platforms have also stepped into this space. Among the largest is the state-run Smart Education of China, a platform that offers life-long learning opportunities.

China's micro majors ride a global trend that remakes traditional academic concentrations by encouraging students to combine fields. Students in the social sciences and humanities are encouraged to take practice-oriented courses in an entirely different field. This move also complements a Ministry of Education decision to add two dozen new majors to the list of officially sanctioned degrees. These are largely in areas related to national economic strategies, such as AI, sustainability, and low-altitude engineering.

A full assessment of these initiatives is premature. Official sources are bullish on micro majors as a boost to employment. Rather than solving a public problem, micro majors might well be oriented more toward quick revenue opportunities for universities. Views from employers would be needed to assess the practical value of programmes purporting to be just that, practical. Still, the phenomenon of micro majors is an example of higher education innovation that should be monitored.

Nudging from the centre

A number of intersecting national-level policies have a bearing on the interface between study and work. These include economic plans, talent development initiatives, and other strategic innovation programmes. These programmes can be simultaneously ambitious and, due to their overlaps, less coherent than any single one might appear.

In March 2026, Beijing unveiled its next five-year economic plan. As in the previous plan, innovation and technology feature as points of focus. The country is no longer "catching up" but is now paving the way as a technology leader. This priority has knock-on implications for education: there is central support for ensuring that the education system fosters the skills that the future economy needs.

Earlier, in 2023 and 2024, China's leadership put out the term "new quality productive forces" to capture a shifting focus in economic planning from investment in land and labour to technology, particularly as applied to advanced manufacturing. Anticipating the 2026-30 five-year plan, this phrase indicates a push toward developing new technologies rather than mastering existing ones. For higher education, such a push suggests again that the centre places importance on cultivating a workforce that is prepared to contribute to technological innovation. A great deal of attention has been given to the new phrase, though the arrival of a new term does not necessarily mean a fundamental or effective shift in national direction.

A contextual point to keep in mind is that Chinese administration is not exactly centralized nor decentralized. There are two points of complication. First, there is the "lines and pieces" administrative system in which every local agency reports both "horizontally" to the local government at its scale and "vertically" to the agency in the same field one administrative scale higher. For example, a district education office reports both to the district government and to the municipal education authority. An implication is that effective decision-making is determined through action rather than the formal hierarchy. Reflecting this dynamic, scholarship on China's politics uses terms such as "de facto federalism." Second, each office has two leaders, a chief and a party representative.

Effective leadership moves around. An implication is that lessons in a given policy area, including higher education, can come from many parts of the country.

It is easy to exaggerate policy coherence from Beijing. Rather than giving excessive attention to the sparse wording of a national policy, it can be more useful to understand that high-level pronouncements create space for innovation in other units. The higher education ecosystem, in conjunction with industry, understands there is space to experiment and innovate in ways that align with general or even vague directions from Beijing to make education more suitable to industry's needs.

Talent development initiatives

Beijing has long had "talent" development plans, many of which are oriented to technology. The idea of planning for talent development requires some reflection because of the way that term has tended to be interpreted outside of China.

Much of what is written in European languages about China's talent development programmes frames these initiatives either as threatening to or irrelevant in liberal societies. In part because China's talent development programmes have called for the return of overseas experts back to China, observers have found red flags in such programmes. Western security agencies warn that these programmes are poorly disguised plans to steal innovation and gain an upper hand in battles over control of technology.

Further compounding clouded views of these programmes is the liberal sense that states have no business planning for talent. What individuals choose to pursue in their studies is their own choice, guided perhaps by the market. In China, as a growing middle-income country with a socialist past, state planning for talent development can be perfectly understandable. In the Western world, such planning can be interpreted as the activity of an authoritarian government.

These views are unhelpful for learning from Chinese experience. While industrial espionage challenges can be real and should not be underestimated, a talent recruitment programme is surely much more than a call to engage in nefarious behaviour. Indeed, the journal *Nature* has run an article praising the contributions China's talent initiatives have made to science as a common endeavour.

The idea that national authorities attempt to coordinate workforce development is quite a realistic response to the economic and technological conditions of the day. It is not necessarily conspiratorial nor dictatorial. Given the increasing emphasis globally on nations keeping a hand on their technological dependencies, it is only sensible to think about ways to reshape education to fit with economic reality. Higher education in China demonstrates methods, for good or ill, of grappling with this shared challenge. Policy discussions in Europe can only benefit from serious, open-minded, critical, and translation-oriented reflection on these methods.

Take-away points

The following points are especially relevant in Sweden and Europe for decision-makers in higher education and industry:

- Permit or encourage experimentation in education institutions. Such experimenting has been at the heart of growth in the world's most impressive economy of the past few decades. Identifying ways to permit experimentation within existing legal frameworks is a good challenge for Swedish higher education.

- Revisit questions about the relationship between private enterprise and higher education. Sweden has a proud tradition of public higher education; this tradition buttresses the independence of scholarship. Nonetheless, examples from China point to the potential significance of thinking creatively about feedback mechanisms between corporations and universities. Besides, in Sweden, industry-academia cooperation is crucial in research in universities. While not losing sight of the core principles of higher education, space for experimentation could help universities and industry.

- Examine ways that the education, industry, and labour authorities can formulate expectations for the future workforce and what preparations it might require.

- Resist simplistic interpretations of initiatives from China. We can expect further innovation in China to challenges faced in Europe as well. Watch them. Reading those innovations with an open mind, unconstrained by caricatures and attuned to context, can help distil further lessons.

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