

Competence for Students' Future: Curriculum Change and Policy Redesign in China

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Abstract

Purpose: This article aims to provide a policy review of the new national curriculum program and standards for high school education announced in January 2018 and analyze the key features of curriculum change in China.

Design/Approach/Methods: Applying textual analysis, this article interprets the significant changes in the national curriculum program and standards and further discusses these changes based on literature and research on curriculum.

Findings: Corresponding to the international trends on core competencies, China takes a further step and designs subject core competencies to narrow the gap between theories, policy, and practice. The new national curriculum highlights the coherent design in curriculum, textbooks, teaching, and assessment. Yet there are still puzzles and challenges in high stakes examination, diverse contexts, and curriculum implementation.

Originality/Value: This article might facilitate the understanding of the current high school curriculum in China, especially on its features, changes, contexts, and history.

Keywords

China, core competencies, curriculum reform, education, policy

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Table 1. Credits and subjects of general high school education in China.

Subjects	Required credits	Required elective credits	Elective credits
Chinese	8	0–6	0–6
Mathematics	8	0–6	0–6
Foreign language	6	0–8	0–6
Ideology and politics	6	0–6	0–4
History	4	0–6	0–4
Geography	4	0–6	0–4
Physics	6	0–6	0–4
Chemistry	4	0–6	0–4
Biology	4	0–6	0–4
(Information and general) technology	6	0–18	0–4
Arts (music/fine arts)	6	0–18	0–4
Physical education and health	12	0–18	0–4
Comprehensive practical activities	14		
School-based curriculum			≥8
Total	88	≥42	≥14

Changing the curriculum has been viewed and used as an effective way to change classroom practice and to influence student learning to meet the needs of the ever-changing world (Cai & Ni, 2011). Curriculum programs and standards in China serve as both professional and administrative guidelines for the design of textbooks and learning materials and for teaching, learning, and assessment. On a rolling basis, the Ministry of Education of the People's Republic of China (MOE) revised the national curriculum to meet contemporary and future needs. This article aims to provide a policy review of the new curriculum program and standards for high school education announced in January 2018 and their systematic design and interpret with some subject examples. Initiated in 2013, the new curriculum program and standards, signing a move from a *suzhi* (素质)-based (quality-based) to a *suyang* (素养)-based (competency-based) curriculum, will involve more than 20 million high school students via their school education and the *Gaokao* (高考, National Higher Education Entrance Examination). This is a whole redesign and reframing of China's high school curriculum. In short, fewer credits are needed to graduate, and there are now more course categories and elective courses and refined subject goals and contents (see Table 1).

Continuing the compulsory education at the primary and middle school levels, high school education is defined as “basic education that serves to and improves the quality of the public” (MOE, 2018a, p. 1). General high schools usually have an attendance duration of 3 years, each of which has 40 weeks for instruction, 1 week for practicum, and 11 weeks for vacation. In a regular

week, students have 35 classes (45 min per class) and every 18 classes count together as one credit. To serve for various graduation and admission purposes, the 14 high school curricula are categorized as required, required elective, and elective courses. These categories, respectively, address the requirements of graduation, *Gaokao*, and independent recruitment from top universities. As indicated in Table 1, students need to take at least 144 credits of required and required elective courses to graduate and (or) attend the *Gaokao*. Students may also take elective courses to apply for universities that allow autonomous admission.

The idea of core competencies

The key strategy to redesign the curriculum is the idea of core competencies. Joining the global trends of competencies in education such as used by the Organisation for Economic Co-operation and Development and countries such as Finland, Australia, and the U.S., China's ambition is to educate and prepare individuals for future and probably unknown life and work. There has been an evolution of educational goals in the last 20 years from *shuangji* (双基, "double fundamentals," that is, fundamental knowledge and skills) to *suzhi* (qualities), and then to the current goal of *suyang* (competencies). The curriculum goal was framed as a *suzhi* education (often translated as "quality" education, Dello-Iacovo, 2009) in the last round of curriculum reform. This term was intended to incorporate students' moral, intellectual, physical, and aesthetic education (MOE, 2001; Wang, 2012). It was an upgrade from *shuangji* ("double fundamentals"). Specific changes included adding the goals of helping students learn how to learn; cultivating information processing, knowledge acquisition, problem-solving, and cooperative learning abilities; and developing essential knowledge and skills in relation to lifelong learning (Cui, 2001; Feng, 2006; Guo, 2012).

The new idea of *suyang* (competencies) reorients the learning from content to outcome and textbooks and standards to the ultimate function of education (Zhong & Cui, 2018). China defines *suyang* as the key competencies, characters, and values that individuals show when they apply knowledge and skills to deal with complex situations. Cui (2016a) illustrated this idea using a metaphor of good drivers: to be a good driver, one needs knowledge of traffic laws and road signs, the skills of driving, turning, and stopping, and most importantly, characters and values to instill in the individual respect for rules and for life. As the artificial intelligence replaces human in many areas, education needs to rethink what kind of competencies human should possess. For the self-driving car to eventually remove humans from the agency of regular driving, the most crucial challenge automated driving systems face is to deal with complicated driving incidents and conflicts. What keeps human necessary in driving is not just driving knowledge or skills but conscience and humanity.



Figure 1. China's core competencies framework.

China's core competencies framework includes three "dimensions," six "modules," and 18 "items." As indicated in Figure 1, to develop a whole person, we have three dimensions of autonomous development, civic participation, and cultural foundation, and six modules: learning to learn, healthy living, assuming responsibility, innovation and practice, humanistic understanding, and scientific spirit. The module of humanistic understanding, for instance, consists of "human culture, human passions, and human aesthetics."

A further step: Subject core competencies

To answer the question of how to educate to achieve these overarching goals, a further step is to design more operational subject core competencies. This step also aims to narrow the enduring gap between educational goals and enacted curriculum in practice, a gap which occurs not just in China but also in many other countries in the world. China's use of subject core competencies tends to lead to further exploration and implementation than in many other countries designing only the overarching core competencies. Subject core competencies, by definition, are the positive values, crucial characters, and key skills that students acquire in learning each subject (Zhong & Cui, 2018). The core competencies of each subject vary according to its nature from three to six. The subject of Chinese, for example, has four core competencies: language construction and application, cultural inheritance and understanding, aesthetic appreciation and creation, and development and advancement of thoughts (see Figure 2). Mathematics has six subject-based core competencies: mathematical calculation, mathematical abstraction, logical reasoning, intuitive imagination, mathematical modeling, and data analysis (see Figure 3). Note that subject core competencies and

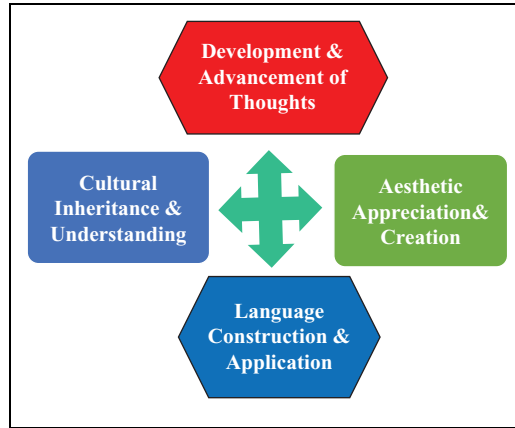


Figure 2. Core competencies for Chinese.

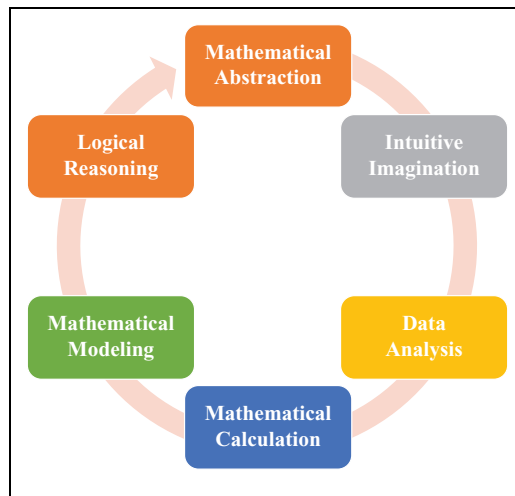


Figure 3. Core competencies for Mathematics.

overarching core competencies are connected and coherent so that different subjects can be integrated and used together to cultivate the common core competencies.

Subject core competencies further clarify the direction and goal of subject teaching and assessment and guide teaching practice. The latest round of curriculum reform legitimates the “three-dimensional goals” (knowledge and skills, process and method, and affection, attitudes, and values) and brings decisive change in the quality and nature of classroom practice in China (Jin, 2012; Ni & Cai, 2011; Ni, Li, Li, & Zhang, 2011). The subject core competencies are considered a cognitive upgrade from the three-dimensional goals with further integration and improvement (Zhong & Cui, 2018). Defining the goal of each subject identifies and clarifies the value and role

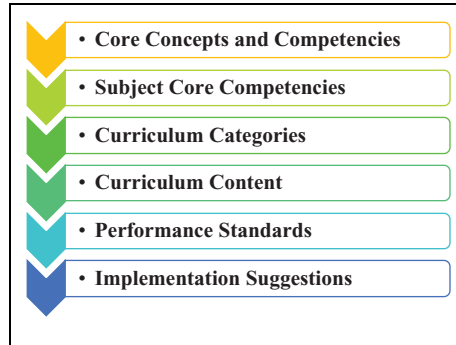


Figure 4. Coherent design in core competencies, teaching, learning, and assessment.

of each subject. These identifications and clarifications allow teachers and researchers to legitimate and professionalize their subject discourse. In return, educational administrations and departments can develop more reliable and responsive accountability systems for each subject.

Coherent design in textbooks, teaching, and assessment

As Fullan (2016) noted, a whole-system plan is required for successful and sustained educational change. Ambitious as it was to cover the centralized national educational system of the largest school population, a systematic plan and coordinated support programs were set in place when the last round of curriculum reform in China started (Gao & Wang, 2014; Marton, 2006; Tan, 2015). Besides new curriculum standards, textbooks, and teaching materials, rounds of training at the national and local levels were arranged (Paine & Fang, 2006; Qian, Walker, & Li, 2017). Following the same tradition, the big idea of core competencies guides the systematic design of curriculum goal, textbooks, teaching, and assessment (see Figure 4).

An area of ongoing work is the perpetuation of subject core competencies in the country's textbooks and learning materials. Textbooks, as the dominant source of the national curriculum in China, will be subject to reframing and reorganization according to subject core competencies in the next few years. Since September of 2017, the textbooks for Chinese, history, and ideological and political education (names vary in different grades) in compulsory education are designed, edited, and reviewed by the National Commission of School Textbooks (affiliated with MOE). The same mechanism will be applied to textbooks of these three subjects in high school education. For other subjects, too, both national and local publication agencies in different provinces will need to redesign their textbooks to ensure coherence with the overarching and subject core competencies.

Curriculum standards for each subject list the curriculum content as required, required elective, or elective. Learning themes and units are suggested. For instance, through all course categories in mathematics, students learn content themes including functions, geometry and algebra, probability

and statistics, and mathematical modeling and inquiry activities (MOE, 2018d, p. 9). Each theme has detailed learning units, such as units of “concept and features of functions,” “powers, exponents, and logarithmic functions,” “trigonometric functions,” and “the application of functions” within the “functions” theme. Each unit then has a brief introduction and interpretations of the learning content. Within the required course category, the subject of Chinese includes learning themes of “reading and discussing the whole book,” “participating in the discussion of contemporary culture,” “multimedia reading and communication,” “language accumulation, arrangement, and inquiry,” “literature reading and writing,” “critical reading and expression,” and “practical reading and communication” (MOE, 2018b, p. 10). Chinese traditions and the concepts of revolution and socialism are also infused into these themes. Learning themes in the categories of required elective and elective courses may vary slightly yet still center on these themes.

A new section in the curriculum standard is the learning performance levels that comprehensively reflect students’ subject core competencies and performance after learning each subject. This provides guidance for autonomous learning and self-assessment, teaching and assessment, and textbook and exam design (MOE, 2018d). Each subject has specific definitions and performance level descriptions. The subject of mathematics describes three levels of performance via the constructs of “context and questions,” “knowledge and skills,” “minds and expression,” and “communication and reflection” (MOE, 2018d). In comparison, the subject of Chinese defines five levels in learning performance via four constructs corresponding to the four subject core competencies for mathematics. Standards and descriptions of learning performance are intended to be coherent and be supported by the core competencies framework and curriculum content. Teaching suggestions are also given. These sections together form a linear and coherent system of core concepts and competencies, subject-based core competencies, curriculum categories, curriculum content, performance standards, and implementation suggestions.

Prior experience and remaining puzzles and challenges

Although dawn is just breaking in this new round of curriculum reform, there remains a need to look back to the last round of curriculum reform for experience and lessons. After two decades of changes in curriculum and instruction, China’s schooling evolved in a systematic yet discursive fashion in aspects of discourse, best practice, and assessment system. China’s education system as measured by recent PISA tests has also become the subject of attention and praise. As evidenced by longitudinal and individual studies (Jin, 2012; Ni & Cai, 2011; Ni et al., 2011), the last round of curriculum reform has already had positive effects on the quality and nature of classroom practice in China. Analyzing official policies and previous curriculum standards, there were changes, attempted at the policy level, in advancing human capital through education and allowing more autonomy in local control (Law, 2014). Along with the policy regulations, new and diversified

discourse systems emerged around *suzhi*, with key concepts such as student-centered, autonomy, collaboration, innovation (Kipnis, 2007; Murphy, 2004). New changes in policies also brought more standard definitions of teacher quality and common forms of accountability (Paine & Fang, 2006). Institutional effort has also been made to ascertain the accountability of teachers by developing a national system to evaluate students' academic achievement (Xin, 2016) and the quality of curriculum implementation (Cui, 2017). On the other side, it is also true that there are still challenges and practices unchanged by the reforms. These challenges will likely remain while new challenges are slowly revealed.

Coherent and reciprocal relations with the Gaokao. One of the major barriers identified to thwart changes is China's high-stakes examinations (Jin, 2012). Assessments and exams in the schools, graduation exams, and National Higher Education Entrance Examination (*Gaokao*) are all required to refer to curriculum programs, curriculum standards, and related policies on teaching (MOE, 2018a). The wording of the policies makes clear that these curriculum and performance standards are meant to assist with teaching, learning, and assessment. Nevertheless, specific measurable items, variables, and related metrics are missing for students and teachers to understand how well students learned and where they are regarding each competency. This type of clear assessment metric is particularly important in countries with high-stakes examinations. Both teachers and students want to make sure these competencies are applicable in teaching and eventually measurable in the exams. Yet it is often the case that exam design is not coherent with school learning, particularly for high-stakes examinations like the *Gaokao*.

When the examination is so important, it is short-term interests rather than long-term benefit which competencies-based curricular promotes. Shanghai and Zhejiang province started to pilot a new *Gaokao* in 2017. One salient feature of this new *Gaokao* is greater flexibility and options offered to the students by allowing them to freely choose two or three from six subjects as exam subjects, besides the three required subjects of Chinese, mathematics, and English. That is different from the dominant model of "3+X" in which students choose either a social science package of history, geography, and politics or a natural science package of physics, chemistry, and biology. That is to say, students may choose their own combination such as history plus chemistry so that they might be admitted to related majors in the universities. However, this well-intentioned freedom has led to huge controversies in the examination. It was found that the number of students choosing Physics in the *Gaokao* dropped from 160,000 in 2011 to 90,000 in 2017 in Zhejiang province (Zhu, 2017). A major reason students cited was the difficulty of learning and taking exams in physics. In another word, students or their parents tend to choose the most profitable package when the stakes are high. As for students and parents, there seems to be a dilemma between competencies-based education and exam-preparation education. Parents, students, and even some educators think

students could wait until university education to develop the more vague and long-term competencies, as if it is a zero-sum mechanism in which effort and time spent on competencies-based education compromise students' potential academic performance. The competencies-based curriculum still has a long way to go before it can solve this dilemma in both theory and practice.

Core competencies in a huge country with unbalanced resources. China's massive and ambitious curriculum reform has indeed brought significant and decisive changes. Yet the traditional curriculum, doctrinal teaching practice, and huge performance gaps remain in school districts and classrooms across the vast country. A large-scale survey on curriculum and instruction (Cui, 2016b) showed that rural middle schools have poorer performance than urban ones in almost every schooling index, including school curriculum leadership, curriculum planning, teacher engagement, student learning quality, opportunities for learning, social relationships, family support and intervention, and learning outcomes. These differences exist not only among different schools in rural or urban areas but also among different classes within the same school. This survey also corroborates empirical studies that show unequal distribution of teaching expertise, professional support, and training opportunities contributes to further scaling-up, especially for weaker schools, schools in less developed areas, and schools for disadvantaged students (Jin, 2012; Peng et al., 2014). Balancing the tensions between urban and rural schools or among classrooms within a school with respect to resource allocation, teacher capacity, opportunities for learning, classroom teaching, teacher–student relationships, and family–school relationships with equity and no loss of quality is the major challenge that China's governmental entities at various levels face in curriculum reforms and development in K–12 education.

The challenges of core values implementation. The preface of the curriculum program notes that the fundamental mission of Education is to *Lide Shuren* (立德树人, “develop morality and cultivate humanity”). The connotation of this phrase carries both traditional and contemporary expectations of nobility in China. The underlying principle is the key role of values that transcend knowledge, skills, capabilities, and affections within the greater overarching idea of core competencies (Cui, 2016a). That is to say, the key role of education is to cultivate human beings who value family, community, society, and the nation. In the context of China, this is framed as

Forming positive worldview, outlook on life, and values; loving the motherland and supporting the Chinese Communist Party; fostering the fine traditional Chinese culture, inheriting the revolutionary culture, and developing the advanced socialist culture; cultivating and practicing the core socialist values. (MOE, 2018a, p. 2)

This statement corresponds to the characteristics of the Chinese socialist system but also parallels ongoing puzzles of citizenship education in many other countries. In an era of neoliberalism and

globalism, cultivating citizens for society is a hard job. Citizens often have weak national allegiance and infrequent civic participation (Banks, 2017). To address this issue, the *Ideological and Political Education* curriculum standard proposes activities- and issues-based civic education along with practice (MOE, 2018c), providing as examples issues such as “The Value of School Mottoes,” “Rational Choices in the Era of Internet+,” and “Assessment and Suggestions for Solving Traffic Congestion.” Yet the challenge of the implementation of core socialist values is getting harder as China promulgates civic values via Marxist/socialist ideological management (Wang & Longoria, 2016). Some of the challenges of traditional citizenship education systems are common issues of democracy, equality, and human rights and also conversations with other countries.

Summary

The Chinese government periodically changes its curricula to meet current and anticipated future needs as the world is becoming more globalized and diverse, and information and technology will probably soon replace human beings in many jobs. As the Ministry of Education announced the curriculum programs and standards in early 2018, work for compulsory education was initiated in early 2019. This new round of curriculum changes is based on core competencies and aims to prepare students to deal with authentic problems. The core feature of China’s experience is coherent design and linear implementation. The bigger idea of core competencies and more focused subject-based core competencies are China’s attempt to implement its standards in all aspects of teaching, learning, and assessment in daily practice.

As China did in its last round of massive curriculum reform, China tends to bring promised changes in intentional, coordinated, responsive, and systematic “Chinese” ways. Curriculum reform opens up a new institutional context to welcome, reward, and support changes. An accelerated framework to bring on changes and diversified teaching practice are being imposed on teachers. It is tempting to view the new environment and imperatives as having provided opportunities to change, but these are usually fragmented and perfunctory changes. Meanwhile, the top-down system and coordination, in the Chinese case, are a double-edged sword (Yuan, 2017). Disruptive changes and challenges in curriculum, learning, and schooling remain to be initiated, questioned, emerged, and scaled up in China.

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