Curriculum Reform and School Innovation in China
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Yunhuo Cui
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School-Based Curriculum in China

Conceptions and Practices to Unleash School Vitality

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Part I
Contextualization and Conceptualization

Chapter 1
Establishing School Curriculum Administration in China

Yunhuo Cui and Hao Lei

For whom does the curriculum exist? To whom does it benefit? Administrators, headmasters, teachers, or children? Who develops the curriculum for children? By curriculum experts, administrators, headmasters, teachers, or students and their parents? Is it formed unilaterally or through negotiation? Do parents have the right to know the school curriculum, and to suggest changes or to evaluate? Such questions are boiled down to how curriculum power should be distributed among the national government, local jurisdictions, schools, and other stakeholders, which has also driven the reform of school curriculum administrative system in primary and high schools in China. From Chinese experiences, a curriculum administration system is designed to formally delegate rights and obligations of curriculum design, implementation, and evaluation among different administrative levels, while in process such a system is built on the level-across role mediation through compromising and consensus-seeking.

China has long implemented a highly centralized curriculum administrative system. After the mid-1980s, in line with the *Compulsory Education Law of the People's Republic of China*, a unified basic education system was established, in which schools were run by local governments, under the centralized coordination of the central government through the National Council. However, in 1988 a curriculum policy named "multiple textbooks under one syllabus" (一纲多本) disrupted this highly unified system. Afterwards, a curriculum administrative system was experimented after the mid of 1990s. In 1996, the Ministry of Education in China officially announced to establish a three-level curriculum administrative system for senior high schools in a trial national curriculum plan. The three levels comprise the national, local, and school curriculum. Local curriculum at that time was defined

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within the provincial-level, rather than village-, town-, or subdistricts-level, educational administration departments. It was not until 2001 that the national–local–school three-level curriculum administration system ingrained in the Chinese context was formally established and practiced across China.

1.1 Curriculum Administration

1.1.1 Chinese and International Conceptualizations

Education administration is a critical part of national administration. The government's educational administration departments lead and manage the national education system. In China, curriculum administration refers to the national government's adjustment and control of the education system according to the law as well as the educational administration's execution of curriculum-related functions and responsibilities (Xiao, 2004). The educational administrations' curriculum-related responsibilities include curriculum policy formulation, curriculum standards development, and supervision of curriculum implementation (Han, 2015). Thus, scholars' conception of curriculum administration has been limited to school curriculum administration. However, the concept of curriculum administration should be understood to extend beyond school curriculum administration.

Sun (2001) described three conceptions of curriculum administration. Firstly, curriculum administration refers to the planning, guidance, decision-making, supervision, coordination, and other management measures. The personnel who perform these measures are members of administrative departments responsible for all aspects of curriculum administration, including management of the objectives, development, and implementation of curriculum. Secondly, curriculum administration is a crucial part of school management and involves systematic coordination between the management of organizations and human physical conditions. Curriculum administration is a general term for various related actions performed to realize education objectives. These actions involve the development, implementation, and evaluation of curriculum. Thirdly, all levels of educational administration departments and school administration organizations should share the critical responsibilities of curriculum administration. These responsibilities include formulating and implementing school curriculum design, guiding and monitoring school curriculum implementation, and leading and organizing school curriculum evaluation. The first two of these conceptions restrict curriculum administration to school curriculum management, and the third fails to differentiate between curriculum management and curriculum administration.

Chen (2001) defines curriculum administration as the determination and management of teaching programs (curriculum plans), syllabus (curriculum standards), and textbooks by an educational administration. This definition explains part of curriculum administration, but does not clarify the difference between educational administration and curriculum administration.

Globally, curriculum administration is understood as follows. Firstly, curriculum administration refers to curriculum development. Haft and Hopmann (1990) reported that curriculum administration is curriculum development by analyzing the history of curriculum administration from the nineteenth to the twentieth century from the perspective of curriculum development cases. Secondly some scholars believe that independent and responsible behavior of administrative personnel is necessary to ensure the development, coordination, implementation, support, evaluation, and adjustment of curricula (Lattuca & Stark, 2011). According to these scholars, curriculum administration involves three main aspects. First, teachers and administrators jointly develop, implement, and adjust the curriculum and guide students. Second, administrators create an educational environment. Third, administrators lead large-scale and transferable curriculum reform (Lattuca & Stark, 2011). These analyses show that international researchers understand curriculum administration mainly from the micro perspective. Consequently, a satisfactory theory of curriculum administration has not yet been developed.

Hence, curriculum administration research requires further development. For research convenience, hereafter, curriculum administration is defined as measures that an educational administration department implements related to curriculum construction, development, and improvement. This not only includes the formulation of national curriculum policies but also schools' curriculum management and other policies.

1.1.2 Three Classical Models of Curriculum Administration

People who decide upon the contents of a curriculum are within the scope of curriculum administration. Internationally, curriculum administration can be divided into three classic models. The first model is the national standard curriculum. In France, since the Napoleonic period, the central government has stipulated the nationally unified basic education curriculum of France based on a set of essential documents, referred to as "national standard curriculum" (also known as centralism). Before the October Revolution (1917), Russia also implemented a centralized and unified "national standard curriculum," following France's example. The second mode is the local standard curriculum. For instance, the United States has always implemented a decentralized administrative management system whereby states use various administration methods. Moreover, within each state, curriculum provisions of various school districts also differ. This system represents a "local standard curriculum" model (also known as decentralization). The third mode is school-based curriculum. For instance, the United Kingdom government maintains responsibility for syllabi, standardized tests, and educational supervision, but does not interfere in school curriculum, which schools determine independently.

These represent categorizations of the curriculum administrative systems of various countries according to the general view of curriculum. Curriculum can be divided into four levels, namely curriculum plan (teaching plan), curriculum

standard (syllabus), teaching books (textbooks), and curriculum implementation (teaching). Thus, the national administrative power of various countries depends on the level at which the administrators are involved.

France pioneered implementation of a national standard curriculum, where the central government issued mandatory teaching plans. In the early 1900s, schools were granted the power to choose textbooks independently (Estivalèzes, 2011). However, the textbooks had to be used to meet the teaching requirements of government syllabi; therefore, the freedom involved in textbook choice was limited. Teachers organized classes based on the topics in the syllabus, rather than primarily on the topics or structure of the textbook. These measures allowed for some teaching autonomy within the national standard curriculum framework, and to some extent, relieved the conflict between centralized policies and effective teaching.

In contrast to France's system, Russia's central educational administrative department stipulated mandatory, uniform teaching plans, syllabi, and textbooks. Thus, this past system in Russia is an example of a classic national standard curriculum. The Russian syllabi differed from the French syllabi. Russian syllabi comprised "introductions" and "text." The text of each syllabus stipulated the volume, chapter, section, contents, and title of the subject textbook, and guidelines for teachers with regard to the basic concepts, normative formulation of the ideas, teaching time distribution, assignments, and suggested teaching methods and instruments. Government syllabi comprised not only the legal standards for textbook contents but also the criterion to evaluate teaching. Schools could only permit teaching based on textbooks.

As for the local standard curriculum in the United States, education departments of all states only stipulate general curriculum requirements, such as the timetable for daily reading teaching for lower grades, credits per discipline required for middle school students to graduate, and standards for minimum ability tests according to grade level. Therefore, school districts and schools have considerable decision-making power with regard to the specific topics taught within state-required subjects and choice of supplemental subjects, and schools' independent curriculum formulation is a critical factor in curriculum administration (Schmidt, Wang, & McKnight, 2005).

In the United Kingdom, school curriculum was not explicitly covered in the *Education Act 1944* (Cook, 1999). After World War II, the central government seemed to hold the power to manage curriculum, but failed. Local education authorities were unwilling to manage curriculum, and thus, they transferred the power to the schools. Finally, curriculum became the "private affair" of school teachers, and the school-based curriculum was formed.

Under various curriculum systems, operating mechanisms of curriculum activities differ. Russia implemented a typical centralized mechanism, whereas the United Kingdom has consistently implemented a free mechanism. Thus, a national standard curriculum is not the only curriculum administration model; a school-based curriculum is also an option. The centralized and free mechanism each presents advantages and disadvantages.

In the centralized mechanism, the government strictly controls curriculum implementation. National-level administration is paramount, and low-level administrators and teachers implement national standards in local districts and schools with weak concepts of specification. This model is conducive to standardized curriculum implementation, but it inhibits schools and teachers from instituting curriculum choices according to the practical situation of the local district and students. By contrast, under the free mechanism, schools and teachers hold the power to determine local school curricula based on the particular situation of their district and the wishes of students' parents. This model enables development of locale-specific and nonstandard school curriculum and decentralizes the administration of the basic education curriculum.

Curriculum administrative systems of various countries can generally be divided into the centralized and free mechanisms, and historically, these models appear to be polar opposites. However, administrative power distribution across the various curriculum levels differs, and no country follows a curriculum management system that is absolutely centralized or absolutely decentralized. Therefore, examination of a country's curriculum management system requires analyses of all levels. In research on China's situation, the management system resulting from the balance of power between the central and local governments is regarded as a separate system in which elements of both centralization and decentralization are present. The administrative levels involved in the determination of curriculum are the central government, local governments, and schools, and the nature of a system can be judged according to the distribution of curriculum decision-making power among the various administrative levels.

1.1.3 Trends in Curriculum Administration Development

The three models of curriculum administrative systems reflect the particular choices of countries with regard to the distribution and direction of curriculum-related responsibilities at various levels of administration, and each system presents advantages and disadvantages. However, this conception remains insufficient. For example, the "disciplinary structure movement," which was initiated in the United States in the 1960s and spread globally, practiced national curriculum on a large-scale. The system featured a top-down model and university experts developed the unified curriculum. However, the movement failed; the school-based curriculum was much favored. Therefore, the international curriculum research community started to conduct an in-depth study of the distribution of curriculum-related decision-making power, the curriculum development model, and other problems the movement faced.

As a result, since the 1970s, the curriculum management system in many countries has developed toward more even distribution of power. Reformers realized that rigid management under the centralized curriculum administrative system inhibited innovation and flexibility, and they started transferring curriculum-related decision-making power to local governments and schools. Japan and France with centralist

traditions began to redistribute curriculum-related administrative power. However, when loose management and uneven development under the new curriculum administrative system was discovered, central governments reclaimed the decision-making power that they deemed had been excessively entrusted to local governments and schools. Thus, the central governments attempted to ensure the realization of the national curriculum design ideal. By contrast, the United States, the United Kingdom, and Australia with decentralized traditions began to reflect on the disadvantages of excessively decentralized curriculum administration, and proposed national curricula, national curriculum standards, and criterion-reference tests. Hence, both countries with centralized curriculum administrative systems and those with decentralized curriculum administrative systems adjusted toward the opposites of their traditions to reform curriculum-related power distribution. Through these reforms, countries on both ends of the spectrum transitioned toward democratic participation in curriculum development, breaking original development and management models of extreme concentration of administrative power. Therefore, in China, a management framework featuring both centralized and decentralized curriculum-related administrative power is consistent with historical trends in national and democratic curriculum development.

1.2 Evolution of Curriculum Administration in China

In the previous section, three classic international curriculum administration types and curriculum administration development trends were analyzed. Hence, China's curriculum administration can be depicted as a system undergoing a transition from centralization to sharing.

1.2.1 1949–2001: Excessively Centralized Curriculum Administration

With the founding of China as the People's Republic, political independence required the re-establishment of the education administration system. However, because of international blockade, the Chinese government could only propose a guiding policy of "establishing a new democratic education system based on the new education experience of the liberated areas, absorbing the useful experience from the old education system, and borrowing from Soviet experience"(He, 1998). In 1950, *Provisional Regulations on the Teaching of Middle Schools (Draft)* was issued by the Ministry of Education. Although it was a provisional document with numerous deficiencies, it was critical in the function of China's education administration system. In 1951, China enjoyed a friendly relationship with the Soviet Union. Chinese government officials learnt after the Soviet Union in all respects, including

education. Based on their study of the Soviets, Chinese policymakers abolished the "6-3-3" school system (6 years in primary school and 3 years each in junior and senior high school), which included both compulsory and optional, uniform and local courses. The Government Administration Council then issued the *Decision on Reforming School System*. In this system, the "4-2" system for primary school was replaced with the "5-year consistent system," and the duration of middle school remained 6 years—3 years each for junior and senior high school. However, because this new system appeared to shorten the time for talent development, the "6-3-3" school system was restored 2 years later.

In March 1952, the Government Administration Council issued *Provisional Regulations on Primary Schools* and *Provisional Regulations on Middle Schools*. These measures established the primary and middle school curriculum framework, mainly involving curriculum mode, teaching plan, and syllabus. This curriculum framework was implemented nationwide, and the two documents stipulated centralized curriculum administration for primary and middle schools. The national government held the power to make curriculum-related decisions, and local administrations formulated measures for curriculum implementation and faithful execution of central education department policies. All standardized courses were required, and uniform teaching methods were implemented nationally. Thus, the flexibility for students to explore within the curriculum was compressed. People's Education Press was established in 1950 to compile the nationally uniform textbooks. In 1951, the national textbooks for primary and secondary schools were published. In September 1955, the *Primary School Teaching Plan* was issued; this plan proposed enhancing labor education and physical training. However, the labor education curriculum was not set until the issuance of the *Table of Teaching Hours for Secondary Schools* in 1956–1957. The *Instructions on Educational Work*, issued in 1958, established that the purpose of educational policies was serving proletarian politics, and the purpose of education was developing literate workers with a socialist consciousness (Zhang, 1984). This highly centralized system of curriculum administration was then implemented and maintained with some small adjustments. The completely Soviet-style curriculum administration presented some shortcomings, which prompted the Communist Party of China (CPC) Central Committee to adjust the education policy in 1961, establishing the curriculum guidelines of "adjustment, consolidation, enrichment, and improvement." In 1963, the CPC Central Committee issued the *New Teaching Plan for Full-time Primary and Secondary Schools (Draft)* to address areas of confusion and improve quality. The new plan proposed providing optional courses, departing from the single course structure of the Soviet model, and initiating a shift away from excessively centralized curriculum power. However, this adjustment was only a simple modification to the ideology and implementation of the Soviet curriculum, rather than a total reform of the excessively centralized curriculum administration. The Cultural Revolution of 1966–1976 devastated the curriculum administration system because the curriculum was harnessed for strengthening educational revolution.

The two education regulations issued in 1952 established the Ministry of Education's regulations, ranging from curriculum content to curriculum evaluation, and

remained in national implementation. It was not until in 1978 that such system of curriculum administration ended under the influence of educational department's strategical corrections. Since then, the Chinese government has begun to learn from the experiences and methods of other countries (for instance, studying the textbooks from the United Kingdom, United States, and Soviet Union) and to gradually integrate their findings in reforms of curriculum content, provision, implementation, and evaluation. However, in addition to these reforms, the Ministry of Education has also issued new syllabi, re-established People's Education Press, and compiled the fifth series of national textbooks for primary and secondary schools under the 10-year system. Based on the teaching syllabus and textbook compilation, curriculum administration in China remains highly centralized. Although educational administration departments have enacted numerous measures to adjust curriculum administration since the reform and opening-up period, the centralized curriculum administration did not change substantially until the beginning of the 21st century. In the *Full-time Primary School Teaching Plan (Revised Draft)* (see Table 1.1), *Revision Opinions on the Full-time Five-year Secondary School Teaching Plan (Trial Draft)* (see Table 1.2), and *Full-time Six-year Key School Teaching Plan (Trial Draft)* issued in 1981, quality of cultural and scientific knowledge was prioritized, and in 1985, People's Education Press achieved their highest output of national textbooks for primary and secondary schools. Therefore, in the years following uniform textbooks were still used nationwide and served as a means to centralize curriculum power.

Although centralized power still characterizes subsequent curriculum administration, the momentum of curriculum administrative system reform has gradually increased since 1985. In May 1985, *CPC Central Committee's Decision on the Reform of the Education System* was issued and represented the general decision to deviate from past models of excessively centralized education administration. In 1986, *Compulsory Education Law of the People's Republic of China* was introduced, legislatively establishing compulsory education. The passage of the law indicated an increasing national focus on education. The National Education Commission formulated the *Teaching Plan for Full-time Primary Schools and Junior High Schools under Compulsory Education* in coordination with the compulsory education law. After several revisions, the plan was officially executed in 1990. The plan emphasized not only ideological and political courses but also other courses. Class hours of physical education (PE), history, and other subjects were increased; labor and technology were officially included in the course timetable; and time for social activities was increased. In 1990, the 1986 *Teaching Plan* was revised and reissued as the *Curriculum Plan*. In 1992, the *Curriculum Plan for Full-time Primary and Junior High Schools under Nine-year Compulsory Education (Trial)* was issued, along with the supporting *Syllabus (Trial)* of 24 subjects, which was implemented in the fall of 1993. For senior high schools, *Curriculum Plan for Full-time Regular Senior High Schools (Trial Version)* was issued in 1996, based on the *Opinions on the Adjustment of the Teaching Plan for Full-time Regular Senior High Schools* issued and adjusted for 6 years. It was favorable for strengthening the link with a compulsory education curriculum plan. As for textbooks, the new national unified textbooks revised in 1988 were adopted. In 1997, *Several Opinions on*

Table 1.1 Full-time primary school teaching plan (revised draft; weekly class hours) (Yan, Long, & Zhang, 2000)

		Monday	Tuesday	Wednesday	Thursday	Friday	Total class hours	Percentage
Ideological and ethical education		1	1	1	1	1	180	3.9
Chinese	Sub-total	11	12	11	9	9	1872	40.3
	Guided-reading	10	11	8	6	6		
	Composition			2	2	2		
	Writing	1	1	1	1	1		
Mathematics		6	6	6	7	7	1152	24.8
Foreign language					(3)	(3)	(216)	
Nature				2	2	2	216	4.7
Geography					2		72	1.6
History						2	72	1.6
PE		2	2	2	2	2	360	7.8
Music		2	2	2	2	2	360	7.8
Fine arts		2	2	2	1	1	288	6.2
Labor					1	1	72	1.6
Subjects offered synchronously		6	6	7	9	9		
Total class hours per week		24	25	26	27	27	4644	
Extracurricular activities	Self-study	2	2	2	2	2		
	Science and technology entertainment	2	2	2	2	2		
	Physical activities	2	2	2	2	2		
	Weekly meeting and class activities	1	1	1	1	1		
Total amount of school activities per week		31	32	33	34	34		

Table 1.2 Revision opinions on the full-time 5-year secondary school teaching plan (trial draft) (Yan et al., 2000)

	Junior high school			Senior high school			
	Grade 1	Grade 2	Grade 3	Grade 1	Grade 2	Grade 3	Total class hours
Politics	2	2	2	2	2		320
Chinese	6	6	6	6	4		872
Mathematics	5	6	6	6	6		926
Foreign language	5	5	5	4	5		768
Physics		2	3	4	5		432
Chemistry			3	3	4		304
History	3	2		3			266
Geography	3	2		2			234
Biology	2	2		2			192
Physical hygiene			2				64
PE	2	2	2	2	2		320
Music	1	1	1				100
Fine arts	1	1	1				100
Total class hours per week	30	31	31	31	30		4898
Labor and technology	2 weeks			4 weeks			576

Actively Promoting the Implementation of Quality Education in Primary and Secondary Schools was issued by the National Education Commission; in 1998, *Action Plan for Education Rejuvenation for the twenty-first century* was publicized by the Ministry of Education; in 1999, *Decision on Deepening Education Reform and Promoting the Quality Education* was issued by the National Council. All these moves accompanied the reform of the current basic education curriculum system, and acceleration of the construction of the new basic education curriculum system adapted to the development needs of the times. Therefore, curriculum administration of this period encouraged "many textbooks on one syllabus," local curriculum was valued, and attention was paid to local characteristics; however, the feature of curriculum administration—highly concentrated in the central educational administrative department—remained unchanged.

1.2.2 2001–Present: Sharing-Based Curriculum Administration

In 2001, the National Council issued the *Decision on the Reform and Development of Basic Education*. In the same year, the Ministry of Education put forward the *Outline of the Reform of Basic Education Curriculum (Trial)*. This outline made provisions for school-based curricula in the national curriculum system for the first

time, indicating that China's curriculum administration was moving away from strict centralization. The 2001 round of curriculum reform involves increased emphasis on students' personalities and interests. The policies stress that curriculum content should be coordinated with students' life experiences, and independent, exploratory, and collaborative learning are encouraged. Thus, students are given a dominant role in their education. The new curriculum system covers preschool education, compulsory education, and general high school education. The objectives of the system are making a breakthrough (Committed to cultivating talents, but not to imparting knowledge) in curriculum function, optimizing and adjusting curriculum structure, updating curriculum content, transforming instruction and learning methods, establishing new evaluation criteria, and implementing a three-level curriculum administrative system (national, local, and school). The 2001 outline delineates six objectives for curriculum reform:

- To shift away from the old curriculum's emphasis on knowledge instruction, emphasize the formation of a positive learning attitude, enable acquisition of basic knowledge and skills, and encourage learning processes resulting in the formation of positive values.
- To change the status quo of the subject-based curriculum structure, which involves too many subjects and a lack of integration; establish curriculum categories and class-hour proportions for the nine-year compulsory education system; create an integrated curriculum that is adaptable to the developmental needs of various local districts and students; and promote balance, synthesis, and selectivity (Meet the needs of students' curriculum selection) in the curriculum.
- To update curriculum content, changing the "difficult, complicated, partial, and old" aspects and relieving excessive focus on book learning; strengthen links between curriculum content and student life, modern society, and technological development; prioritize students' interests and experiences; and select basic knowledge and skills required for lifelong learning for inclusion in the curriculum.
- To reform the standards for curriculum implementation to relieve excessive emphasis on receptive learning, rote memorization, and mechanical drills; encourage students to actively participate in class; and develop students' ability to collect and process information, analyze and solve problems, communicate, and cooperate.
- To shift the function of curriculum evaluation away from screening and selection; create evaluations that promote student development and contribute to good teaching practice.
- To reform the overly centralized curriculum management system; implement a system in which curriculum is managed at three levels: national, local, and school; and enhance the adaptability of the curriculum to local governments, schools, and students (Ministry of Education of China 2001).

In 2001, the Ministry of Education also issued the *Compulsory Education Curriculum Program (Trial)* and the *Curriculum Standards for 20 Subjects Including Chinese (Trial Version)*. In addition, the Ministry of Education established

experimental textbooks for 20 primary and secondary school (7 subjects for primary schools, and 13 subjects for secondary schools). The concrete reform measures follow the "experiment before popularizing" principle. The new curriculum was tested nationwide in 38 pilot areas in September 2001. In the fall of 2002, the experiment was expanded to 530 counties and cities. In the fall of 2004, based on overall evaluation and extensive discussion of the work of the pilot areas, curriculum reform entered the popularization stage. By 2005, the initial grades of primary and secondary schools had adopted the principles of the new curriculum (see Table 1.3). This curriculum reform has neither been a simple adjustment of curriculum content nor a replacement of old textbooks for new ones, but rather a systematic revolution. The reform has addressed the core of the courses and drawn on the entire field of education research to create an innovative curriculum and the transform the concept of education in China (Table 1.4). The reform covers curriculum concepts, objectives, methods, assessments, and the entire curriculum administration system. School-based curriculum is accounted for in the reformed curriculum reform system for the first time, serving as the level 1 parallel to national and local curricula. The analysis presented here illustrates that curriculum administration in China is increasingly focused on student development and moving toward a model of more evenly distributed power.

In 2001, new standards for the various subjects were implemented, and curriculum reform efforts entered a stage of practical exploration. From 2001 to 2003, curriculum standards-based educational practice was launched. Curriculum standards and teaching practices from the *Outline of Basic Education Curriculum Reform (Trial) (2001)* that required further refinement became evident. In 2003, to better adapt curriculum standards to the educational and teaching practices, the Ministry of Education deputized experts to perform tracking trials of the reformed curriculum practices. From 2004 to 2012, 31 provinces and cities were successively added to the reformed curriculum pilot areas. Over years of follow-up study on the curriculum reform experiment, researchers identified a serious problem of "mismatch" between the official curriculum reform concept and the educational and teaching practices (Cui, 2011).

In 2010, the Ministry of Education issued the *Outline of National Medium-and Long-Term Program for Education Reform and Development (2010–2020)* (hereafter "2010 program outline") in line with the national policy initiative of "giving priority to the development of education and building a country of profound human resources." The 2010 program outline aimed to generally advance national education quality and specifically promote scientific development of educational businesses. The overall objectives of the outline are as follows: prioritize development, make education as the root of China reform and innovate, promote fairness, and improve education system quality (Ministry of Education of China, 2010). In addition, the outline proposes "to first adhere to morality education and then to prioritize student abilities and all-round development." With the issuance of this outline and the deepening of the curriculum reform, curriculum reform theory and practice have entered a new stage (Xue & Huang, 2016).

Table 1.3 Outline of compulsory education curriculum (Ministry of Education of China, 2001)

	Grade								
	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9
Category course course amount	Morality and life	Morality and life	Morality and society	Morality and society	Morality and society	Morality and society	Ideological and ethical education	Ideological and ethical education	Ideological and ethical education
							History and society (or history, geography)		
			Science	Science	Science	Science	Science (or biology, physics, chemistry)		
	Chinese	Chinese	Chinese	Chinese	Chinese	Chinese	Chinese	Chinese	Chinese
	Mathematics	Mathematics	Mathematics	Mathematics	Mathematics	Mathematics	Mathematics	Mathematics	Mathematics
			Foreign language	Foreign language	Foreign language	Foreign language	Foreign language	Foreign language	Foreign language
	PE	PE	PE	PE	PE	PE	Sports & health	Sports and health	Sports and health
	Arts (or music, fine arts)								
	Comprehensive practice activity								
	Courses compiled by the local government and school								
Total number of classes per week (class)	Grade								
	26	26	30	30	30	30	34	34	34
Total class hours per academic year	910	910	1050	1050	1050	1050	1190	1190	1122

Table 1.4 Outline of general high school education curriculum (Zhong, Cui, & Zhang, 2001)

Learning fields	Subjects	Compulsory credits (A total of 116 credits)	Optional I (at least 22 credits)	Optional II (at least 6 credits)
Languages and literature	Chinese	10	According to the social demand for talent diversification, to adapt to different students' potential and development needs, on the basis of common required, various courses are divided into several optional modules for students to choose from	According to the needs of local society, economy, science and technology, cultural development, and students' interest, the school offers several optional modules for students to choose from
	Foreign language	10		
Mathematics	Mathematics	10		
Humanity and society	Politics	8		
	History	6		
Science	Geography	6		
	Physics	6		
	Chemistry	6		
	Biology	6		
Technology	Information technology	4		
	General technology	4		
Arts	Art or music, fine art	6		
Sports and health	Sports and health	11		
Comprehensive practical activity	Research-based learning	15		
	Community service	2		
	Social practice	6		

In accordance with the 2010 program outline, to address the areas' educational and teaching practices that required improvement, the Ministry of Education revised the curriculum standards for each compulsory education subject in 2010. In 2011, the Ministry of Education organized a committee of basic education curriculum experts to examine the revised curriculum standards. By the end of 2011, curriculum standards for each compulsory education subject were issued.

In 2012, research initiatives were launched regarding the revision of the *New Curriculum Program for Senior High Schools*, which had been formulated during the new curriculum reform in China. In 2014, a project seeking opinions for the revision of the *Curriculum Program for Senior High Schools* was launched. To "make morality education the basic task of education" develop the role of curriculum in talent training, increase the level of comprehensive education, and promote the general development and health of students of various schools at all levels, the Ministry of Education issued the *Opinions of the Ministry of Education on Comprehensively Deepening Curriculum Reform and Implementing the Basic Task of*

Morality Education (hereafter, referred to as the *Opinions* of 2014). The policy objectives as described in this document are to "hold high the great banner of socialism with Chinese characteristics; integrate socialist core values into textbooks, classrooms, and methods of thought; focus on cultivating noble moral sentiments, solid scientific and cultural qualities, wholesome bodies and minds, and desirable esthetic tastes among students; enable students to build a foundation in Chinese culture and shared socialist ideals with Chinese characteristics, as well as international vision; enable them to become qualified constructive socialists and reliable successors to the older generation; complete a logical teaching system, coordinating the various learning stages of colleges and universities, elementary, and secondary schools; establish a talent-training system, whereby main education and teaching links will be mutually complementary and compatible; and form the education pattern of multi-participation through concerted efforts and coordination."

Thus, the *Opinions* of 2014 targets ten aspects of curriculum reform: study and promote development of students' key competencies and formulate academic quality standards; revise curriculum programs and standards; compile and revise college, university, primary, and secondary schools textbooks covering corresponding disciplines; improve the educational function of subject-specific courses; enhance the educational contribution of assessments and evaluations; strengthen teachers' abilities; perfect the education system through participation by the whole people; implement the plan for constructing a research foundation; integrate and utilize high-quality teaching resources; and strengthen management of curriculum implementation (Ministry of Education of China, 2014). The introduction of the *Opinions* indicates that curriculum reform has entered a new period. Since 2014, as part of the new curriculum reform in China, preliminarily theoretical research on the key competencies of Chinese students has been completed (Lin, 2016), and key competency goals for various disciplines at the senior high school level have been proposed. In 2014, revision of the *Curriculum Standards of Subjects for General Senior High Schools* was performed on the basis of key competencies for various disciplines and the compilation of textbooks. By the end of 2017, the newly revised *Curriculum Program for General Senior High Schools* and curriculum standards for 20 subjects had been issued.

The analysis presented here demonstrates that with the deepening of the new curriculum reform, the three-level curriculum administrative system is gradually being implemented. Curriculum authority boundaries among the various interested parties are increasingly clear, and curriculum power-sharing among curriculum administrators is also becoming better defined. The structure and function of the three-level curriculum administrative system is presented in the following section.

1.3 Three-Level Curriculum Administration Framework: National, Local, and School

1.3.1 New Curriculum System for Basic Education

In the new curriculum plan, the subject categories, total weekly class hours, and distribution of hours under the standards of the national curriculum are explicitly

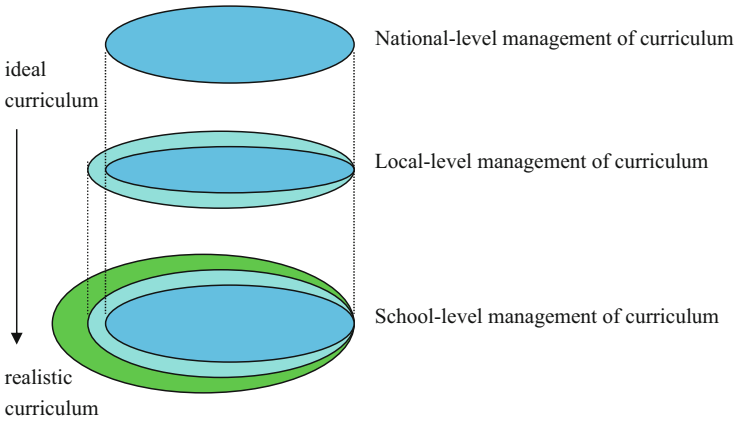

Fig. 1.1 National curriculum project frame

stipulated. A certain number of weekly class hours are reserved for the curriculum that the local governments and schools develop or select. The plan requires a corresponding curriculum management policy. Measures should be taken from the top down to ensure that local governments and schools effectively implement the national curriculum program; however, all parties with administrative power should be expected to uphold their responsibilities. Administrators' roles were reframed from "leader" to "instructor" and "service provider", and they should provide guidance with regard to curriculum-related decisions. Curriculum managers in various levels should actualize the bidirectional management mechanism governed primarily from the top down and complemented from the bottom up (as is shown in Fig. 1.1). Bottom-up curriculum management is mainly reflected in local governments and schools' independent development of their own curricula. The local government and school administrators apply for filing and deliberation with the relevant superior department, and they also have the power and responsibility to offer opinions or suggestions about the problems that occur during implementation of the higher-level curriculum.

According to global comparative research on curriculum, activities classified under "school-based curriculum development" (SBCD) vary greatly according to each country's curriculum management style. Thus, SBCD activities may be sorted into two types: those of decentralized countries and those of centralized countries. In decentralized countries, such as England, the United States, and Austria, the central governments (or national community) create a uniform curriculum standard based on which schools determine what is taught (not only the content of textbooks). Therefore, the main personnel that develop curricula are at the school level. All the curricula used in schools can be called "school-based curriculum"; in other words, all curricula are school-specific. In centralized countries, such as Japan, France, Russia, and Thailand, the central governments (or other institutions at this level) formulate a specific plan. All local districts and schools must carry out the plan, but some provisions allow schools to be free to design their own curriculum.

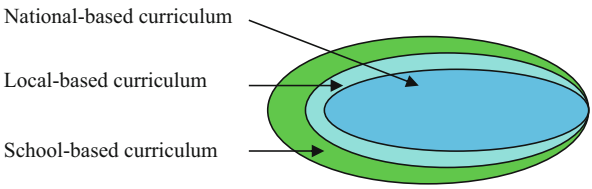

Fig. 1.2 The structure of school curriculum

Considering the Chinese educational tradition, the centralized-style SBCD should be implemented. A small portion of total class hours have been designated for curricula that meet the needs of particular students, schools, and local districts. National- or local-based curriculum should account for a general quality of education for students within a certain range, and school-based curriculum should address the special needs and interests of individual students. Students cannot be educated without both types of courses. The curriculum carried out in each school should comprise national-, local-, and school-based curricula (shown in Fig. 1.2).

A national-based curriculum embodies a government's will. It is designed with the aim of fostering ideal citizens through education that engenders certain qualities in students. Chinese policymakers rely on the nature and training objectives to formulate curriculum standards for all subjects (that is, to formulate syllabi) and then compile textbooks. Nation-based curriculum is the main element of the curriculum framework for basic education, and a critical metric by which the quality of basic education is evaluated.

Under the national curriculum program, local-based curricula are designed and developed by provincial educational administrations or other educational institutions that the national administration authorizes. Curriculum administration depends on national and local policy development requirements, economy, and culture, and curricula must be developed according to the class hours prescribed in the national curriculum program.

Implementation of the two kinds of curriculum described in this section requires practice of SBCD. Through reasonable evaluation of the needs of our schools, we make full use of their curriculum resources and those of the local community to develop various and selective curricula. Curriculum development mainly depends on the educational principles of the Party, national and local curriculum programs, educational philosophy of each school, evaluation of students' needs, and curricular resources of each school. China's new curriculum emphasizes school-based curriculum, cooperation with the outside world, and full use of curriculum resources in and out of schools. Thus, school-based curriculum is a critical part of the national curriculum program, which aims to realize national educational principles, create ideal schools, meet individual student needs, and increase teachers' expertise.

1.3.2 Rights and Duties of the Three Main Bodies

The rights of curriculum-related decision-making are distributed among the national, local, and school levels. The Ministry of Education is the highest authority in

national educational administration, and it is the Ministry's duty to create principles, policies, and standards for national basic education and the national curriculum program framework. The duty of provincial educational administrations is to develop local-based curricula and direct schools in executing the Local Curriculum Program. The duty of the local administrations is to address the local situation and development requirements and to simultaneously meet national curriculum standards. When a national administration gives compulsory education administrative rights to local administrations, local administrations then undertake the responsibility of meeting national standards. In this situation, nation-based curriculum serves as local-based curriculum.

In schools, the ideal curriculum is transformed into the realistic curriculum through the actual education process. Therefore, school administrations should comprise one of the main bodies with rights to determine, develop, and manage curricula. Curriculum management at the school level is relative to curriculum management at the national and local levels. Figure 1.2 illustrates the two levels. One is the effective practice of nation-based curriculum and local-based curriculum, and the other is reasonable development of school-based curriculum.

Based on the considerations described in this section, the following sections will discuss curriculum management rights and duties at the national, local, and school levels.

1.3.2.1 National-Level Curriculum Management

The Ministry of Education is responsible for national management of curriculum; to this end the Ministry's major responsibilities are as follows:

- Guiding China's basic education curriculum reform at the macro level, and developing corresponding curriculum policies and a framework for planning the national basic education curriculum.
- Organizing means by which to create, amend, or approve the curriculum plan for the various stages of basic education in China. This duty entails regulation of the national curriculum structure for each educational stage, where the structure comprises learning areas, number of subjects, total class hours, weekly class hours, and class-hour allocation. School schedule and basic academic burden of students must also be strictly regulated.
- Issuing national curriculum standards, ensuring uniform basic academic requirements, and defining the national basic education quality requirements.
- Formulating guidelines for the implementation of the national curriculum, assisting local governments and schools to creatively implement national curriculum plans according to their realistic conditions, and making provisions for the development of local curriculum programs.
- Determining an assessment system for the basic education curriculum, and ensuring the effective implementation of national basic education curriculum objectives at all stages. If necessary, organizing nationwide standardized tests.

- Formulating three-level curriculum management policies and issuing management guidelines for local and school curricula, and providing basic standards for the development of local school-based curricula as well as for the management of school-level basic education curriculum.
- Creating policies for the development and management of textbooks, and disclosing the approved primary and secondary textbook directory and assessment report to schools and national society at regular intervals.
- Monitoring the overall operating quality of the national basic education curriculum, and conducting regular spot examinations and follow-up research on primary and secondary schools' teaching, assessments, and development and utilization of curriculum resources; offering assessment reports.

1.3.2.2 Local-Level Curriculum Management

Local governments serve as a link in China's education administration system, playing a role that would be difficult for the central government to fill. With the establishment of the three-level curriculum management system, local governments obtained the right to develop and manage curriculum. They are no longer expected to merely serve as a "transfer stop" and executor of central government curriculum policy. As a result, the basic education management system featuring local responsibility and stages for running schools is being gradually improved. This system offers greater curricular freedom for local governments to improve the quality of students' learning and endow education systems with local characteristics, furthering the development of the regional economy, society, and culture.

Rights and liabilities of the local educational administrative departments in curriculum administration mainly comprise implementation and management of the national curriculum, management and development of the local curriculum, and guidance and management of school-based curricula. The specific duties of educational administrative departments at the province (municipality, direct-controlled municipality) level are as follows:

- Developing a curriculum plan for each education phase and overseeing local curriculum plan implementation according to the requirements of the national curriculum plan, filing reports to the Ministry of Education; and continuously improving curriculum plan implementation.
- Monitoring primary and secondary schools' teaching and assessment systems, monitoring curriculum resource development and utilization throughout the province, municipality, and direct-controlled municipality, recruiting research institutions to evaluate the working quality of the curriculum in primary and secondary schools through sampling surveys, follow-up studies, and other means; identifying, reflecting upon, and solving problems in the basic education curriculum reform process.

- Deputizing or cooperating with experts to develop local curricula under the Ministry of Education's standards for local curriculum management; developing guiding proposals for schools' implementation of the local curriculum.
- Supervising and assessing schools' execution of the national curriculum program through the subordinate educational administrative departments at all levels; ensuring that curriculum plans at all stages are comprehensively and effectively implemented.
- Through the subordinate educational administrative departments at all levels, guiding schools in development of school-based curricula and specific implementation plans for that curricula.
- County-level educational administrative departments considering the SBCD schemes reported by various primary and secondary schools within a specified time period and provide feedback.

1.3.2.3 School-Level Curriculum Management

Curriculum plans can only be authentically implemented in schools, because schools are where education actually occurs. Therefore, school management of curricula is critical for realizing the scope and objectives of the basic education curriculum. School curriculum management comprises two basic components: effective implementation of national and local curriculum and rational development of school-based curriculum. Major responsibilities of school curriculum administrations are as follows:

- Formulating a plan for the school-year curriculum, according to the relevant provisions of the Ministry of Education and province (municipality and directly controlled municipality) curriculum plans, and based on the practical situation of the local community and school; reporting to the superior educational administration department for filing; and establishing the courses stipulated in the high-level education administration department curriculum plan.
- Independently or in cooperation with off-campus institutions or personnel, developing school-based elective courses according to the related higher-level educational administration department policies and the traditions and strengths of the school and reporting the development program for the school-based curriculum to the higher-level educational administration department for evaluation within a specified time.
- Selecting textbooks approved by the national or provincial administration; organizing a committee with extensive representation, such as teacher and student representation, to conduct the textbook selection; reflecting democratic principles; and considering parents' opinions.
- Addressing problems encountered in the implementation of national and local curriculum plans and establish an internal assessment mechanism for the school-based curriculum to ensure that school-based curriculum is consistent with and complementary to the overall objectives of the national and local curricula.

- Managing all school courses according to the provisions of the superior educational administration department and the school's practical situation and establishing self-monitoring practices for teaching, assessment, examination, and development and use of curriculum resources, thereby ensuring the stability and improvement of the school quality.

In summary, the national basic education curriculum program comprises an integral whole. Although the development of national, local, and school curricula are different processes, national, local, and school administrators jointly construct the national basic education curriculum system. These administrative levels only differ in terms of the focus and scope of their responsibilities.

1.4 Conclusions and Limitations

In the 21st century, the scope of curriculum reform has surpassed content and technology; curriculum reform must address what kind of talents to cultivate among students and how each country can best cultivate students' talents (Amadio, Tedesco, & Opertti, 2015). A national curriculum is an embodiment of national will, mission, and goals, and curriculum administration is a crucial part of education administration. In addition, curricula must be reformed according to social, political, and economic changes.

In China, the general trend in reforming the school curriculum administration has shifted from over-centralization to power-sharing. A three-level curriculum management framework has already been established. The current system has integrated the uniform school curriculum framework and clearly divided administration among three bodies, each of which makes various contributions to the main curriculum construction. This system takes advantage of the initiative and creativity of local administrations and schools through enabling their participation in curriculum construction, improvement, and adaptation. Chinese school curriculum reform reflects the course of social reform in China as well as the trend of curriculum democratization. School-based curriculum vitality has also been restored and increased during the process.

In conclusions, we state the following:

Firstly, a country's curriculum administrative system and general administrative system are interrelated. However, they do not simply exist in direct correspondence; they are affected by the levels of social and economic development, cultural traditions, education development, and even international tendencies.

Secondly, the global curriculum administrative system development has moved toward democratic power distribution. Two types of administrative structures, i.e. centralization and decentralization, have been found to develop toward their opposites. Specifically, countries have moderately adjusted the distribution of curriculum power at the national, local, and school levels, according to what must be done in their practical situations.

With these developments, new models of centralization and decentralization have emerged. For example, countries with a tradition of decentralization have implemented national curricula and national curriculum standards; however, these policies do not indicate implementation of a national standard curriculum as previously described. Curriculum standards remain flexible and elastic, allowing considerate space for school leaders to make their curriculum decisions. Contrastingly, countries with centralized power traditions have experimented with aspects of the decentralizing systems. Some have adopted a national curriculum and curriculum standards, in accordance with the centralized model, but left space within the national plan for schools to design their own courses. Traditionally centralized countries' development of such "school-based curriculum," such as school-based curriculum in China, is different from that of countries with decentralization. In countries that implement decentralized systems, the national or local government will formulate compulsory courses for students, and stipulate uniform curriculum standards. Subsequently, schools perform the "development of school-based curriculum" with specific teaching contents according to the standards set by the higher administrations. Thus, although the manifestations of centralization and decentralization differ in concept and distribution of power in various countries, all countries have generally abandoned the "pendulum law" during reform of curriculum management systems to fit in their contexts. Therefore, new meaning has been conferred upon centralization and decentralization, and governments have identified strategies for integrating and supplementing courses through various levels of administration. Such systems are historically profound and may continue to advance with the times.

Based on these findings, we should neither maintain a fixed viewpoint about institutional change nor adopt the alternative mode of thinking. We should be aware of the potential unity of opposites, be guided by systematic and dynamic analysis, consider the situation critically, select a power model as the basis for the curriculum administrative system, align with the strengths of the alternative power model to avoid the weaknesses of a polarized system, and thus, achieve fair curriculum power distribution (Darling-Hammond, 2010). Nevertheless, the reform also encounters some challenges, such as weak curriculum development capacity at local and school levels, an unfinished bottom-up curriculum deliberation mechanism, and a pending national curriculum implementation and monitoring system.

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Chapter 2
Developing School-Based Curriculum as a Concept in China

Yunhuo Cui and Xuemei Xia

Since the establishment of new schools in mainland China in the early twentieth century, primary and secondary schools have begun to carry out school-based curriculum development endeavors such as off-campus extracurricular activities. "Second classrooms" and "secondary channels" appeared around the 1980s and can be seen as prototypes of school-based curricula. In the mid- to late-1990s, the term "school-based curriculum development" was officially introduced from the West.

As mentioned in the Chap. 1, school-based curriculum development can generally be divided into two categories when viewed from a global perspective. The first is the school-based curriculum development that is practiced in decentralized countries wherein the national or provincial (state) government formulates and promulgates the types of courses and their standards. In this type of curriculum development, schools act in accordance with education laws and regulations in independently selecting and editing textbooks and deciding on the teaching content.

The second category is the school-based curriculum development practiced in centralized countries wherein the central government provides a framework for curriculum planning and specifies the content of most courses, leaving small curricular details for the schools to determine. In view of the traditions and realities of Chinese education, "school-based curriculum development" advocated in China is noticeably different from that which has been practiced in decentralized countries, in that there are no contradictions between a "national curriculum" and "local curriculum." Instead, this curriculum is based on the complementarity of the two, integrating them to jointly support the quality of the Chinese education curriculum system.

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Based on this understanding, we can summarize the school-based curriculum currently being advocated as the following. School-based curriculum refers to schools making full use of local community and school resources to develop a diverse, student-selectable curriculum through the scientific assessment of student needs to guarantee the quality of the national and local curriculum (Zhong, Cui, & Zhang, 2001). In other words, instead of a top-down approach in which the local curricula are based on the national curricula, this program is a bottom-up approach, changing the national standards through local developments.

The development of school-based curriculum in China can be roughly divided into three periods: school-based curriculum as a teaching subject, the introduction and localization of school-based curriculum concepts, and school-based curriculum development as a national policy.

2.1 Period I: School-Based Curriculum as a Teaching Subject

Curriculum development activity, from the point of view of Chinese teachers, was historically a government activity. A teacher who was engaged in a curriculum development activity did not intend to affect school or national curricula but was instead focusing on the best teaching practices.

2.1.1 School-Based Curriculum Before the mid-1980s

In practice, schools started exploring similar curricula in the early twentieth century. In the 1950s, some schools produced their own textbooks, and there were cases in primary and secondary schools where students participated in the process. A National Youth Science and Technology Exhibition was held in Beijing in 1979; among its exhibits were small inventions, creations, and essays produced by primary and secondary school students, which were the result of the development of "second classrooms" and extracurricular activities (Dong, 1984). In the mid-1980s, primary and secondary schools gradually developed a model of "combining classroom teaching and extracurricular activities." A large number of schools, such as the Suzhou High School in Jiangsu Province, Langya Road Elementary School in Nanjing City, High School Attached to Northeast Normal University in Jilin Province, Chengdu Experimental Primary School in Sichuan Province, Datong High School in Shanghai, and Shangwen Middle School in Shanghai, undertook a series of activities to explore how to better develop extracurricular activities. The city of Guangzhou can be taken as an example.

In 1984, an estimated 100,000 secondary school students participated in extracurricular activities in the city, and the city established regular and varied groups of extracurricular activities. Students who participated in extracurricular activity groups accounted for 94% of the student population (Chen, Wu, & Wang, 1984). Some of

these activities were quite simple, and some were merely supplements to classroom teaching. However, some activities included factors that were already being used for the development of a school-based curriculum. Theoretical discussions during this period mainly centered on the relationship between teaching and extracurricular activities, as well as methods for carrying out those activities. "Extracurricular activities" generally include activities both within and outside of the school, including various interest groups, scientific and technological activities, literature and art, and social surveys (Liu, 1986). Although the classifications developed during this period overlap and are not scientific, and curriculum planning was not carried out from a curriculum-based perspective, they did improve the status of extracurricular activities, enhancing them from being seen as a supplement for classroom teaching to an equally important curriculum that focuses on the strengths of students.

2.1.2 A Typical Example: Shanghai Road Elementary School, Tianjin City

School-based curriculum development activities in Shanghai Road Elementary School, in a broad sense, began in the 1960s. At that time, several of their young teachers were studying the intersection of written calculations and the abacus; they created a set of mathematics teaching materials that combined written and abacus calculations, which allowed for the primary school mathematics curriculum to be completed in 4 years. In the 1980s, they added natural science, oral English, and five interest-study courses for lower grades. They also managed to find time both inside and outside of the classroom to carry out activities. In addition to establishing interest-based activity groups, they also began more general group activities such as reading, speaking, information, and observation activities geared toward society, allowing the students to transcend the limits on individual subjects (He, 2002).

2.1.2.1 Basic Activity Curriculum Process

The school developed an activity curriculum development plan and incorporated it into the overall plan of the school. Afterward, the teacher determined a research topic and prepared the activity curriculum outline and instructions for each of the sub-items. The school included the activities selected by the teachers in the curriculum, which the teachers then carried out. Finally, the district department of education assessed and evaluated the curriculum.

2.1.2.2 Activity Curriculum Arrangement

Even though most of the schools at that time spent most of their time on the national curriculum, Shanghai Road Elementary School developed six different kinds of school-based curricula, which are shown in Table 2.1.

Table 2.1 Activity curriculum arrangement of Shanghai Road Elementary School

Category	Ideology and morals	Subjects	Technology	Literature and art	Physical health	Labor
Content	Morning meeting, class meeting, social practice activities, traditional school activities, etc.	Expansion of primary subjects such as language, mathematics, and foreign languages	Specimen model making, planting, scientific experiments, microcomputers, etc.	Music, dance, art, art appreciation, etc.	Track and field, ball sports, chess, and other mass sports activities, training, etc.	Participation in social practice, contact with nature, visiting factories and rural areas, etc.

2.1.2.3 School-Based Curriculum Management

The principal was responsible for the school-based curriculum of the school. Under the unified leadership of the school, a management network at the school, grade, and class levels was established that helped to plan, manage, inspect, record, summarize, and display results. The teaching quality of teachers and the learning quality of students were both included in the school's evaluation system. The school invested a certain amount of money every semester to procure books, materials, and equipment and maintained close contact with factories, rural areas, military units, and social service departments.

2.1.2.4 Curriculum Evaluation

The combination of on- and off-campus (district department of education) evaluation assessed teachers as well as students, but the simple design recorded only student attendance.

2.1.3 Characteristics of the Early Years of School-Based Curriculum

As seen from the above practice, school-based curriculum before the mid-1980s mainly supplemented the national curriculum. It was subsidiary and marginal. The labels used during this period such as "second classrooms," "small activities," and "small inventions" are all characteristic of that time period.

The "school-based curriculum" of this period did not yet feature an entire activity curriculum developed from a curriculum-based perspective. The internal classifications overlapped with each other, and the process itself was not perfect. However, the core characteristics of the schools and teachers' self-development were already being reflected. Students had a certain degree of selectivity when it came to choosing activities that were different from those available through subject-based teaching.

2.2 Period II: Introduction and Localization of School-Based Curriculum Concepts

The school-based curriculum development model is based on the Western concept of such a curriculum development; at this time, few Chinese schools have implemented standardized, school-based curriculum practices.

2.2.1 School-Based Curriculum from the Late 1980s to 2000

The 1996 "Full-time Regular High School Curriculum Program (Experiment)" stipulated that school curricula would be divided into subject-based and activity-based curricula. Subject-based curricula were further divided into compulsory subjects, limited elective subjects, and free-selection elective subjects. Schools were to "set up elective subjects and activities in a reasonable manner" (Department of Basic Education, State Education Commission, 1997), which would account for 20–25% of total class hours. After the promulgation of this document, the content was tested in Tianjin, Shanxi, and Jiangxi. However, the school practice still lagged behind. From the curriculum perspective, the consciousness of the principals to develop the curriculum by themselves had not been awakened. They did not realize that they had the right to develop their own curriculum to some extent; students were not yet at the core of the curriculum; and the planning, integration, design, implementation, and evaluation of the curriculum had not yet been discussed in depth. All of this meant that this period could not be considered a genuinely reasonable school-based curriculum development. Curriculum experts from universities later intervened, significantly improving this process. Offering elective subjects and activities thus became more scientific. School-based curriculum development, in the real sense, began at this time.

2.2.2 A Typical Example: Xishan Senior High School, Jiangsu Province

Xishan Senior High School was an ordinary rural secondary school with nearly a 100-year history; it was known as an "idyllic school." Since 1992, the school has offered a "three majors" curriculum, combining compulsory subjects, elective subjects, and activities; it offers 18 elective subjects and activities. From 1995 to 1996, the school conducted experiments on typical school-based curriculum subjects in physical and aesthetic education, obtaining preliminary experience on the matter. In 1997, with the participation of curriculum experts from universities and the establishment of school-based curriculum development, Xishan Senior High School officially began to develop the school-based curriculum. A description of the school-based curriculum development in Xishan Senior High School from 1997 to 2001 follows.

2.2.2.1 Basic Process

Established a curriculum leadership organization: The school established a school-based curriculum deliberation committee consisting of the principal, curriculum

experts, teacher representatives, and student representatives; the teacher–student ratio was 2:1.

Needs assessment: Under the guidance of curriculum experts, six sets of questionnaires were designed. Those questionnaires were used to obtain feedback from the teachers and students, which would be supplemented by interviews, seminars, and other such methods to obtain the necessary information. At the same time, the committee also studied school educational philosophy, curriculum resources, and other topics.

Development framework: The committee determined the overall goals, formed the curriculum structure, and finally formulated the "School-based Curriculum Development Guide" and the "Program for School-based Curriculum Planning."

Organization and implementation: There were a total of five steps:

- teacher training;
- teacher proposals for subjects;
- deliberation;
- issuance of subjects that students could choose independently; and
- setting up teaching classes and preparing the course outline.

2.2.2.2 School-Based Curriculum Arrangement of Xishan

According to the national "Full-time Regular High School Curriculum Program (Experiment)" issued in 1996, Xishan Senior High School developed its own school curriculum structure with the help of Yunhuo Cui, an expert from East China Normal University. The structure is detailed in Table 2.2.

2.2.2.3 Curriculum Management

The fundamental objective of establishing school-based curriculum management in Xishan Senior High School was to ensure the rational and orderly development of school-based curriculum and to complement and coordinate the implementation of the national and local curriculum. The main contents included setting up a school-based curriculum deliberation committee, formulating the "School-based Curriculum Development Guide" and the "Program for School-based Curriculum Planning," regularly reporting to the higher-level education administrative department, establishing a deliberation system for course outlines proposed by teachers, training teachers, organizing and implementing the school-based curriculum, and establishing a school-based curriculum assessment system to assess the quality of the curriculum.

Table 2.2 The curriculum structure of Xishan

			Senior year one	Senior year two	Senior year three	Total class hours	
School-based curriculum	Required elective subjects	Reading skills	1	1		Optional elective subjects	There are a total of 40 h/week, and each class is 40 min in duration
		English conversation	1	1			
		Counseling	0.5	Optional elective subjects			
		Research learning method	0.5				
	Optional elective subjects	Physical and mental health	Optional elective subjects				
		Life and professional skills					
		Humanities					
		Science					

2.2.2.4 Curriculum Assessment

Curriculum assessment accompanies the implementation of each school-based curriculum. It includes three aspects: the comprehensive assessment of the curriculum itself; the assessment of the teaching to ensure that it adheres to the evaluation of subject diversity, integration of self-assessment, peer assessment, student assessment, and leadership assessment. The leadership assessment is intended to ensure that a diverse set of assessment methods are being used. In addition, those driving the assessment should combine product assessment with process, qualitative, and quantitative assessments as well as conduct symposiums and questionnaire surveys to obtain corresponding situational information and data to assess student learning (Tang, 2001).

2.2.3 Characteristics of the Second Period of School-Based Curriculum

The school-based curriculum of this period was implemented under the theoretical guidance of a few scholars. Professor Yunhuo Cui, first author of this book, was the first to introduce the concept of school-based curriculum to domestic researchers. In his four years of work with Xishan Senior High School, he further enriched the meaning, types of activities, implementation procedures of school-based curriculum development, expert support, and other such issues (Cui, 2000). The original interest groups were promoted through the curriculum construction perspective.

The typical characteristic of this period was that the curriculum theory and curriculum changes were closely linked together to jointly promote the positional change of schools from method to content. For a long time, Chinese schools did not have to consider "teaching content" but only the "teaching method," which led to a disconnect between curriculum and teaching. The "teaching content" was decided by experts and officials, while the school was responsible for its faithful implementation. In the long run, schools became specialized institutions for the implementation of "curriculum." The curriculum itself was beyond the control of schools, teachers, and students and instead was developed by a dedicated staff or agency, which functioned as the true place from which education is developed. Principals, teachers, students, and their families who best understood students had no opportunity or power to participate in decisions pertaining to the curriculum. One strategy to solve this problem is to allow schools to make their own decisions regarding the curriculum, allow them to participate in these decisions, and have them assume responsibility for the curriculum.

Another dominant characteristic during this period was that it was the beginning of a system of democratic deliberation for curriculum development. Xishan Senior High School was the first school in China to formulate a school-based curriculum plan and also the first school to propose a course outline for each subject. The

"Program for School-based Curriculum Planning" was an overall program for school-based curriculum development. It was a general description of the school's overall philosophies on school-based curriculum development including needs assessment, overall objectives of the school-based curriculum, curriculum structure, categories, suggestions for implementation and assessment, safeguards, and other such ideas. A course outline was a specific program included in a school-based curriculum that was developed by teachers or groups. It included student and resource analysis, curriculum objectives, study topics or activities, suggestions for assessment, and safeguards. The deliberation of the school-based curriculum, a crucial evaluation method and an indispensable mechanism for school-based curriculum management, was aimed at both programs. School-based curriculum development is an essential part of curriculum decentralization, which requires a matching bottom-up management mechanism; the deliberation is the mechanism.

These explorations had a broad and far-reaching impact nationwide. Exploration of the theory and practice during this period provided a solid foundation for the establishment of the final policy with regard to the curriculum. Professor Cui also proposed a useful concept based on practice for the transition from a system of centralized curriculum management to the tiered version of curriculum management by state, locality, and school. That is, the curriculum implemented by the school should include the national, local, and school-based curricula, all of which constitute the basic education curriculum management system with Chinese characteristics (Cui, 2000).

2.3 Period III: School-Based Curriculum as Part of the National Curriculum Program

School-based curriculum development as a national policy is a transcendence from the first two activities above. School-based curriculum development activities have been stipulated at the national policy level.

In June 2001, the State Council convened a national conference on basic education followed by the publication of the "Decision of the State Council on the Reform and Development of Basic Education," which includes the statement that the government will "implement curriculum management at the national, local, and school levels." The state formulates the overarching plan for the development of primary and secondary school curricula, determines the categories and class hours in the national curriculum, formulates standards for the national curriculum, and directs the implementation of the primary and secondary school curricula from the top level. On the basis of ensuring the implementation of the national curriculum, local development is encouraged, so that courses can be adapted for local settings: schools can develop or select courses that are appropriate for the characteristics of their school. At the same time, the Ministry of Education also issued a programmatic document on curriculum reform, "Outline of Basic Education Reform (Trail)," and

Table 2.3 Proportion of class time allocation in the national curriculum

Course category \Stage	Compulsory education	Regular high school education
National curriculum	80–84%	90.5–95.8%
School-based curriculum	16–20% (including local courses and comprehensive Practice Activity)	4.2–9.5% (only optional II, excluding comprehensive practice activities)

clearly stated in the objectives of the curriculum change that the goal is to change the state of over-concentration in curriculum change, implement curriculum management at the national, local, and school levels, and strengthen the adaptability of the curriculum to local settings, schools, and students. This is an indicator that school-based curriculum development has started to become a part of national policy. Subsequently, the Ministry of Education, People's Republic of China (2001) and the "Ordinary High School Curriculum Plan (Experiment)" (2003), which reflected this policy to varying degrees, as shown in Table 2.3.

School-based curriculum is positioned in a way that leaves space for non-academic and interest-oriented activities for schools (ranging from 10 to 25% of total class hours). Explicitly, the state formulates a curriculum planning framework based on educational goals. In accordance with this plan, the state develops curriculum standards for compulsory courses, while the decision-making powers for some elective courses that will meet the development needs of the locality, school, or students are delegated to the locality or schools. The "Guidelines for the Development and Management of Local and School Curriculums" will also be issued to establish a curriculum decision-making mechanism that combines both the top-down and bottom-up approaches.

2.3.1 School-Based Curriculum from 2001 to 2018

By analyzing nearly 200 relevant papers and monographs published between 2000 and 2003, such as "School-based Curriculum Development: Theory and Practice" (Cui, 2000) and "School-based Curriculum Development" (Wu, 2002), we have a general understanding of the state of theoretical research during this period. The sheer number of papers during this developmental stage was much higher than during the first two primary stages (seven papers in 1994–1998, 11 in 1999). In terms of the content, the papers during this stage can be roughly divided into the following four categories: (1) discussion on the source, concept, meaning, and nature of school-based curriculum development; (2) introduction to the development of school-based curriculum in Hong Kong, Taiwan, and other regions; (3) discussion on the internal factors of school-based curriculum development such as the determination of objectives, the selection and organization of content, the rational

Table 2.4 Categorization of papers on school-based curriculum development from 2000 to 2003

Category	1	2	3	4
Quantity	84	9	41	55

development of evaluation mechanisms, and other such factors; and (4) research on how to implement school-based curriculum development and the required conditions and support systems for its implementation such as strategies for addressing the lack of curriculum resources and for improving the abilities of teachers.

The specific distribution of these papers by category is shown in Tables 2.4. It can be seen from this that, relatively speaking, research on the practical level seems to be insufficient.

In 2002, Cui and colleagues undertook a relatively comprehensive investigation of the overall situation, fundamental understanding, and factors analysis of school-based curriculum development in China (Cui, 2002). The results are as follows:

The overall situation and analysis of school-based curriculum development

- Overall situation of school-based curriculum: 90%[1] of schools offered school-based courses, and the number of school-based courses offered ranged from 1 to 30.
- Professional needs of teachers: Schools were mainly focused on "providing relevant materials," "knowledge and skills in curriculum development," and "independently deciding on teaching content and methods."
- Course resources: Among the choices in "difficulties in school-based curriculum development," 23.1% of teachers chose "limited resources such as financial resources in the school."
- Proportion of class hours: In general, the proportion of school-based courses was mainly concentrated in the range of 10–20% of total class hours.

Understanding of school-based curriculum development

- Attitude of teachers toward the school-based curriculum: Nearly 60% of teachers actively participated in the development of the school-based curriculum.
- Teachers' curriculum awareness: More than half of the teachers (56.8%) correctly understood the meaning of the curriculum. The overwhelming majority of teachers (97.1%) often or sometimes had a problem with thinking about the teaching content.

[1]"School-based curriculum development" here should be understood in a broader sense. Because the term "school-based curriculum development" has only been present in Chinese literature on education in recent years, many principals and teachers are still relatively unfamiliar with it. Terms such as "secondary channel," "second classroom," and "elective courses and activities" have been accepted by schools. Therefore, the questionnaire design of the study used "elective courses or activities" to eliminate errors arising from how respondents understand the terminology.

- Teachers' sense of cooperation: Only 4.7% of teachers believed that "interpersonal cooperation ability" is an essential aspect of school-based curriculum development.

Elements of school-based curriculum development

- Determination of the objectives of the school-based curriculum: Overall, 92.3% of the teachers believed that the school's educational objectives were fundamentally aligned with the educational activities.
- Selection and organization of school-based curriculum content: Many schools overlooked the role of the student in the development process. The decision-making power for high school and junior high school teaching content mainly lay with the teachers, while that of primary schools lay with the school.
- Assessment and evaluation of school-based curriculum: The evaluation method for the student learning was mainly conducted throughout the regular learning process; learning progress at the end of the period was also examined. Nearly 40% of teachers believed that teachers should evaluate the learning results of students, and less than 5% of teachers believed that student learning groups were subject to evaluation.

2.3.2 A Typical Example: School-Based Curriculum of Shanghai Datong High School

Shanghai Datong High School is a famous private school that was founded in 1912 by a group of patriotic intellectuals. In 1959, Datong High School became a key secondary school in Shanghai. In 2001, it was named the first experimental and demonstrative high school in Shanghai. According to the school website, in the past 100 years, although the school has experienced the vicissitudes of existence, it has always adhered to the principle of "working for the greater good" and cultivating the "humanity and talents" of students toward social responsibility; it has accumulated excellent school traditions and profound school culture.

School-based curriculum development in Datong High School has been going on for 23 years. Since 1987, Datong High School has taken the lead in Shanghai by reducing compulsory courses, adding elective courses, and strengthening activity-based courses to conduct a comprehensive curriculum structural reform experiment. In the new century in particular, against the backdrop of the second phase of curriculum reform, the school's work in curriculum reform and school-based curriculum development has accelerated. From the initial offering of elective courses to develop students' interest, to the formation of a series of courses and specialty course groups, to the formation of curriculum philosophy, and to the promotion of curriculum integration, all steps have revolved around the question of how to let students develop potential and personality through a school-based curriculum. The

development, reflection, adjustment, and redevelopment of this core concept has taken place in a cyclical development process (Guo & Zhao, 2011).

2.3.2.1 Curriculum Philosophy

The school has formed its own curriculum philosophy or ideas toward school-based curriculum development. The philosophy is comprised of "one direction" "two strategies" "three combinations" and "four ways".

One direction: Datong students heading toward the future. Datong claims that their students heading toward the future should have a profound humanistic foundation, solid scientific literacy, a sense of innovation that pursues transcendence, and a foundation that will allow them to cope with future challenges. The school's mission is to help students become modern individuals with well-rounded personalities, solid foundations, and distinct specializations, along with national pride and an international perspective.

Two strategies of school-based curriculum: broad curriculum construction and characteristic development. "Adapting the curriculum to the development of each student" is first reflected in the selectivity of the curriculum; schools must select school-based curricula that provide students with sufficient choices. However, the construction of a school-based curriculum cannot only pursue quantity but should adhere to the idea of "school-based curriculum specialization and specialized characteristic curriculum" per the needs of the school's culture. The school's curriculum areas are divided into the following eight areas: global awareness and national self-esteem, cooperation and competition, democracy and legal systems, network awareness and network ethics, innovation awareness and practical ability, entrepreneurship and risk awareness, scientific spirit and humanities, and communication and cautiousness. Having a broad foundation in establishing these eight learning areas provides students with a wealth of choices when it comes to learning content. Characteristic development is based on cultural development and focused on supporting the school's characteristics, which are reflected in curriculum subjects regarding the school's characteristics.

Three combinations of school-based curriculum: integrating with disciplines, social developments, and students' needs. In the school-based curriculum, the school combines curriculum development with the subject curriculum, expands the learning content of major subjects, and strives to strengthen the students' academic foundation. It combines the diverse needs of society and promptly absorbs the latest achievements in science, culture, economics, and social development, laying the foundation for students as they walk toward the future. It is tailored to the developmental needs of the students and promotes the development of individuality.

Four ways: school development, curriculum selection, teacher proposals, and expert guidance. Here, school-based development is built upon its leadership focusing on courses for students. Teachers need professional support to help them with curriculum development. Therefore, schools can also undertake curriculum construction through different channels. The specific practice at Datong High School

is that, according to its educational content, the school will take the lead in organizing curriculum development such as with the school's "Society and Technology Studies" and "Datong Culture" courses. The school selects and introduces courses based on its educational goals and assesses the curriculum proposed by teachers to support them in developing these ideas in alignment with its curriculum objectives. The school extensively develops social resources and leverages experts and scholars to set up quality courses.

In practice, school-based curriculum construction has become a combination of long-term and short-term subjects that broaden knowledge in both depth and breadth along with combining mainstream subjects with niche subjects. After combining existing subjects, developing new subjects, and modifying subjects, the school has gradually formed five major school-based expansive courses including a series of courses on morals, student-led courses, expansive academic courses, science courses, and humanities courses. The system of school-based expansive courses is more complete, and the students are given a wide range of choices that foster holistic development.

2.3.2.2 Course Development Mechanism

The school established a "School Curriculum Construction Research Group" that was directly led by the principal's office. The group researched school curriculum construction, curriculum management and evaluation, and other issues regarding school curriculum reforms. It further researched school curriculum teaching methods and cooperated with the teaching and research office on teaching management.

The School Curriculum Construction Research Group consisted of the principal, teaching department, information research department, student office, teaching and research office leader, grade leaders, and teacher representatives. The school also employed the relevant course and teaching experts as consultants to participate in the consultations and discussions of significant projects. Some student representatives were invited to participate in curriculum management and evaluation.

The main tasks of the School Curriculum Construction Research Group in the development of the school-based curriculum included researching and improving the overall structure of the curriculum and discussing the optimization of the curriculum; studying and discussing the curriculum plan for each school year and providing consultation for its implementation; conducting further exploration of curriculum development; guiding the development and implementation of the new curriculum; conducting curriculum teaching research and course teaching evaluation; conducting curriculum evaluation on elective courses; assessing and evaluating teaching objectives, hours, content, methods, learning evaluation, elective selection methods, and course credits for elective courses; conducting research into teacher education, student selection of electives, learning results, and quality in the implementation of the school-based curriculum (elective courses); and conducting curriculum management and participating in teaching evaluation for elective courses.

In practice, currently, the school regulates the curriculum development and implementation procedures. There are curriculum proposals every semester; every proposal comes with an evaluation from the School Curriculum Construction Research Group, every evaluation has feedback from the applicant (teacher), and each piece of curriculum has its own implementation plan and tracking guidance process from the School Curriculum Construction Research Group. For the development of the school-based curriculum, the school also puts forward five goals: each subject must have a clear description of the curriculum objectives, detailed implementation requirements, a scientific content design, and a reasonable course evaluation plan, and must be provided with information on elective courses every year.

The school implemented the management of the mid-term inspection and final evaluation of the curriculum implementation. Mid-term inspection of the curricula implementation is conducted every semester. The School Curriculum Construction Research Group conducts mid-term inspections on the curriculum implementation through audits, student interviews, questionnaires, and teacher interviews. At the end of each semester, course evaluations in the form of student questionnaires are used to enhance teaching quality.

2.3.2.3 Course Categories

To enrich the choices offered to the students, strengthen the construction of school curriculum subjects, and encourage teachers to offer elective courses, Datong High School strives to build a curriculum around eight course groups. The school has formed seven categories that are relatively stable with a total of 103 courses.

In recent years, the school has scrutinized the existing course groups according to the above-mentioned eight major areas of global consciousness and national self-esteem, cooperation and competition, democracy and legal system, network awareness and network ethics, innovation awareness and practical ability, entrepreneurship and risk awareness, scientific spirit and humanities, and communication and cautiousness; in doing so, it has been able to reclassify the 100 or so courses in Table 2.5.

2.3.2.4 Refinement of a Single Course

At this stage, the implementation of the curriculum at Datong High School has focused on the quality of the school-based curriculum. Here, we can take the course titled “Ancient Chinese Architectural Culture” developed by a young teacher as an example. This course has been in development for over four years and has gone through three phases that are detailed as follows.

Initially, the teacher compiled teaching plans based on the framework for the history of ancient Chinese architecture in universities. However, since Chinese architecture textbooks used in universities focus on introducing architecture from before the Sui and Tang dynasties, the buildings mentioned no longer exist, which

Table 2.5 School-based curriculum structure in Shanghai Datong High School

Course	Fundamental course	Extended course			Research course	
		Subject development	Field expansion			
Language and literature	Language	Reading and writing	Zhang Ailing and Wang Anyi's writing on Shanghainese people; "Dream of the Red Chamber" and traditional culture; Wang Anyi's novels; foreign short story appreciation; Chinese and foreign prose reading; ancient poetry reading; famous works and movies	Social activity	Comprehensive course Topical research Epistemology	Modern Information Technology Application and Research Innovation laboratory Applied Science
	English	Conversational English	English translation; high school English writing instruction; English classics reading; English etiquette and oral test; intermediate spoken English, scientific English reading; English speed reading; second foreign language (German, Japanese, French)			
Mathematics	Mathematics	Mathematical thinking	Applied mathematics; mathematical statistics; TI mathematical technology; introductory calculus; probability theory and mathematical statistics; interesting mathematics; logic in mathematics; graph theory; mathematical model of risk decision and countermeasures; mathematics (Bilingual), computer graphics (mathematics)			

(continued)

Table 2.5 (continued)

Course	Fundamental course	Extended course		Research course	
		Subject development	Field expansion		
Natural sciences	Physics	Self-selected courses in physics, chemistry, etc.	Chemical experiment; applied chemistry; STS (science, technology, society); chemistry (Bilingual); life science experimental research; life science topical knowledge; life science (Bilingual); applied physics; physics experiment; TI technology in physics applications; a brief history of physics; urban development and environmental protection; intelligent transportation; biological defense		
	Chemistry				
	Biology				
	Science				
	Geography				
Social sciences	Politics	History, politics, etc.	Innovation management; insurance and risk; philosophical writings of 2000 years ago; basic knowledge of Deng Xiaoping theory; historical events; history (Bilingual); ancient Chinese architectural history; world's three major religions; world expo; Shanghai folk customs, psychology; ancient Chinese culture; life and law; American social culture (Bilingual); entrepreneurs and entrepreneurship; history of American film development		
	History				
	Society				

Technology	Labor technology		Preliminary robotic production; digital map production; film production; web page production and animation; web programming; advanced web page production; web technology and ethics; electronic publication production; VB programming; algorithms and data structures			
	Information technology					
Art		Art	Basic keyboard; guitar; indoor and outdoor design; sketching; flower arrangement			
Sports and fitness		Sports 1	Sports II; basketball; football; volleyball; table tennis; aerobics			
Comprehensive practice (such as projects and community services)						

leaves room for academic research. This is unsuitable for typical secondary school students since these issues are too professional and dry; therefore, the original framework could not be used. Thus, the young teacher developed a framework based on the "cognitive structure of students" and implemented a phase of gradual improvement. By referring to popular books on Chinese architectural culture, the teacher could restructure the course. Based on the principles of cultivating interest, popularity, and intuitiveness of courses, the teacher changed the original chronological-based system of architectural study into one based on architectural categories such as palace, garden, sacrificial, and mausoleum architecture, among other such architectural categories. The teacher also produced multimedia courseware for each topic that included many photos, and he also collected some videos to be shown in the classroom, thereby enhancing the intuitiveness and enjoyment of the curriculum content.

In the third phase, interactive and research-oriented learning context and textbooks were added. The teacher felt that although the course content was desirable to students, at best, it could only be said to be a series of qualified lectures on ancient architecture rather than a real course. The goal of an extensive curriculum is not only to broaden the knowledge of students but that it also be an effective way of improving the students' basic skills. This curriculum should also help students gain the ability to collect, process, and use information and help them form their national identity, an idea of citizenship, feelings of social responsibility, and innovation.

What can the course "Ancient Chinese Architecture" do? As a history teacher, it is his responsibility to help students form a sense of belonging and love for their national culture by recognizing their traditional culture. The course on ancient architectural history is a good way of guiding students toward understanding the diverse culture of ancient China. Therefore, the teacher changed the course from "Ancient Chinese Architecture" to "Ancient Chinese Architectural Culture" and expanded the curriculum content. Two additional inquiry classes were added to the curriculum content. One such class involved discussions on the differences between Chinese and Western garden art and aesthetics through case studies; it aimed at cultivating students' tolerance for different cultures and a thorough recognition of their own national culture. The other class involved discussions about preserving traditional cultural heritage to cultivate students' awareness on this topic. In the implementation of these two inquiry classes, the teacher provided certain resources and tips on finding other resources and guided the students toward exploring more specific topics.

While these classes were being developed, the teacher began preparation for the writing of the textbook, drawing on the characteristics of the textbooks written after the second period of reforms, as well as those of textbooks from Hong Kong and Taiwan. Later, additional reading materials, source materials for further exploration, and questions for further inquiry were provided to the students by this teacher.

In this cyclical process of finalizing curriculum through reflection and adjustment, a unique and specialized curriculum emerged. The philosophy, awareness, and abilities of teachers in terms of the curriculum have made significant progress,

thereby furthering the school-based curriculum development by laying a solid foundation for curriculum resources as well as talent resources. Currently, the school has formed a group of excellent specialty courses such as "Theory of Knowledge," "STS (Science, Technology, Society)," "Datong Culture," "Network Civilization," "Ten Lectures on Ancient Chinese Culture," "Ancient Chinese Architectural Culture," and "Exploring Historical Events and People."

2.3.2.5 Course Evaluation

The school regularly collects feedback from students on the courses. Information collection from students includes the following dimensions: Do the curriculum objectives promote student development? Is the curriculum content interesting for the students? Is the curriculum content clear? Can the curriculum content achieve the curriculum objectives? Are the teaching methods of the course suitable for the students? Does the teaching method allow students to participate actively? What are the fundamental qualities and responsibilities of the teacher(s)? Is the evaluation method of the course reasonable? Are there any gains from studying this course?

2.3.2.6 Curriculum Management

The management from the selection of courses to the final stage of inspection include the following processes:

- The proposal for elective courses is conducted once per semester.
- Students can choose their own courses per their own interests and learning goals.
- In addition to the required courses, each student must choose two literacy elective courses each semester. In the entire high school period, at least one subject is in the liberal arts (language literature, social sciences, art) and at least one subject is in the sciences (mathematics, natural sciences, technology).
- In the entire high school period, students must choose a bilingual course under the literacy category. The school determines the timing of the course per their ongoing situation.
- In addition to courses prescribed by the school, students can use their off-campus time for self-learning. These are not included in the school's curriculum plans and can serve as part of the students' academic journeys.

The school implemented a credit system and an academic evaluation system as part of the curriculum management system. The credits consist of basic credits and reward credits: (1) Basic credits are the basic evaluation indicators for education and teaching that students must meet per the curriculum plan. These are credits that can be obtained by passing tests or examinations. (2) Teaching classes are used as the basis of reward credits. The top 10% or so of the most exceptional students will receive one credit per year. Those with outstanding results can receive two or more credits. For teaching periods that are one semester long, the reward is 0.5 credits,

while those with outstanding results can receive one or more credits. Students who have won awards in academic competitions or who have outstanding student abilities can earn more reward credits. Reward credits are assessed based on "knowledge and ability acquisition," learning attitude, and personality development of the students.

2.3.3 Characteristics of the Third Period of School-Based Curriculum

The school-based curriculum during this period has flourished nationwide. The main characteristics are summarized as follows.

First, the value orientation, the consistency with the goal of educating people, and the systemic nature of school-based curriculum development have been greatly enhanced. If school-based curriculum in the first two periods was more geared toward "doing," schools in this period began to think more about the relationship between school-based curriculum and school-wide educational goals and the national curriculum. Many schools have begun to clarify and question the value of school-based curriculum development and position it to "improve the adaptability of the curriculum, promote the growth of the students' individuality; enhance the teachers' curriculum awareness, promote the professional development of teachers; realize curriculum innovation by schools and promote the characteristics of the schools" (Zhong, Cui, & Wu, 2003). The effect of the national curriculum on the positioning of the school-based curriculum has had a significant impact on the position of schools toward the school-based curriculum. Schools have set up the school-based curriculum in a way that helps it adapt to the diverse development of students; there is still a need to study the diverse development needs of students. From this point, curriculum development by schools began to further consider how to use mechanisms to ensure the continuity of curriculum development, the scientific nature of curriculum selection, and the effectiveness of curriculum teaching. School-based curriculum development has evolved into a standardized development system in mainland China that covers course proposals, course approval, course selection, teaching monitoring, and teaching evaluation.

Second, the thinking has moved from the quantity to the quality of courses. School-based curriculum has gone through a period characterized by the idea of the more, the better. However, the curriculum development construction process of Datong High School reflects the fact that currently, school-based curriculum development in China is shifting away from the pursuit of quantity toward the pursuit of quality. For some Chinese schools at the forefront of this shift, "school-based curriculum construction is not a disorderly process in pursuit of quantity, but rather, it is based on the school's educational situation (education philosophy, faculty analysis, curriculum resource utilization and development condition, students' learning needs) to establish their own curriculum development guiding ideology." When

the curriculum construction has rich resources and specialty courses, schools should determine how to make these subjects play a role in the educational goals and curriculum philosophy of the school. This will help to form a series of courses that reflect the educational goals and move from a period of relatively unhampered development into one of scientific development centered on these objectives and school characteristics. This pursuit of course quality is not only the quality of the overall school-based curriculum development process but also the quality of the individual courses, the students' experience in these courses, and the school starting to focus on what the students have learned.

Third, schools are more concerned with the construction of a school-based curriculum as a process for improving the curriculum capabilities of the school rather than as an undertaking in itself. In China, because principals and teachers have long solely implemented mandatory curriculum plans, curriculum capabilities are limited. Thus, the working style of the principals and teachers is too dependent and focused on taking orders. Their enthusiasm and creativity regarding independent judgment and creativity are limited. Coupled with the influence from education in the former Soviet Union, the phenomenon of ignoring curriculum development has long existed among Chinese teacher education philosophies, which has led to teachers lacking the required curriculum knowledge and training (Wu, 2002). With the expansion of school curriculum autonomy, curriculum-building capacity is critical. If a school's curriculum-building capacity is insufficient, the decentralization of the curriculum will be dangerous; it will directly affect the quality of education that students receive. The research on school-based curriculum is characterized by the desire to determine how to equip teachers with the appropriate professional qualities, knowledge, experience, and the necessary curriculum capabilities.

According to the research by Cui (2002), curriculum planning, designing, implementation, evaluation, and improvement capabilities in a school mainly involve the following aspects: First, the faculty and staff must have the appropriate professional qualities. As professionals, the principals and teachers must understand the concept of liberal education and possess the professional attitudes of openness, democracy, spirit, cooperation, and innovation in the face of challenge. Second, they must have the appropriate knowledge and experience. In particular, they should understand some key concepts about curriculum development and have some knowledge about child development and some experience in curriculum development. Third, they must have the necessary course skills. These course skills include abilities to identify the school's objectives for student cultivation, identify the curriculum needs in different situations, understand the collaborators' curriculum skills and tasks, determine and present goals, select and organize content, implement skills and innovate, evaluate and improve the courses, use and develop on-site resources, make reasonable course decisions, and possess necessary dialogue and communication skills (Cui, Xia, & Wang, 2011).

In addition, school-based curriculum must be integrated with information technology and new forms of learning. In recent years, with the development of new curriculum forms such as STEAM and the introduction of international schools,

international courses such as the IB Program in bilingual schools, project-based learning, gamified learning, and other new forms of learning, school-based curricula have begun to display more variety. In the first and second periods, the courses offered were more local in nature, such as courses on small inventions and production, but in recent years, school-based curricula have displayed integration with information technology that has transcended discipline boundaries and helped to realize interdisciplinary curriculum integration. This has stimulated students to solve real problems. Examples from Datong High School include a digital art design course titled "Cross-stitch and Graphics Design," which integrates information technology with art; a 3D design course titled "Interior Design and 3D Production," which integrates information design with industrial design; a network civilization course titled "Network Civilization," which integrates information technology and sociology; and a digital music composition course titled "Digital Music Composition," which integrates information technology with music. The grassroots units of the school's curriculum are divided into subject areas, that is, the subject teaching and research groups. This requires schools to play a coordination and curriculum management role in the integration of subject areas, so that there will be integration in the development of the school-based curriculum.

Finally, there has been a transition of curriculum development and resource-sharing mechanisms from being limited to the school to inter-school or regional implementation. School-based curriculum development, as its name implies, is curriculum development based on schools. However, over the years, various places, including Shanghai, have begun to show the characteristics of inter-school cooperation and regional integration of comprehensive platforms. That is, the district department of education plays a role in integrating the most successful courses of each school into a standardized form that can be offered in other schools. There are several reasons for the emergence of this structure. Among schools, curriculum resources are unevenly distributed and curriculum construction abilities vary greatly. Schools may want to offer students a comprehensive and reasonable course combination but may not be able to do so due to limits in the number of teachers, capabilities, and curriculum resources. In this sense, the district serves as a curriculum platform to guide schools toward forming alliances based on relative division of labor and cooperative development to establish a list of regional school-based curriculum subjects. This can facilitate resource sharing, reduce waste, and avoid "small and comprehensive" style curriculum development.

Curriculum change in any country inevitably involves problems, new ideas, challenges, and opportunities. The development of school-based curriculum in China has just begun its path. With detailed and lively school cases elaborated in different periods, school vitality through curriculum changes has been largely restored and increased. The real school cases offer a rare but wider window looking into the black box of school-based curriculum implementation in China.

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Chapter 3
Practicing School-Based Curriculum in China

Donghui Zheng and Yunhuo Cui

Since 2001, school-based curriculum has been newly incorporated into the national curriculum plans, and has become a compulsory program for every primary and secondary school student; school-based curriculum has become widely practiced in China. In practice, the Chinese program was proposed in response to the value appeal, development path, and assessment strategy of the school-based curriculum, which solved some major problems related to its development.

3.1 Guiding Values in School-Based Curriculum

School-based curriculum is not merely an extension of the national curriculum, just the combination of specific subjects, nor an accessory to examinations and competition; it has its own unique value. While the national curriculum focuses on common foundations and unified requirements, the school-based curriculum focuses on the differences among students and their interests. Whereas the national curriculum is stipulated by the state and reflects the will of the nation, the school-based curriculum is determined by the school and reflects the characteristics of the school and personality of the students. Experts develop the national curriculum; the development of the school-based curriculum is done by teachers and highlights local characteristics. Based on this, school-based curriculum pursues the following three values.

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3.1.1 Students First: Catering to Diverse Needs of Students for Their Personalized Development

How can the relationship between the curriculum and the needs of children be managed, and how can the functional orientation of the curriculum be determined? As early as 1902, Dewey noted two types of curricular viewpoints. One is that children passively accommodate or accept courses, and the other is that children are the starting point, central stakeholders, and the ones that give curriculum purpose (Dewey, 1902). That is to say, the curriculum does not exist to force students to adapt, nor is it meant to meet the various needs of students unconditionally, but instead, it should be a limited implementation to meet the needs of students. A school-based curriculum is mainly developed by teachers in schools, subject to available school conditions and community resources and the competence of the teachers. It focuses on the reasonable and diverse needs of students during their growth and development process. In a nutshell, the school-based curriculum meets the development needs of students, focusing on their interests.

Interest is innate. Dewey kicked off from human instincts and divided the concept of interest into four categories: interest in conversation or communication, interest in inquiry or discovery, interest in production or construction, and interest in artistic expression. Interest is a natural resource and uninvested capital; the active growth of children depends on its use (Dewey, 2005). That is to say, these interests are naturally endowed resources. The existence of these interests is an unused educational resource, and children's vigorous growth depends on its use. Psychological research tells us that interests from early childhood and the early school years (primary school period) are multi-faceted, direct, temporary, and unstable. Children easily find objects or activities that are intuitive, vivid, and stimulating to be interesting. The differentiation and orientation of interests occur during the juvenile and early adolescent period (secondary school period). Interests in this period are mainly those developed in the earlier period; the development of indirect interest is gradually enhanced, stable interests are progressively formed, and the level of interest is continuously improved. The transition from pointing out external features of objects and the way activities are conducted to the intrinsic connections of items and the meaning behind activities are both socially significant and challenging. School-based curriculum provides children at different stages with opportunities to discover, express, convey, and develop their interests, thereby promoting their individualized and healthy growth.

According to the Chinese school-based curriculum policy, opportunities are provided mainly through the following methods.

First, it lets students participate in school-based curriculum development teams or committees to ensure that they have decision-making power regarding their interests and resource needs.

Second, it uses methods such as observation, interviews, questionnaires, assessments, and the like to obtain and evaluate information on the students' interests and to clarify the scope, degree, or type of interests that they have.

Furthermore, it fully considers the procedural nature of the students' interest development. Curriculum implementation ensures the right of students to choose their own courses and, at the same time, ensures the adaptability of objective setting, content arrangement, teaching methods, assessment methods, and management methods. Taking the implementation method as an example, unstructured gamification or activity centers can be used for lower primary school grades, relatively more structured interest groups can be used for those in the upper grades, and elective courses can be directly implemented for students in the secondary school levels.

3.1.2 School Characteristics to Shape the Curriculum

In China, primary and journal high schools often pursue developing a school with distinctive characteristics. The so-called school characteristics are the personality traits of a school that distinguishes it from other schools. This heterogeneity can be gradually revealed in the school-based and teacher-centered school-based curriculum development process. Since school-based curriculum emphasizes respect for the uniqueness and diversity of teachers and students in a school and integrates itself with the school's educational philosophy, it contributes to the creation and development of school traditions and characteristics (Wu, 2002). The "Basic Education Reform Outline (Trail)" clearly states that "when schools implement national and local curriculum, they should take into account the specific local conditions and economic development, and combine the traditions and advantages of the school along with the interests and needs of the students to develop or select courses that are suitable for the school" (Ministry of Education of China, 2001a). That is the development process of the school-based curriculum. Although this process is aimed at developing a school-based curriculum suitable for students, the school fully considers its history and culture and the quality of school experiences during the process, which can be used to further clarify the peculiarity of school's educational idea and strategies, and the content and vehicles for the development of the school's characteristics. In short, school-based curriculum development is a process of refining school characteristics.

Of course, the school-based curriculum is developed in accordance with the goal of educating students and meeting their needs. By practicing and honing skills for its development, these courses will become ones that the school will be known for and recognized by teachers, students, parents, and society, thereby becoming part of the school's identity. That is to say, the specific school-based curriculum has the characteristics of the school, and its implementation updates and optimizes the formation of school characteristics.

3.1.3 Cultural Mission: Understanding and Passing on Local Culture That Represents Progress

A local culture is a regional form of civilization that has been accumulated through long-term historical evolution and represents the unique living habits, ways of thinking, spiritual concepts, and social customs of people in the region. It imperceptibly affects the lives of local people and plays a vital role in the growth and development of individuals. Passing on outstanding local culture, making it a source of development for the youth in campus, and spreading it among youth groups are the responsibility of schools. School-based curriculum often bears this responsibility because it is developed by the school itself and has the unique advantage of being able to impart and make innovations to the local culture.

Local culture is an essential source for school-based curriculum. It can be directly transformed into curriculum content and reflected in the school-based curriculum. It can also be incorporated into the school-based curriculum as a hidden core of spirit, philosophy, and values. In fact, many primary and secondary schools have already done this. For example, school-based courses on dialects and intangible cultural heritage are designed with local features such as historical monuments, folk customs, architectural gardens, folk art, well-known individuals, and the like to meet the need to integrate students into the local culture. What is even more commendable is that some schools use the spirit of local culture as the source for the school-based curriculum objectives. This spirit guides the overall school-based curriculum planning and preparation of various school-based curricula, making local culture the soul of these programs.

3.2 Procedures and Types of School-Based Curriculum Development

Which kinds of methods can be used to develop the above-mentioned type of school-based curriculum? This question needs to be answered on two levels. The first is to clarify the specific development steps or processes, that is, the development procedures. The second is to clarify the form of work used in the process, that is, the type of development.

3.2.1 General Procedure for School-Based Curriculum Development

School-based curriculum development is a highly sophisticated and professional activity. Although it involves the selection of various learning materials, the design, preparation, and implementation of the curriculum, and requires the participation of

multiple factors and entities, there still exists a generally recognized operational linkage (Wu, 2003). The following operational procedures are relatively highly recognized.

One is Tomas's (1978) four steps. First, a curriculum development committee or a similar working group is set up to undertake the relevant planning and decision-making. Second, the members and development procedures involved in the curriculum development work are established. The curriculum direction, objectives, and plans through group discussions with the participating members are then formulated. Finally, the actual work of curriculum development according to the plan is performed (Tomas, 1978).

Another is the eight steps of the Organization for Economic Cooperation and Development (OECD). These include analyzing students; analyzing resources and constraints; setting overall objectives; setting special objectives; identifying methods and tools; evaluating students' learning; allocating resources, personnel, equipment, and time; and implementation, assessment, and revision (OECD, 1979). Although these steps are logically sequential, in practice, any step can be used as the starting point, and each step must be considered in conjunction with the others.

A third is the five steps by Skilbeck. First, the school must analyze the situation, that is, analyze all internal and external factors to determine whether the school is suitable for school-based curriculum development. Second, it must formulate the goals suitable for school-based curriculum development based on the results of the analysis. Third, the school should come up with a curriculum plan based on the school-based curriculum development goals. Fourth, it should interpret and deliver the curriculum plan, and fifth, track the implementation of the curriculum plan and make timely revisions (Skilbeck, 1984). Schools can start at any of these steps, or they can implement multiple steps concurrently.

In view of the actual situation of curriculum development in primary and secondary schools in China and referring to the common elements of the three previously mentioned viewpoints such as situation analysis, objective formulation, plan formulation, implementation and assessment schemes, and so on, by starting from the curriculum issues that need to be solved, the six-step development process was established (Cui & Xia, 2004). This six-step development process involves establishing the organization, assessing needs, formulating the objectives, designing the program, interpreting and implementing the program, and assessing and revising the program. For more than a decade, this process has been widely recognized and used in primary and secondary schools across China.

3.2.1.1 Establishing the Organization

To answer the question of "who will undertake the development," there needs to be an appropriate organizational guarantee to formalize the changes. Generally, curriculum committees or special groups will be established to take overall responsibility for school-based curriculum development with two main responsibilities. On the one hand, this type of committee promotes and mobilizes curriculum development,

enhances communication, dialogue, and understanding, and enhances the cohesiveness and sense of belonging of stakeholders. On the other hand, it participates in the development of the school-based curriculum, makes decisions on key issues, provides support, guidance, and services for curriculum planning, implementation, and assessment. For the organization to fully exercise these responsibilities, the composition of the participating members must emphasize broad representation with the teachers as the mainstay and include school administrators, students, parents, interested community members, or curriculum experts as representatives. The work should be done in the spirit of democracy, openness, and cooperation.

3.2.1.2 Assessing Needs and Resources

With regard to the question of "for whom should it be developed," it is necessary to assess the needs of students and the resources that can be used. The needs of students include interests, hobbies, and the curriculum needs that arise from these interests and hobbies. The resources available refer to school conditions that can satisfy the needs of the students and the situation of the community and parents. Assessments often use questionnaires or interviews as well as analysis methods such as the SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis to understand the conditions and limitations of school-based curriculum development. Such conditions and limitations include the distribution of student interests, experience and abilities of teachers, various curriculum materials and equipment, the flexibility of curriculum plans, and parental support. Aside from helping to clarify how schools and teachers can address the needs of students, assessments also help to clarify the goals that the curriculum can help to achieve.

3.2.1.3 Formulating the Objectives

The key issue that needs to be addressed in this step is how to translate the results of the needs and resources assessment into the overall objective of the school-based curriculum. Instead of merely reflecting the results of the needs assessment directly in the overall objectives of the school-based curriculum, said results should be screened based on the educational quality expected of students and the educational objectives of schools (school motto or educational philosophy) set by the national and local educational authorities. Afterward, the objectives will be transformed, integrated, and condensed into those that the school-based curriculum can help to achieve. The description of objectives is often expressed in a behavioral representation, that is, the behavioral characterization that the students will express after a certain period (such as in the 6 years of primary school, 3 years of junior high school, or 3 years of senior high school) due to the school-based curriculum.

3.2.1.4 Designing the Program

Once the objectives have been determined, the people in charge can consider how to write a "Program of School-based Curriculum Planning" based on said objectives. This step involves a focus on the objectives, clarification of the source of the objectives, and description of the specific contents of the objectives. The committee then constructs the appropriate curriculum framework in accordance with the objectives.

By starting from the objectives, the committee can consider the adaptation of the curriculum implementation, objectives assessment, and safeguards. Integration of the above results in a comprehensive program consists of the following parts:

- background analysis of school-based curriculum development, that is, the necessity and possibility of development;
- overall objective of the school-based curriculum;
- curriculum structure and categories set according to the objectives including the type, number, lesson periods, and restrictions of school-based courses;
- recommendations for implementation and assessment, provision to teachers of the relevant policy or action guidelines for implementation and assessment; and
- safeguards, that is, the clarification of the safeguards from the perspective of organizational, institutional, manpower, material, and financial aspects to ensure the smooth implementation of the school-based curriculum.

3.2.1.5 Interpreting and Implementing the Program

The purpose of the interpretation is to fully mobilize the enthusiasm of teachers and students to implement the program, and to encourage both parties to actively participate in the development of school-based curriculum within the framework of the program. The implementation focuses on two aspects. First, the school arranges the curriculum organization and implementation work, such as by establishing the lesson periods and setting of school-based courses, teacher allocation, and planning for selections by students. The second step is to empower, train, and guide the teachers to take a standardized approach in designing the curriculum syllabus and teaching plans in a way that will resonate with students.

3.2.1.6 Assessing and Revising the Program

The assessment here not only identifies the results after the implementation of the program but also includes the diagnosis, tracking, monitoring, and feedback during the preparation and implementation of the program. The purpose is to examine the extent to which the program itself, the implementation process, and the results have achieved the objectives and how to revise the objectives promptly based on how the implementation is progressing. Through assessment, the necessary revisions and

improvements can be made to the program, such as revisions to the objectives and curriculum structure, increase or decrease course categories, increase or decrease of lesson periods, and changes to the curriculum implementation methods. It should be pointed out here that the assessment is an internal assessment performed by the school and does not include the program deliberation performed by the education administration; this is a process of self-improvement by the school.

The above six steps are concise and coherent rather than being rigid, linear action steps. There should be a dynamic process of continuous follow-up. Schools can make adjustments to the sequence of steps according to the curriculum issues that need to be addressed as well as make changes to the content and its focus. However, the school cannot simplify or skip certain steps at will. The process needs to be approached as a single, indivisible process. The school needs to take a systematic approach to actively and steadily carry out the development work, and make the curriculum development process one that engages broad participation and brainstorming instead of only relying on the behavior or opinions of one group or another (Cui & Xia, 2004).

3.2.2 Development Type of School-Based Curriculum

The development type in the case of the planning procedure of the curriculum structure and categories refers to the method of developing a (or a type of) school-based curriculum. This involves the questions of who develops (development authority), how much to develop (scope of development), and how to develop (method of development). These constitute the three classification dimensions of the types of school-based curriculum development.

There are four groups of stakeholders involved as the development authority: individual teachers, teacher groups, the entire body of teachers, or cooperative organizations consisting of external institutions or individuals. This stage is usually undertaken by the teachers themselves, teacher groups, or cooperating external entities. Regarding the scope of development, there are curriculum structure development types, from small to large, of single courses, categories of courses, and all courses. Currently, most development is happening at the single course or categories of courses level. Development method can be divided into curriculum selection, curriculum adaptation, curriculum integration, curriculum supplementation, curriculum development, and curriculum creation.

The following figure presents the various combinations of these classifications (Fig. 3.1).

As seen in the above figure, there are various combinations that form school-based curriculum development types, such as teacher groups developing a single course in the form of expansion or internal and external entities cooperating to create a curriculum that covers all courses. Among these options, the development method is an important dimension that determines the quality of the school-based curriculum, and is also the dimension that primary and secondary schools and teachers need

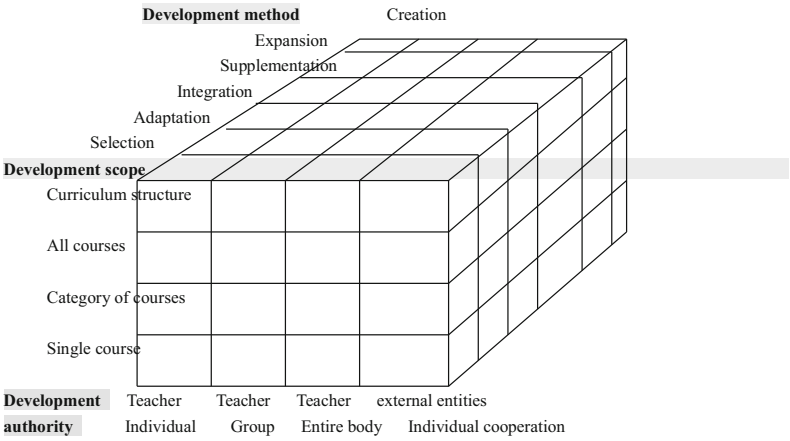

Fig. 3.1 Structural model of school-based curriculum development types

to master and use flexibly. For this reason, the six development methods are further explained below.

3.2.2.1 Curriculum Selection

Curriculum selection is the process of selecting one of the following categories of courses to become the school-based curriculum that best meets the needs of the students. Schools and teachers often use this method in cases where school-based curriculum development has just begun, or the curriculum development abilities of the people in charge are weak. For example, the teacher group could determine that, per the program of the school-based curriculum plan, it is necessary to offer a brush calligraphy course, but because their experience and curriculum resources limit them, they might look to other schools for similar courses. If such courses exist, they could choose to transplant said courses and gradually build up the program from there. Of course, curriculum selection is not possible unless at least two conditions are present. The first is that teachers must have the power and ability to make selections and the second is that there are courses to choose from.

3.2.2.2 Curriculum Adaptation

Curriculum adaptation is the modification of a course (either by oneself or someone else) by a school or teacher to develop it into a course that suits the needs of the school or teachers. It includes the introduction of courses from international schools via translation and localization or making improvements to courses from other schools. Curriculum adaptation generally involves modification to one or more of the following aspects: objectives, content selection and organization,

implementation methods, assessment methods, and curriculum resources. For example, the teacher who offered a brush calligraphy course for one semester found that some contents are too difficult and that some implementation methods are not suitable for the students. The teacher could revise and adapt the courses based on these observations to form a new brush calligraphy course.

3.2.2.3 Curriculum Integration

Curriculum integration is the organization of knowledge or skills from two or more disciplines into a new curriculum on an important topic. Such a curriculum can make up for the lack of national courses on sub-topics. For example, STEM courses have emerged in primary and secondary schools in recent years. At the same time, the latest topics, such as smog governance, artificial intelligence and the human crisis, online culture, youth volunteerism, and other such topics, can also be introduced into school-based courses to develop interdisciplinary or transdisciplinary school-based courses.

3.2.2.4 Curriculum Supplementation

This method is used to supplement deficiencies of the existing courses (using one's own judgment or the judgment of others), mend the original school-based curriculum, or develope a new school-based curriculum. Using the curriculum content and the teaching materials used as a foundation, curriculum supplementation can be a corrective measure. For example, if the copybooks used in the brush calligraphy course were incorrect, they could be corrected over time. This process can also be remedial, such as by implementing a course without using copybooks, they could be superimposed. In such a case, the use of copybooks should be increased, and perhaps a new calligraphy course could even be offered. In addition, the curriculum as a whole can supplement the national curriculum through courses such as conversational English, composition writing, and cultural history of mathematics. It can also supplement the existing school-based curriculum through such things as supplementing the brush calligraphy course by adding a pen calligraphy course.

3.2.2.5 Curriculum Development

This method expands on the advantages of the existing curriculum (by oneself or from others) to form a new school-based curriculum. It is possible to expand the national curriculum such as through mathematical thought, Tang Dynasty poetry appreciation, and the like, as well as school-based curricula such as through Chess I and Chess II. Regarding the expansion of content, it is possible to broaden the breadth of the content such as expanding the "brush calligraphy" into "brush and pen

calligraphy," or increase the depth of the content such as expanding "brush calligraphy" into "brush calligraphy composition."

3.2.2.6 Curriculum Creation

Creation refers to the creative development of a school-based curriculum within the framework of the program of school-based curriculum planning. It is only a relative concept; with regard to personalization, the more personalized the curriculum, the more that it can reflect the creation of a new one. Many courses with school characteristics, local cultural personality, or contemporary characteristics belong in this category. Examples include children's soccer developed by schools with sporty characteristics, local intangible cultural heritage courses, and "One Belt One Road."

The difficulty of the above six development methods gradually increases as we move through the list. The difficulty of curriculum selection is relatively low because it only involves the selection of one curriculum among several alternative curricula. Curriculum adaptation and integration involve the processing of existing curriculum through additions, subtractions, and reorganizations. Curriculum supplementation and expansion supplement and expand the existing curriculum to produce a new curriculum or curriculum content. Curriculum creation is the most challenging development method because it requires creating a new curriculum per certain norms or techniques.

In actuality, when many schools or teachers practice specific curriculum development activities, they do not use a fixed method. Instead, they choose one or more suitable methods for the development based on the quality requirements of their specific curriculum.

3.3 School-Based Curriculum Program Design

There are two types of curriculum outcomes through implementing the school-based curriculum development process and using the relevant development type. One is the program of school-based curriculum planning at the school level, and the other is the school-based curriculum syllabus at the teacher level. The following is a detailed introduction to the program design process and performance styles of these two types.

3.3.1 The School Has a "Tailor-Made" Program of School-Based Curriculum Planning

The program of school-based curriculum planning is a general description of the school-based curriculum development and its results. It mainly describes the five aspects that were mentioned in the "program design" section of the development. A school's program of school-based curriculum planning clearly explains the contents with regard to these five aspects, among which background analysis, curriculum objectives, and curriculum structure are the key points.

First, the development begins with the study of two critical issues: the background analysis for the development itself and the clarification of the necessity and possibility of planning. The first refers to the students' interests or needs. This is the starting point for school-based curriculum development and therefore must be considered. Through questionnaires, interviews, symposiums, and the like, the people in charge seek to understand the interests or needs of the students and analyze and organize the types and reasons for these interests or needs. The second refers to the currently available curricular resources. This process is used to examine the possibilities and the extent to which resources available to the school and community can meet the determined interests or needs of the students. The curriculum resources of the school and community are mainly evaluated in two aspects; one is human resources, and the other is non-human resources (including financial resources, material resources, time, space, and information). Regarding human resources, the first thing to consider is the willingness of teachers to engage in school-based curriculum development. In particular, information on the interests of the teachers can be obtained through voluntary registration, questionnaires, or other methods. Second, parent committees and other organizations can invite parents with the appropriate experience or abilities to participate in the school-based curriculum development. In addition, community members can be mobilized to support and participate in the school-based curriculum development. Non-human resources are mainly evaluated based on existing funds, facilities, equipment, venues, schedules, network information, and other such resources available to the school and community; the principle of identify which resources are available and which need to be further tapped.

By addressing these two issues, the school can recognize the gap between reality and its desires, clarify what it should do and in which areas it should be excelling but is not, and strike a dynamic balance between what it wants to do and what it can do. For example, Xishan Senior High School found that more than half of their students have strong curricular needs in terms of "innovation ability, special interests, learning to communicate, life skills, patience, and team leadership," whereas the areas of "school cognition, local culture, and academic competitions," which the school has always emphasized, are not considered to be as important by the students. Through resource assessment, it was confirmed that the school is qualified to meet these curricular needs. As a result, the school made revisions to the original school-based curriculum to appropriately match the students' needs.

Second, the school clarified its educational philosophy and turned it into school-based curriculum objectives according to that background analysis. The direction of the national curriculum applies to all schools in the same manner, but the school determines the kind of students they wish to cultivate through educational policy. The school should have its own position, that is, each school should clarify its own educational philosophy. To clarify its educational philosophy, it is necessary for the school to organize, determine, and refine ideas from the past and the present to arrive at an educational philosophy that reflects both the tradition of the school and the requirements of the times. The school can collect wisdom from different sources such as combing through historical materials, questionnaires and interviews administered to retired or transferred teachers, and symposiums for alumni. Gathering wisdom from all such sources will allow the school to gradually narrow down its educational philosophy while gaining the acceptance and recognition of its stakeholders. For example, on the basis of combing through a hundred years' worth of school history, Xishan High School extracted its educational philosophy, which has been tempered for a hundred years. This philosophy further adapted to the times and was continuously reflected upon, which resulted in the educational philosophy of "modest and courteous, educated, broad-minded, lofty aspirations." Thus, in this school, the school-based curriculum can be analyzed in reference to the educational philosophy via the curriculum needs of students to confirm the overall objectives, which are: learn to communicate, improve team leadership skills, experience inquiry, enhance the spirit of innovation, make choices, develop a career, facilitate love for life, develop healthy interests, develop a self-identity, and have a strong psychological quality.

Furthermore, the overall objectives can be considered in-depth in order to construct the curriculum structure. Each objective is sorted into its corresponding category, and each course category is given a label to ensure that there are no repetitions, no crossovers, and no omissions. Some courses are arranged into category, and lesson periods and teaching methods are prescribed to form the overall curriculum structure. The curriculum structure is thus open and the course categories can be increased or decreased according to changes of the times, student needs, or the status of the curriculum construction. For example, Xishan High School set up five restricted courses (team leadership, entrepreneurial design, chorus, speech, physique) and five optional courses (social aspects, cutting-edge technology, life skills, special interests, psychological education). The school stipulated that each student must select at least three courses in the restricted category within 3 years and at least three courses in the optional category. Student performance in these courses is recorded and used as a basis for their graduation.

Finally, specific recommendations for the implementation and assessment of the school-based curriculum are provided along with the appropriate safeguards to ensure that the curriculum structure becomes the curriculum that students will experience. Suggestions and measures are mainly provided based on issues such as "how do students choose courses," "how do teachers design and implement the curriculum," "how to assess courses and student learning," "how to assess the

teaching," and "what kind of organization and system should be established to management the curriculum."

It can be seen that the preparation for the "Program of School-based Curriculum Planning" is a form of "system engineering" that comprehensively considers a wide range of factors; it is not a one-step process. It is a scientific, open, and democratic decision-making process of school-based curriculum development, and the school should follow up and evaluate the implementation of the school-based curriculum and continuously correct, improve, and even re-develop.

3.3.2 "Standardized" School-Based Curriculum Syllabus Design by Teachers

Within the framework of the program of school-based curriculum planning, teachers employ various development methods to design a school-based curriculum for each semester. The result of the output is the "curriculum syllabus" rather than "school-based teaching materials," and it is based on the following two aspects.

The first aspect is the seriousness and limitations of the teaching materials. In China, teaching materials "refer to the textbooks (including electronic teaching materials and atlases) used for classroom teaching in primary and secondary schools and the necessary teaching aids" (Ministry of Education of China, 2001b). They also include "student books included in the 'Primary and Secondary Teaching Books Catalog' of the Ministry of Education and provincial education administrative department" (State Planning Commission, 2001). This material is a special product; its preparation, publication, distribution, and selection must comply with certain procedures and regulations. Although the National Education Administration does not have specific provisions for the preparation, review, and use of school-based curriculum products, "school-based curriculum products" cannot be considered as "school-based teaching materials" considering the particularity of "student books" and the inherent seriousness of textbooks. In addition and more importantly, teaching materials mainly present the contents and methods of student learning are hardly concerned with the objectives and assessment questions, or the core content, of the curriculum.

The second aspect is the importance of the curriculum syllabus for curriculum construction. The "curriculum syllabus" refers to the text of the basic elements of the objectives, content, and assessment of a curriculum in the form of an outline. It is a curriculum plan that reflects the consistency of the overall planning of the school-based curriculum and specific courses, avoiding randomness in the school-based curriculum development process. It is a blueprint that helps teachers to examine a course as a whole, to think like an expert, to construct a course based on the objectives, to select and organize content, and to implement and evaluate a course, thereby avoiding the mainstream practice of "teaching for content." In addition, it is a cognitive map that helps students define the objectives, main content, and teaching

arrangements of the course before they begin their studies so that they can actively plan their own learning, and a communication tool that facilitates communication between the curriculum development team, the teachers, and the students during the design and implementation process.

How, then, does a teacher prepare a curriculum syllabus? Generally speaking, the outline consistently answers the questions "Where do I want to take the students?", "Which materials or activities do I need to provide to help students get there faster and better?", "How will I get there with my students?", and "How do I know that the students have arrived there?" The outline is gradually constructed as the four questions are answered.

The first step is to determine the objectives. School-based courses do not have curriculum standards, and they cannot be broken down and determined from the curriculum standards of the disciplines that are stipulated in the national curriculum. The determination of the objectives is mainly based on three factors. One is the definition of the key abilities of the students within the context of the overall objectives of the school-based course, the second is the study of the needs of the students, and the third is the analysis of available resources. By integrating these three factors and taking the students as the main stakeholders, teachers can state the performance and level of these factors such as with the level awareness that should be achieved. The final determined objectives should meet four criteria: completeness (Do the objectives include all important course outcomes?), relevance (Are the objectives consistent with the overall objectives of the school?), impartiality (Are the objectives consistent with the principle of fairness in learning?), and feasibility (Are the objectives aligned with the students' abilities, available time, available resources, etc.?) (Miller, Linn, & Gronlund, 2013).

The second step is the selection and organization of content based on the determined objectives. First, materials that are realistic, forward-oriented, relevant, or challenging are selected. They are then organized in the form of topics or questions. Finally, these contents are arranged based on the psychological development characteristics of the students.

The third step is to design the implementation of the content. Curriculum implementation involves the arrangement of learning topics and activities by class scheduling, teaching and learning methods, and so on. The focus is on the diversification of implementation methods and matching them with the course contents so that students can achieve the desired objectives. For example, a school could consider giving children a wealth of learning opportunities, especially those that are not available in the national curriculum such as through brainstorming to construct conceptual map, mark production (tools) then live demonstrations, live reports, stage shows, and so on.

The fourth step is to plan assessment activities around the objectives. The course assessment mainly covers three themes: "How to determine where the objectives have been realized," "What assessment tasks can be used to obtain accurate information," and "What kind of assessment method can help students perform better." The focus is on designing two types of assessment activities based on the objectives. One is a formative assessment that helps students better achieve their objectives; it

collects procedural data or information. The other is a task or tool for assessing the final learning outcomes of students; it detects the degree to which the objectives have been met.

After undergoing the above four steps, what kind of curriculum syllabus will the teachers develop? To illustrate this, an excerpt of the curriculum syllabus of the "Green Dream DIY" from Zhenming Central Primary School in Ningbo, Zhejiang Province has been provided (see Table 3.1).

It can be seen that the curriculum objectives are the soul of the outline, and several other steps are carried out around them. Sometimes, to better comprehend the degree of objectives achievement, the fourth step can be cycled back to the second step, thereby highlighting the assessment of the implementation and content. In any case, the matching of content, implementation, and assessment based on the objectives is the key to the design process. With the curriculum syllabus, teachers can write corresponding teaching plans and teach them accordingly. The curriculum syllabus becomes an indispensable intermediary between the program of school-based curriculum planning and classroom teaching.

In addition, it is worth mentioning that some woman teachers compare designing the curriculum syllabus to "cooking" and think about the four issues of curriculum objectives, content, implementation, and assessment as follows: for whom will the dishes be cooked (are these dishes based on the requests of the students?), what materials are used (does the school have these materials?), how should the dishes be cooked (are the students participating?), how does the cooking turn out (is the taste suitable for the students? Did it turn out according to plans?), and then they construct the framework of a course. The curriculum syllabus of "Textbook Dramas" can be taken as an example; in this class, fourth-year students arrange, perform, and assess a textbook drama. These textbook dramas are those that students have found to be enjoyable from their language classes such as "The Day I Won the Lottery," "Heart to Heart," "Nightingale Singing," "YuLai Little Hero," and "The Story of the Fisherman." This course creates opportunities for the students to listen to lectures, engage in class discussions, conduct independent exercises, write scripts, and collaborate during rehearsals and performances. Personalized incentives and detailed assessments are given based on the students' learning performance. At the end of the semester, students are given honorary awards such as "Best Performance," "Excellent Director," "Little Critic," and "Best Star," based on their achievement of the objectives, thereby allowing the students to fully enjoy the course.

3.4 Deliberation and Assessment of the Development of a School-Based Curriculum

Since the beginning of the development of a school-based curriculum, assessment has always been considered important. From the assessment of the program at the start of its development, to the assessment of learning and teaching during the

Table 3.1 Brief curriculum syllabus of "Green Dream DIY"

Course title	Green dream DIY	Designer	Lin Yiduo	School	Zhenming Central Primary School
Applicable grade	Fifth grade	Total lesson periods	16	Start time	Second semester of each academic year
Curriculum objectives	1. Express the cultivation method and life cycle of peppers (*Capsicum annuum*) in scientific terms and use a log book to present their growth journey; and 2. By cultivating peppers, understand the vegetative and back-to-ground nature of plant growth, and describe this in a combination of images and texts to form scientific essays.				
Curriculum content and implementation	Activities		Organizational form		Class schedule
	Course introduction and task placement		Watch the video, explain the process		2
	Planting of pepper		Explain, observe		2
	Transplant the pepper seedlings		Observe, exchange experience		2
	Back-to-ground, phototropism		Explain, group discussion		2
	Leaves and stems of peppers		Exchange experience		2
	Flowers and fruits of peppers		Observation, discussion		2
	Display results		Display, assessment		4
Course assessment	1. Students engage in five processes of planting peppers (1. Seeding, 2. Germination, 3. Long leaves, 4. Flowering, 5. Results), and their results are graded (a grade of 1 merits 1 star, a grade of 2 merits 2 stars, and a grade of 3 merits 3 stars). 2. Students describe the requirements of each stage in detail, and complete the tasks as required. For example, for "germination," students should first achieve "germination and seedlings growth," the second is "take photographs of the process and results of the germination or drawing records," and the third is to "photograph or draw records accompanied by text descriptions." 3. At the end of the course, based on the number of stars the students receive, students will receive a corresponding honorary title: 15 stars and above will merit "Green Growers," 12 stars and above will merit "Green Designers," nine stars and above will merit "Green Dreamers."				

implementation process, to the valuation of the results after implementation, to making judgments based on the differences in the assessment of different stages, the assessment of school-based curricula involves just three factors: curriculum

planning assessment, curriculum implementation assessment, and curriculum product assessment. These three topics are discussed below.

3.4.1 Pre-Implementation Deliberation and Self-Assessment

The pre-implementation assessment of the school-based curriculum focuses on the "Program of School-based Curriculum Planning" at the school level and the "curriculum syllabus" designed by teachers. These two programs require not only external deliberation but also internal assessment. On the one hand, deliberation is an indispensable mechanism for school-based curriculum management and an important assessment tool for school-based curriculum quality assurance (Cui & Xia, 2004). Because school-based curriculum development is a curriculum power delegated to the schools by the state, there may be "disintegration," that is, the evolution of the "school-based" curriculum into a "teacher-based" curriculum if the power is not effectively supervised. In fact, school-based curriculum deliberation has become an important system for the management of basic education curriculum in China. On the other hand, external deliberation alone may not be in-depth enough and may even miss important information. After all, a school-based curriculum is developed according to the school's individual educational philosophy, student needs, and available curriculum resources. Internal assessors are more familiar with such matters and can collect the necessary information more easily and can diagnose and remedy any problems that may arise.

3.4.1.1 Deliberation of the School-Based Curriculum Program

Since the school-based curriculum program involves two different levels (teachers and schools), curriculum deliberations must also be conducted on the school level and local level. At the school level, the school mainly conducts a collective deliberation of the school-based curriculum syllabus that teachers are preparing or have prepared. At the local level, the educational administrative department chiefly undertakes a collective deliberation of the "Program for School-based Curriculum Planning" submitted by the schools under its jurisdiction. Regardless of the level of deliberation, the basic procedures are the same, namely (1) form a deliberation committee; (2) define basic principles and a framework for the deliberation; (3) democratically deliberate and record the results; (4) give feedback to the parties on the results of the deliberation.

In general, the school-level deliberation committee is composed of the school curriculum committee to deliberate on the school-based curriculum syllabus submitted by the teachers within a specified period and to promptly provide feedback to the developer. The criteria for deliberation are mainly from the four dimensions of achievement, consistency, technicality, and originality. The specific indicators are shown in Table 3.2.

Table 3.2 School deliberation criteria for school-based curriculum syllabus

Dimension	Indicator
Advancement	1. Designed in accordance with the relevant requirements of the national curriculum, designed for 16 or 32 lesson periods.
	2. Represents the direction of quality education (new requirements for the quality of students in today's society).
	3. The curriculum design reflects considerable professionalism and scalability.
Consistency	4. Reflects the school's educational philosophy and student curriculum needs (necessity).
	5. Integrates resources (feasibility) such as manpower, material resources, financial resources, time and space, and information available at the site.
	6. The elements of the curriculum syllabus (background, objectives, content, implementation, and assessment) are complete and standardized.
	7. The curriculum syllabus reflects the consistency of objectives, content, implementation, and assessment.
Technicality	8. The description of objectives is clear, complete, appropriate, and standardized.
	9. The choice of content or activity is targeted to the objectives and organized by topic or unit.
	10. The class schedule is reasonable (the curriculum syllabus is shared in the first session, the process arrangement is conducive to student learning, and the final section has evaluation activities).
	11. The semester evaluation policy is clear, and the in-class assessment activities focus on the objectives.
Originality	12. The exploration of the subjects of the course reflects originality.
	13. The course design is based on the students' needs, school characteristics, or local characteristics.
	14. The highlighted process assessment, implementation, and assessment design are creative.

At the local level, the curriculum committee is composed of the education administrative department as the deliberation committee for the program of school-based curriculum planning. Local curriculum committees are generally composed of representatives of the education executives, curriculum or subject experts, experienced principals or teachers, community members, and students or parents. The school generally submits the planning program to the education administrative department 3 months before the implementation of the curriculum. The local curriculum committee mainly deliberates on the three dimensions of purpose, consistency, and use (see Table 3.3 for specific assessment items). Feedback is given within 1 month to make it easy for the school to revise or organize the implementation process.

3.4.1.2 Self-Assessment of School-Based Curriculum Programs

The self-assessment of the school-based curriculum logically has two basic elements: the subject selection assessment criteria and the subject integration value

Table 3.3 Quality Standards for the School-based Curriculum Planning Program (Cui et al. 2016)

Dimension	Assessment item
Purpose	A spirit or quality education concept that is aligned with national or provincial curriculum programs.
	The content includes three parts: planning, school-based curriculum structure, and implementation and safeguards.
	Plans are based on the students' curriculum needs or the school's characteristics.
	The educational philosophy of the school is explicitly stated (vision, mission, and image of alumni are the objectives in educating the students).
	The school-based curriculum clearly states the objectives.
	The school-based curriculum objectives reflect the needs of students and the objectives of school education.
Consistency	The foundation, school-based curriculum structure, and implementation and safeguards are inherently consistent.
	The school-based curriculum structure and school-based curriculum objectives are inherently consistent.
	In logically, the structure or categories of the school-based curriculum are distribution.
	The school year, semester, and weekly lesson periods meet the requirements of the curriculum plan of superior education administrative department.
	The course names in the school-based curriculum are relatively standardized.
	There are one or two special courses corresponding to student needs or school characteristics.
Good use	Implementation recommendations generally are clear and specific, concentrate on the main points, and are innovative.
	The procedures for the school-based curriculum development are clearly proposed.
	The measures for school-based curriculum management and improvement are clearly proposed.
	The curriculum reflects the integration of resources, time and space, information and other resources.
	Safeguards (especially the organization and teacher training) are comprehensive and implementable.
	Overall, the curriculum clearly shows "who is going to act, what will be done, and how it will be done."

information (Chen, 2011). The key is to choose or construct which kinds of standards will be used to diagnose, judge, and improve on the designed program. The school curriculum committee will usually choose the "Quality Standards for the School-based Curriculum Planning program" (Cui et al., 2016) to reflect on the "Program of School-based Curriculum Planning" while looking for deficiencies and directions for improvement. In the absence of a standard reference, the committee often focuses on the critical elements of the plan such as the appropriateness of the overall objectives of the school-based curriculum to the national education policy and the school's educational philosophy, the consistency between the overall objectives, student interests, and development needs, or the degree of coordination between the overall objectives and the curriculum resources available to the school.

The rationality of the curriculum structure and category setting and its alignment with the overall objectives is also an assessment criterion. Since the school is the main body, during the self-assessment period, the committee will also listen to the voices from within the school, gather and integrate assessment information, and make a comprehensive assessment. For teachers, the committee will refer to the deliberation standards provided by the school and thoroughly analyze the curriculum syllabi. It will clarify what is not allowed, what cannot be done, and what is not right in order to make adjustments and modifications to make the courses more suitable for students and easier to implement. In general, self-assessment is for discovering, diagnosing, and solving problems within the program to make it easier to operate.

3.4.2 Formative Assessment in the Implementation Process

While the program assessment is static, then the assessment of the implementation process is dynamic, where the purpose is to discover the problems and deficiencies in the implementation process and provide subsequent school-based curriculum development with the necessary information and suggestions. It is an assessment that involves the program of school-based curriculum planning and the curriculum syllabus. The former focuses on the organization and implementation of the program, while the latter emphasizes how the teacher teaches and how the students learn.

3.4.2.1 Investigation of the Implementation of the Program of School-Based Curriculum Planning

The program of school-based curriculum planning has entered the implementation stage when students are choosing high-quality courses and teachers are conducting classes. The school curriculum committee collects assessment information from teachers and students mainly through surveys and seminars such as student course selection data, site and equipment usage, reports on difficulties encountered by teachers during the curriculum implementation, utilization of curriculum resources, whether teacher training and other supporting conditions are met, and whether the teaching and research activities of the school-based curriculum are typically carried out. This information helps the committee understand the actual implementation of the program, analyze existing problems, and make timely corrections, thereby continuously optimizing the program.

3.4.2.2 Assessment of the Implementation of the Program of School-Based Curriculum Planning

How is the curriculum syllabus being implemented? This assessment is mainly carried out through the assessment of both the teachers and students. The assessment of teachers with regard to the curriculum implementation is about gathering information focused on the following questions: "Does the course meet the expected objectives?", "What are the advantages and disadvantages of the curriculum implementation?", "Is there a need to modify or improve the course design?", "Is the offering of the course actually attractive to students?", "Can the course be developed in the future?", and many more. There are two main methods of assessment. One is that the teacher self-assesses through reflection and improves himself/herself throughout the process. The second is that the school curriculum committee or a special external group conducts class audits to diagnose the problems and advantages of classroom teaching. If what is observed through the audit is not what was expected, then evidence-based improvement advice will be provided.

Student assessments tend to focus on the following: "Do students like the course?", "What are the advantages of studying this course?", "What difficulties have students encountered in their studies?", "Which aspects of the curriculum implementation need to be improved?", and many more. The assessment methods mainly consist of interviews, seminars, or questionnaires. These methods help the people in charge to understand the thoughts of students in real-time or during lesson periods and provide feedback to the teachers on a regular basis to promote changes to the curriculum implementation per the needs of the students. At the same time, students are encouraged to conduct self-assessment on the above issues, adjust their learning methods promptly, and communicate the results of their self-assessments to their teachers.

3.4.3 Product Assessment of School-Based Curriculum Development

The implementation of the school-based curriculum over a given period (usually one semester or one academic year) will produce some outcomes, which are mainly reflected in two ways: the student gains through learning, and the changes to the school-based curriculum program itself. The assessment of these two outcomes: Firstly, scientifically identify the level or degree of products; Secondly, reasonable feedback and processing results in order for the assessment to be useful. In other words, product assessment is not just about identification, but more importantly, about improvement.

3.4.3.1 Assessment of the Students' Academic Achievements

What have the students learned through one semester (or 1 year) of a school-based course? An assessment is required to reveal the answer to this question. Which kinds of academic achievements are appropriate for this assessment? Considering that the school-based curriculum has been designed to meet the essential attributes of the students' interest and development needs and that these interests and needs are individual in nature, it is more appropriate to use difference assessment as explained in the following paragraphs. Through the difference assessment, students can discover their potential and advantages, make progress and obtain a sense of achievement in line with their own abilities, and gain self-development.

At the beginning of the students' course of study, the teacher gives a preliminary test to evaluate the students' level of knowledge and abilities, and then designs the assessment criteria of different dimensions based on the different developmental levels and characteristics of the students. In subsequent periodic student academic assessments, "individual differences" are taken as a guide, and an assessment method is adopted according to the purpose and nature of the assessment content. For example, a test or competition can be used to obtain measurable learning results. Outputs, live performances, physical productions, project design, dialogue exchanges, portfolios, and the like can lead to learning results that would otherwise be difficult to measure. That is to say, changes are observed from the start, and grading or detailed comments are given based on the comprehensive assessment of the students and the changes they have displayed. Some school-based curriculum may only have process assessment; they do not have final assessments, at this time, assessment outcome only have process evidences. Integrated procedural data can be used to assess student achievements. For example, many elementary school teachers do not use the examination methods commonly used in national courses. According to the nature and objectives of the course, these teachers may use non-traditional methods such as interviews, talent shows, simulated performances, experiments, inquiries, survey reports, and short papers to assess the degree to which the students have met the course objectives. In addition, these teachers integrate the students' daily performance and use rankings, honorary titles, comments, event records, and the like to affirm and encourage the students' progress and final results.

3.4.3.2 Effectiveness Assessment of the Curriculum Plan

Teachers and students have the most say when it comes to the results of the implementation of the program of school-based curriculum planning and curriculum syllabus. Upon the conclusion of a semester, the school will generally learn about the results achieved as well as the problems and areas for improvement through the survey and discussion of teachers and students. For the curriculum syllabus, the school curriculum committee analyzes the student questionnaires and interview data combined with the observation data obtained during the implementation to identify

the quality of the course, provide feedback to the teacher, and listen to the self-assessment output from the teacher. Ultimately, the committee forms an opinion on whether the course requires adjustment, optimization, restructuring, integration, or deletion.

For the program of school-based curriculum planning, the school curriculum committee assesses the following important contents based on the survey results and the assessment results of the implementation process: whether overall objectives of the school-based curriculum have primarily been achieved; whether the course categories need to be adjusted or restructured; which implementation and assessment recommendations played an active role during the program implementation; and whether the safeguard measures are beneficial to the curriculum implementation, for example, whether the teacher training is effective, whether the funds of curriculum implement is guaranteed. Content that did not achieve the desired results is revised, improved, or re-planned. This especially applies to adjustments or changes to the course categories and structure in order to provide a better operational implementation in the next semester. The results of the assessment here are the starting point for the implementation of the next round of school-based curriculum planning. This means that product assessment is not the conclusion of school-based curriculum development; instead, it is a new beginning.

All in all, the assessment of a school-based curriculum at each stage has specific information needs, and there are also possibilities for adopting multiple assessment methods. No matter which method is adopted, the information needs and purpose of the assessors must be clarified in advance in order for them to obtain the necessary information to improve the school-based curriculum and promote its healthy development.

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Part II
Practices and Cases

Chapter 4
How to Design a School-Based Curriculum: Case of Bridge Rhyme

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School-based curriculum refers to a diverse, selectable curriculum developed using the resources of local communities and schools through the scientific assessment of the needs of their students while ensuring the underlying quality of the national and local programs (Zhong, Cui, & Zhang, 2001). It coexists with the national and local curricula and is an indispensable part of the school curriculum system by providing the functions of adjustment, supplementation, and expansion (Wu, 2013). This chapter focuses on the design of a specific school-based curriculum. Taking the school-based course "Bridge Rhyme" from Maiyuqiao Primary School in Hangzhou, Zhejiang Province, as an example, we will examine the professional aspects of the course (the course syllabus and an overview of the implementation). Together, the four elements which are the course objectives, content, implementation and assessment answer the following questions: How do I want the students to turn out? What are the necessary materials and activities? How can I reach the goals? How do I know what they already know? In pondering these questions, we will learn how to design, implement, and assess a school-based curriculum, and also what distinguishes an excellent one from a mediocre one.

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4.1 Case Background

Maiyuqiao Primary School in Hangzhou City, Zhejiang Province, also known as the Fourth Primary School affiliated with Hangzhou Normal University, was founded in 1952. It is a well-known school that is a member of a formal group of schools. Since the basic education curriculum reform since 2000 in China, the school has pursued the goals of curriculum reform, focusing on the school motto of "strive for truth, move toward the future," creating a school environment that embodies their vision of "helping children develop as individuals." They have set up a range of courses suitable for the diversified development of the students with multiple choices and multiple assessment methods aimed at cultivating "healthy and optimistic, well-educated, well-mannered, educated, open-minded, and inclusive" youth. They have promoted the school-based implementation of the national curriculum, opening long-term, short-term, and micro-courses to enrich the national curriculum. At the same time, the school also offers a variety of school-based courses to meet the different development needs of students. It has offered activities such as the "Small Citizen Practice" course, comprehensive courses such as "Fishing Rhyme," and the sporting arts course "Colorful Club."

The school is located in Hangzhou, a city with UNESCO Mixed Cultural and Natural Heritage. There are countless bridges in the canal and the West Lake. The school is adjacent to the Beijing-Hangzhou Grand Canal, the longest and oldest artificial river in the world; the Xiawan Campus is located on its banks. Over the river are Jiangzhang Bridge, Daguan Bridge and Huaguang Bridge. The Hushu Campus is adjacent to the Grand Canal, the quiet Shuyuan Park, the prosperous Xinyifang, Maiyu Bridge, Desheng Bridge, and Chaowang Bridge. The Wenlan Campus is located west of the Gongchen Bridge and adjacent to the historic block of the Western Gongchen Bridge.

Using the school's education philosophy as a foundation, "Bridge Rhyme" is a school-based curriculum developed independently by the school. It is a branch of the "Fishing Rhyme" course and is aimed at children in the third grade. Because the school shares the name of a bridge, Maiyuqiao, there are stories incorporated about the "Maiyu Bridge" and the "Maiyuqiao Primary School." Studying the bridge itself is more practical than simply studying the history of the bridges.

Through a series of in-depth experience activities such as "ambassadorship," "exploration," "customs clearance," and "drawing a canal," this course guides students in exploring the culture of the bridges located at their doorstep, understand the heritage of the canal, inspire students' love of the school, community, and Hangzhou, and cultivate their feelings of home. This course has been promoted numerous times in Hangzhou and even in national conferences; it is very popular among students. This course has also won the special prize in the fourth "Cherished Dream Cup," which is a national school-based curriculum design competition.

4.2 Course Syllabus of "Bridge Rhyme"

Course name: Bridge Rhyme
Course type: school-based curriculum, self-edited
Applicable to: fifth and sixth grade students
Class hours: 32 lesson periods
Designers: Wang Yifang and Zhu Yaping/Maiyuqiao Primary School, Hangzhou, Zhejiang Province

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4.2.1 Course Introduction

Our school is called Maiyuqiao Primary School. Children, do you want to learn about the bridge? In this course, your teacher will take you on a journey to learn about "meaningful" bridges, work with you to compile the "Hundred Bridges Map," experience the wisdom of the Chinese people through the diverse meanings of the Chinese character "桥" (bridge), and ponder the meaning of bridges through the questions, "Without a bridge, is there still a pathway? Without a bridge, what would our lives be like?" We can also play sandbox games, visit the Gongshu Canal, design business cards for the bridges, and draw the "Canal Scroll."

4.2.2 Course Objectives

1. Know the culture of bridge. Through numerous channels, collect the names of various bridges in Hangzhou starting with Maiyu Bridge, learn the origin of the names of the bridges on the Gongshu Canal, work together to compile the "Hundred Bridges Map," and experience the wisdom of the Chinese people through the diverse meanings of the Chinese character "桥" (bridge).
2. Understand the nature of bridge. Conduct field research on the bridges from Wulinmen to Gongchengqiao, combine the findings with data collection to understand the various types of bridges and to display the bridge with the

"most special form" through a series of activities such as drawing bridges, modeling of bridges, designing of bridges, and construction of bridges.
3. Through reading literary works about bridges in Hangzhou and a "Hometown Bridge Tour" based on the principles of "respect, loyalty, goodness, and courage," each person writes a paragraph and expresses his/her deep understanding of the meaning of "桥" (bridge).
4. Through the comprehensive study of this course, students will understand that bridges are a unique cultural heritage of Hangzhou, understand the unique regional resource of "knowing Hangzhou through a single bridge," and have their affection for bridges, the school, and their hometown enhanced.

4.2.3 Course Content

The course is divided into three units, namely Knowing Bridges, Building Bridges, and Discussing Bridges. The content units are arranged as follows:

Lesson 1: Share the course syllabus.

4.2.3.1 Unit 1: Knowing Bridges: Looking for Bridges, Editing the Hundred Bridges Map (11 Lesson Periods)

Lesson 2–3: Start from the Maiyuqiao Primary School. Visit the school history museum to learn about the history of Maiyuqiao Primary School. The whole class takes a group photo in formation to look like the style Maiyu Bridge.

Lesson 4: Establish a Bridge Names Ambassador Group (all students were assigned to different Bridge Names Ambassador groups). In the form of games and a lottery, the "Bridge Names Ambassador" groups of bridges such as Maiyu Bridge, Desheng Bridge, Jiangsheng Bridge, Gongchen Bridge, and Beixing Bridge will be set up, and their flags will be made. The "ambassadors" will complete tasks by conducting research and designing interview questions.

Lesson 5–6: The Bridge Name Ambassadors will visit the bridges to explore interesting facts about the bridges and record what is found.

Lesson 7–8: The teams of the Bridge Name Ambassadors will select the most meaningful bridge names, make business cards for the bridges, and tell compelling stories and anecdotes about the bridges.

Lesson 9–10: All of the students will consult relevant materials (the library, Gongcheng Academy, or the Internet) to find the different Chinese characters for "bridge"; they will compile these findings in their Hundred Bridges Map to be

displayed on the window display panels. They will experience the wisdom of the Chinese people through the diverse meanings of the Chinese character "桥" (bridge).

Lesson 11–12: The Bridge Name Ambassadors Exhibition will be set up, where each group will choose a way to display their work. The following are possible ways to do so: (1) school newspaper—handwritten newspaper to display the Hundred Bridges Map; (2) radio station—read-aloud stories that introduce the bridges; (3) collaborate to draw the "Finding the Hundred Bridges Wall"; or (4) organize students of "the Bridge Name Ambassadors" to trace their footprints, edit the interview track video, and so on.

4.2.3.2 Unit 2: Building Bridges: Finding Special Bridges, Bridge Exhibition (10 Lesson Periods)

Lesson 13–14: Find the "most special bridge." Divide into groups (2–4 people), complete tasks, each person brings an iPad or conducts online research in the computer classroom; or have extracurricular activities on the Gongshu Canal (limited to the section between Wulin Gate to Gongchen Bridge) to find what they think is the bridge with the "most special form" and measure it.

Lesson 15–16: Drawing bridges and modeling bridges. Choose the "most special bridge," and the team will cooperate to create a fan painting and a clay model of it, then arrange them on the display racks.

Lesson 17–18: Learn more about the shape of bridges. Understand the different types of bridges such as arch bridges, beam bridges, pontoon bridges, suspension bridges, and cable-stayed bridges. Select a type of bridge to model using the computer or by hand. Exchange works between groups and choose the best bridge model design drawing.

Lesson 19–20: Bridge construction. According to the bridge model design drawings created in the previous two lessons, the group members will work together to build a "most special bridge" using different materials, write a summary report, and display their work. Feel different materials, different bridge decks, and different bearing capacities. Students are required to prepare sketches, materials, decorations, and so on in advance, and each part needs to be able to remain in a fixed position.

Lesson 21–22: Bridge Exhibition. Each group (2–4 people) brings the bridge they designed and shows their "most special bridge" to the rest of the class. Five minutes are given for each presentation. Explain (1) What is the form of the bridge? (2) Why is it the "most special?" (3) What are the highlights and ingenuity of the design? After the exhibit, the various bridges are displayed on the prepared panels.

4.2.3.3 Unit 3: Discussing Bridges: Hometown Bridge Tour, Recalling Bridges (8 Lesson Periods)

Lesson 23–24: Turntable game; according to the principles of "respect, loyalty, goodness, and courage," divide the students into the four groups of "bridge of

respect," "bridge of loyalty," "bridge of goodness," and "bridge of courage" to go to the vicinity of the Gongchen Bridge and look for the corresponding clues.

Lesson 25–26: "Hometown Bridge Tour." Search for a bridge of patriotism (such as Gongchen Bridge), bridge of loyalty (such as Desheng Bridge), bridge of goodness (such as Zuojia Bridge), bridge of sacrifice (such as Chaowang Bridge), and so on. Place a flag on the bridge and tell the ancient and modern story of the bridge. Record videos with parents or classmates.

Lesson 27–28: The four groups give an account of their experiences, and the class discusses them together to look for the meanings of the bridges: connection, communication, dedication, sacrifice, and so on, and students write a short essay of 600 characters or more. Go to the "Langdu Pavilion" on the side of Gongchen Bridge to talk about the meaning of the bridge. After recording this, the students edit the video.

Lesson 29–30: Recreate the ancient scene of "customs clearance" using a diorama, show the "congestion of river vessels," show the difficulty of moving on the bridges, and discuss the image that bridges are a communication tool between the two sides of the river.

Lesson 31–32: Summary and assessment. Scroll showing the canal, display the traces of "respect, loyalty, goodness, and bravery" in bridge travel, the Hundred Bridges Map, multiple forms of bridges, introduction of "Bridge Name Ambassadors" and "Bridge Form Ambassadors" reports, and play the representative video. Combine the learning process and displayed results, undertake a comprehensive assessment of the final results, and give assessment awards.

4.2.4 Course Implementation

4.2.4.1 Course Resources

(1) The "Bridge Rhyme" textbook, which was edited by teachers in the school.
(2) Related Power Point and micro-courses created by the teacher, the teacher instruction manual, and the study activity manual.
(3) Bridges around the school, bridge-themed venues, and the school history museum.
(4) The students' self-made learning tools.

4.2.4.2 Teaching/Learning Methods

(1) Knowledge Introduction

A "bridge" is a concrete object. In Hangzhou, a city with many bridges, students have more contact with bridges in their daily lives compared to students elsewhere, and are very familiar with the form and structure of bridges with local characteristics.

However, they require guidance from teachers to understand how to connect the forms of bridges with more extensive historical and cultural meaning. For example, they require the guidance of teachers in understanding famous bridges both within and outside China and the historical stories, poetry, nursery rhymes, and the like that are related to bridges. Providing such guidance will help students form a rational understanding of bridges.

(2) Guidance for Practice

Guidance revolves around the central theme of "bridge." During the course implementation, the solution to certain bridge-related problems can be regarded as a small task. Under the organization and guidance of the teacher, students can learn to discover such problems and enhance their problem-solving skills. For example, to design a business card for a bridge, the teacher needs to help students understand the basic content of business cards so that the students' designs will be more meaningful.

(3) Study Tour

The "Bridge Rhyme" course requires the full utilization of the bridge resources of Hangzhou to make the study of the course more vivid and intuitive. It is especially necessary to visit themed venues to accumulate knowledge, understand history, and stimulate the students' enthusiasm for the bridge-themed course. At the same time, the teacher can also invite professionals who have an in-depth understanding of the bridges in Hangzhou to the school to introduce the bridges' history so that the students can develop their feelings toward their hometown throughout the learning process.

The "problem-oriented" curriculum implementation strategy reported that students who participate in the course have learning styles that are different from what was previously understood. They must learn to utilize independent, cooperative, and inquisitive learning methods. They will think independently and work in teams to accumulate experience during the process to achieve the objective of improving their overall qualities and abilities.

It should be noted that the curriculum implementation encourages students to communicate fully, exchange opinions, share discoveries, and explore ways to solve problems in the process of promoting independence, cooperation, and inquiry. However, in the process of communication, there must be instructions and guidance on issues such as the sequence of communication, methods of handling disputes, and the type of language used in reports.

4.2.5 Course Assessment

The students' semester grades are presented in a weighted manner and consist of procedural assessment (90%) and a final assessment (10%).

4.2.5.1 Procedural Assessment (90 Points)

(1) Unit 1: Knowing Bridges (30 points, students' self-assessment)

Assessment criteria (5 points)	Literacy direction	Assessment level (student self-assessment)		
		Very good (5 points)	Average (3–4 points)	Not very satisfactory (1–2 points)
I can tell the story of Maiyu Bridge	Expression			
I can actively search for bridges with different names	Proactivity			
I can share interesting bridge names with team members	Sharing			
I can design creative business cards and advertisements	Creativity			
I can work with team members to compile the Hundred Bridges Map	Cooperation			
I can share the bridge name search process	Sharing			

(2) Unit 2: Building Bridges (30 points, teachers' assessment)

Assessment criteria (5 points)	Literacy direction	Assessment instructions (assessor as teacher)
Can go out and look for a special bridge and measure it in the field	Independence	According to the performance during the practical inquiry, give the corresponding ratings: positive = 5 points; average = 3–4 points; not active = 1–2 points.
Can make a fan painting of a bridge and make a clay model of a bridge	Creativity	According to the completed process and results, give the corresponding ratings: beautiful = 5 points; relatively beautiful = 3–4 points; average = 1–2 points.
Can complete the bridge design plan with the team members	Cooperation	According to the degree of participation in the design process, give the corresponding ratings: strong participation = 5 points; relatively strong participation = 3–4 points; average = 1–2 points.
Able to prepare bridge materials, decorations, etc.	Seriousness	According to the material preparation, give the corresponding ratings: fully = 5 points; average = 3–4 points; not enough = 1–2 points.

(continued)

Assessment criteria (5 points)	Literacy direction	Assessment instructions (assessor as teacher)
Able to build various types of bridges with different materials	Creativity	According to the finished work, give the corresponding ratings: creative = 5 points; average = 3–4 points; not creative = 1–2 points.
Can accurately and clearly introduce a special bridge	Expression	According to the introduction, give the corresponding ratings: independent completion = 5 points; assisted completion = 3–4 points; not completed = 1–2.

(3) Unit 3: Discussing Bridges (30 points, teachers' assessment)

Assessment criteria (5 points)	Literacy direction	Assessment instructions (assessor as teacher)
Can search for bridges that show "respect, loyalty, goodness, and courage" and tell their stories	Practice	According to the search process, give the corresponding ratings: 5 points = proactive; relatively proactive = 3–4 points; not proactive = 1–2 points.
Able to create a story, nursery rhyme, and perform poetry about a bridge with group members	Cooperation	According to the participation, give the corresponding ratings: cooperated = 5 points; average = 3–4 points; no cooperation = 1–2 points.
Can actively participate in the bridge discussion	Sharing	According to the discussion, give the corresponding ratings: in-depth = 5 points; average = 3–4 points; not in-depth = 1–2 points.
Able to go to the Langdu Pavilion and express the meaning of bridges	Expression	According to the expression of the meaning, give the corresponding ratings: profound = 5 points; average = 3–4 points; superficial = 1–2 points.
Can participate in the "customs declaration" game	Participation	According to the performance in the game, give the corresponding ratings: active = 5 points; average = 3–4 points; not active = 1–2 points.
Can write a paragraph about "Bridges and Me"	Interpretation	According to the paragraph written, give the corresponding ratings: wonderful = 5 points; average = 3–4 points; not great = 1–2 points.

4.2.5.2 Final Evaluation (10 Points, Teacher Assessment)

According to the students' output and behavior, the specific assessment methods are as follows:

(1) Student output: Canal Scroll (6 points)

Assessment criteria	Literacy direction	Assessment instructions
Able to independently design creative bridges (3 points)	Innovation	According to the completed output, give the corresponding ratings: innovative = 3 points; relatively innovative = 2 points; not innovative enough = 1 point.
Able to cooperatively display the "Bridge Name Ambassador" and "Bridge Form Ambassadors" activities (3 points)	Cooperation	According to the initiative and cooperation shown in the activities, give the corresponding ratings: proactive = 3 points; average = 2 points; not proactive = 1 point.

(2) Behavioral performance: presentation (4 points)

"Bridge Rhyme" Display Assessment		
Assessment criteria	Literacy direction	Assessment instructions
Able to report on the display on the exchanges on bridges (2 points)	Expression	According to the presentation given, give the corresponding ratings: confident = 2 points; relatively confident = 1.5 points; average = 1 point.
Able to actively propagandize the school and protect and promote the bridges in their hometown (2 points)	Proactivity	According to the actual development, give the corresponding ratings: proactive = 2 points; average = 1.5 points; not proactive = 1 point.

Final score = Unit 1 (30%) + Unit 2 (30%) + Unit 3 (30%) + Summary (10%)
Note: Assessment note: 90 points and above = excellent; 70–89 points = good; 60–69 points = qualified; 60 points or fewer = needs more work

4.3 Case Analysis

One of the concepts of school-based curriculum development is to emphasize the scientific, democratic, and open nature of curriculum development (Cui, 2000). School-based curriculum is different from national and local curricula. The original intention of the school-based curriculum is to enhance the adaptability of the national curriculum to the locality, school, and students. The school has the right and obligation to develop or select a suitable curriculum for the school. The basis for establishing a school-based curriculum is to combine the traditions and advantages of the school with student interests and needs. Therefore, the assessment of a school-based curriculum also has its own unique nature. Regarding how to deliberate on a school-based curriculum, a team led by Professor Cui (2000) from the East China Normal University proposed 16 criteria for deliberating on the professionalism of a school-based curriculum from the four dimensions of advancement, consistency,

technicality, and originality. These dimensions are used to assess whether the school-based curriculum is in line with the national curriculum and the times, whether the curriculum is consistent, whether the course syllabus conforms to technical specifications, and whether the course design is thorough. The course described above is one of the school-based courses developed by the Maiyuqiao Primary School within the spectrum of "Fishing Rhyme" courses. In general, the "Bridge Rhyme" course can be considered an excellent school-based course according to the four dimensions of the team led by Professor Cui Yunhuo.

4.3.1 Reflecting the School Educational Philosophy

The school educational philosophy answers the question, "What kind of person should the school cultivate?" The school education philosophy is the soul of all the work done by a school; it is the starting point of the curriculum construction work as well as its destination. It reflects the vision of the school; it defines where the school is headed as an organization. It provides the mission, that is, what kind of graduates does the school need to cultivate to achieve its vision and educational objectives. It is the consensus of the school education community, and it also acts as a guide for the actions of each member. It reflects the school's characteristics and delivers the cultural connotation and development direction of the school.

The "strive for truth, move toward the future" motto of Maiyuqiao Primary School is simple and timeless, and it not only reflects the cultural style of the century-old school but also syllabus its development vision. The school adopts "let each child have personalized development" as its educational goal to focus on the intellectual development of the students. It uses the principles of "respect differences, appreciate individuality, open up education, and develop in a diverse way" in holistic education as the school's mission to set up diverse development, diverse choices, diverse assessment in classes in the pursuit of richness, openness, and integration. These help to satisfy the needs of students to experience diverse and personalized development as much as possible, and foster "healthy and optimistic, well-educated and a model of propriety, learned, open-minded and inclusive" youths. Maiyuqiao Primary School makes full use of its profound cultural heritage, and the school's educational philosophy is embodied in the development of its school-based curriculum.

The practical, sporting art, and knowledge development categories of the courses of Maiyuqiao Primary School constitute a school-based curriculum system with thoughtful planning and integration, which fully reflects the strong curriculum planning consciousness of the school. There are some independent courses under each course category; each of which has a course syllabus that has definite plans for the course objectives, content, implementation, and assessment. The school-based curriculum of Maiyuqiao Primary School focuses on diversity and selectivity. The courses are divided into the compulsory and elective course and the class hours for each are spread throughout the semesters. This allows students to make their choices

according to their needs and is also conducive to the overall course arrangement. The "Bridge Rhyme" course originated from the school's name and its geographic and cultural environment. Starting from the school's history museum, it not only inherited the spirit of openness and diversity from the school's holistic curriculum, but it also helps students to learn from practical experiences, learn how to learn, and learn to be open and inclusive through the course. At the same time, the orientation of the curriculum is a good response to the talent needs of modern society. This course is not a "principal-based course" or a "teacher-based course," nor is it a derivative of local characteristics or local culture. It is tree-like, rooted in the school's educational philosophy and multi-disciplinary curriculum needs. Such a curriculum is school-based, and this type of curriculum appears to be lively and vivid, and is not something that can be easily replicated by other schools.

4.3.2 Course Development

Focus on Developing the Students' Interests Curriculum exists for children. Without children, there is no curriculum. Children's interests are the vitality of school-based curriculum. Paying attention to, researching, and satisfying the legitimate interests of students is the logical starting point as well as the destination of a school-based curriculum (Cui, 2008a). Before the course began, the teachers first evaluated the needs of the third-grade students through interviews and questionnaires mainly related to the students' expectations of the course content and learning styles. In the teachers' minds, they always ask themselves, "what do our students need?" After answering this question, they then clarify, "what can we offer?" After a sample survey of third-grade students, it was found that the students were all local students, and their home addresses were all near the school. Most of them were born and raised in Hangzhou; some are first-generation residents of Hangzhou but have lived there for many years. Students are very familiar with and interested in the bridges around the school. After clarifying the scope, level, and type of interests that the students have, the teacher fully tapped existing and available resources both inside and outside the school such as the school's history museum, bridges around the school, bridge-theme venues, the themed venue in the school's STEAM (Science, Technology, Engineering, Art, and Mathematics) center, and teachers who are good at drawing and building bridges. The survey of student interests conducted in the previous semester yielded high-quality information.

The teachers give students the full ability to choose their courses during the implementation process. The Bridge Name Ambassadors in the Knowing Bridges unit allows students to organize their own cooperative teams to select the most interesting bridge names and present them in any way they like. In the bridge-building activity, students are also free to form their own groups and use their own methods to find a bridge that they think has the "most special form" then draw, model, build, and display it. In the bridge tour in the Discussing Bridges unit,

students act as ambassadors in looking for clues, planting flags, recording their read-aloud in the pavilion, and creating dioramas. The teachers always give students independence and choices and develop their skills using a variety of methods such as project-based learning, practical activities, report presentations, and a variety of games to meet the multi-faceted needs of students as much as possible and provide them with opportunities to perform in diverse ways and express their interests.

The objective setting, content arrangement, teaching methods, and assessment methods of the course are all centered on the needs of students, and coincide with the idea of the "practical curriculum model"(Shi, 1996) presented by Schwab (1971). The practical curriculum model regards teachers and students as the main body and creator of the curriculum; they are organic components of the curriculum. The focus of the curriculum development is to take it as a continuous process of interaction between the elements of the curriculum system, especially the interests and needs of the learners. Putting learners at the center of research is also in line with Dewey's (1903) "child-centered" ideas. This course is far removed from the method of rote memorization used in traditional education; rote memorization has been replaced with a life-oriented, child-oriented curriculum format. The integration of simple and fun design of activities such as "compiling the Hundred Bridges Map," "conducting a bridges meeting," "ambassador trips to bridges," and "diorama reports" into the learning process help students to understand the culture surrounding bridges and the structure of bridges. These various teaching methods help students to recognize the historical and cultural heritage of Hangzhou and enhance the students' affection for bridges, the school, and their hometown, rather than teaching them through dry lectures. This kind of curriculum, with a development that starts with the students and their interests, is worth studying and advocating for.

Course Syllabus Technical Specification The course syllabus is the most direct and vital text for deliberating on the merits of a course. If a course does not have a course syllabus, it cannot be called a course, because this means that the relevant parties or teachers have not thought about it thoroughly and professionally. A course is a detailed professional activity that requires a process of planning or designing, implementation, and assessment (Cui, 2016). The course syllabus is a program syllabus written by the teacher based on the curriculum standards or guidelines and related materials; it reflects the various elements of a specific course. A complete course syllabus includes the pre-record (school name, course type, designer, date, appropriate grade level, class hours), the main body (course objectives, course content, course implementation, course assessment), the necessary conditions, and other content (Cui, 2009). It is a course guide and a cognitive map. The course objectives, course content, course implementation, and course assessment are the four core elements of the course syllabus.

Professionalized school-based curriculum design refers to the process of continuously improving and enriching the course elements according to certain technical specifications. The "Bridge Rhyme" course takes part in this process. The course syllabus is complete, with basic information, background analysis, course description, course objectives, course content, course implementation, and course

assessment. Background analysis is the reason for opening a certain course. It is the basis for formulating and understanding the course objectives and correctly assessing the course plan. The course introduces the origin of the course from the relationship between the school and the bridge and at the same time, combines the school's educational goals with the practical significance of the course. The course objectives are realistic, clear, and actionable. First, the course objectives have an ample foundation and is based on the actual situation of the school and the third-grade students. Second, regarding expression, with the students as the main body, knowledge and skills, processes and methods, emotional attitudes, and values are closely related and well integrated. Explicit behavioral verbs are used to embody the learning conditions and portray the level of performance. In terms of course content, the three units (Knowing Bridges, Building Bridges, and Discussing Bridges) in the course are systematic designed with special topics, class, hours, and structure that are based on the students' learning needs and related to their student life; the course syllabus was arranged to be shared during the first sessions. The course implementation can creatively apply diverse learning methods according to the learning characteristics of the students. In addition to teaching knowledge, the course also adopted methods such as field trips, group cooperation, reports, and other such methods. At the same time, the course resources are also complete; it contained not only the material resources but also the conditional resources. In the course assessment, the assessors, areas for assessment, assessment methods, and actions to be taken on the results are clearly identified. The combination of the procedural assessment, summative assessment, and final results is presented in a weighted manner. The assessment criteria and methods for each unit are provided to embed assessment in the teaching process, thereby allowing it to be assessed and operated. Among the 32 lessons, the last two were retained as the final assessment of the course to better examine the extent to which the objectives were achieved and how they can be revised upon completion of the course.

Consistent Course Elements Whether the school-based curriculum is professional is mainly reflected in the internal consistency of the curriculum. It includes three aspects: the school-based curriculum is consistent with the requirements of the curriculum policy, the curriculum elements are consistent, and the internal logic of the curriculum elements is consistent. The basis for designing a consistent course lies in finding the core of its consistency. In a school-based curriculum, the course objectives are the soul of consistency, and the four elements of the curriculum should be consistent with each other, with the objectives as the core. Whether the curriculum is suitable for the expected learning outcomes is the most important principle for organizing teaching content around teaching priorities. The important factors affecting teachers' choice of teaching methods are the curriculum objectives; the core principle behind the teachers' choice of assessment methods is to match them with the curriculum objectives. Consistency requires further clarification of the school education philosophy, the mandate to assess student curriculum needs and teacher curriculum development awareness and competencies, and the requirement to utilize available resources (Cui, Zhou, Cen, & Yang, 2016).

The "Bridge Rhyme" course is based on the school's consideration toward its image of "healthy and optimistic, well-educated and a model of propriety, learned, open-minded, and inclusive" graduates, the cognitive and emotional needs of the students regarding the bridge, the origins of the school and the bridge, and the teacher's curriculum awareness. Thus, there are four objectives: (1) Through a variety of channels, collect the names of various bridges in Hangzhou starting from Maiyu Bridge, understand the origin of the names of the bridges on the Gongshu Canal, work together to compile the "Hundred Bridges Map," and experience the wisdom of the Chinese people through the diverse meanings of the Chinese character "桥" (bridge). (2) Conduct field research on the bridges from Wulinmen to Gongchengqiao, combine the findings with data collection to understand the various types of bridges and to display the bridge with the "most special form" through a series of activities such as painting bridges, creating molds of bridges, designing bridges, and constructing bridges. (3) Through reading literary works about bridges in Hangzhou and a "Hometown Bridge Tour" based on the principles of "respect, loyalty, goodness, and courage," each person writes a paragraph and expresses his/her deep understanding of the meaning of "桥" (bridge). (4) Through the comprehensive study of this course, understand that the bridge is a unique cultural heritage of Hangzhou, understand the unique regional resource of "knowing Hangzhou through a single bridge," and enhance the students' affection for bridges, the school, and their hometown. The objectives use verbs such as "collect," "understand," "research," "read," and "present" to describe learning conditions such as "group work" and "field research." The ultimate objectives include experiencing the wisdom of the Chinese people, gaining a deep understanding of the meaning of bridges, and cultivating a feeling of love for bridges, the school, and the hometown. The course started with clear, realistic, and limited objectives rather than starting from the goal. The objectives were clearly defined, balanced, and implemented.

The curriculum structure and arrangement of the three units (Knowing Bridges, Building Bridges, and Discussing Bridges) are closely related to the goal, which is conducive to its achievement. For example, if Unit 1 (Knowing Bridges) is geared toward achieving the first objective, it is organized with tasks such as collecting the interesting names of the bridges and compiling the Hundred Bridges Map. If Unit 2 (Building Bridges) is geared toward achieving the second objective, it is organized with activities such as searching for bridges and displaying bridges. If Unit 3 (Discussing Bridges) is geared toward the third objective, it is organized with activities such as the Hometown Bridge Tour, the discussion of the significance of bridges, and the essay on bridges. Through systematic organization of the content, students naturally understand the unique cultural heritage of bridges, understand the origins of the bridges and Hangzhou, and achieve the fourth objective by experiencing the learning process. The course was borne out of the degree to which students have met the objectives. The appearance of assessment design in the course plan indicates a change from experience-based education to professional education (curriculum). It can be said that assessment design is an important symbol of professionalism in the course plan (Cui, 2016). In this course, the assessment design can

effectively correspond to the course objectives, and the procedural assessment is the primary assessment. Each of the three units has been provided with assessment criteria and a final summative assessment, which is done on the students' work, and performances have also been provided, along with clear assessment criteria. Such an assessment tool shows that the course designer is confident; different assessors can also effectively use the same tool.

4.4 Summary and Reflections

This case tells us that this is a school curriculum innovation model that conforms to China's current national conditions and is also in line with the common concepts in school-based curriculum development. However, school curriculum innovation is a continuous behavior or pursuit. In addition, there is still the possibility of further exploration in this case.

First, does the relationship between the school educational philosophy and school-based curriculum need to be more explicit? The students' curriculum needs are fundamental to the school-based curriculum. Maiyuqiao Primary School should further clarify how the students' needs are the basis for the school-based curriculum development. The school-based curriculum objectives reflect the needs of students and the goals of school education. The biggest difference between school-based and national and local courses is that it is "school-based"; responding to students' needs is the primary goal of the school-based curriculum. Although the current development of the "Bridge Rhyme" course has involved a survey of student interests, and students enjoy this kind of course, a series of fundamental questions still need to be considered. Do the students have other interests? How are these interests integrated with the series of courses such as "Bridge Rhyme" and "Fishing Rhyme"? To solve this series of questions, we need to look at it from several aspects. First, further refine and clarify the relationship between the "image of Maiyuqiao Primary School graduates" and the school-based curriculum. Second, analyze the needs of the students and reflect these needs in the curriculum. Third, do a satisfactory job of collecting feedback from students and parents during the curriculum assessment and modify and improve the existing curriculum accordingly. Fourth, adequately plan the school-based curriculum and further strengthen the "consistency test," that is, seek consistency between the school's educational philosophy, overall objectives of the school-based curriculum, the curriculum structure, implementation, and assessment (Cui, 2008b).

Second, does the school need to clarify its management practices and safeguards? How can the school establish a school-based curriculum assessment and management system that, while being based on the interests of the students, can avoid purely pursuing said interests to ensure the quality of the course? How should the school manage the relationship of its curriculum with the national and local curriculum? How can it ensure the coordination between students when they perform activities outside of the classroom with personnel? How can it establish contact with and the

sharing of internal and external curriculum resources? In addition to material resources, how can the human resources (teachers) be maximized? Can more teachers be given the opportunity to perform and create? This series of questions requires particular attention to the following points. First, the school should set up a school-based curriculum development committee and give each member corresponding rights and responsibilities. Second, the school-based curriculum development committee should organize the students' curriculum needs and available resources. Third, it should clearly define the objectives of the school-based curriculum and come up with a specific subject and course and form a holistic and systematic perspective to deliberate on the curriculum arrangement given the balance between students; curricular needs and available resources. Fourth, the school should do an excellent job in training the teachers on curriculum awareness and abilities. Fifth, it should form a complete school-based curriculum assessment system.

Third, is it necessary to improve the expansion of the national curriculum through school-based curriculum projects such as "Bridge Rhyme"? The school-based curriculum is a breadth and depth expansion of the functions of the national curriculum. That is, the full implementation of the national curriculum for the entire student body poses some difficulties or cannot be fully implemented; for some students, it is imperative and possible to expand its function. "Bridge Rhyme" selected the theme of "bridges" and expanded and deepened learning activities. It enriched and optimized the students' knowledge structure and made some attempts to deepen knowledge about a certain theme. However, it is also possible to carry out cross-learning or interdisciplinary development, and even improve the content, learning methods, and requirements in-depth. Regarding breadth, the coverage can be expanded such as with the analysis of the theme-related areas of the school (what are the advantages or characteristics of them, or what are their shortcomings), which could be followed by analysis of the students' interest and growth points. This could then be combined with the requirements of the time, cultural features, and so on, to constantly improve the subject coverage. At the same time, regarding depth, it should be studied whether the same theme of bridges can be applied to different grade levels and whether it can become a series of school-based curriculum that is compatible with the students' age characteristics, interests, and learning foundations, spanning the lower and upper grades. Of course, with expanded breadth, this series could be offered to different grade levels with varying complexity or topics. As far as the school is concerned, it is necessary to provide students with as many themed activities as they can choose. Based on the characteristics of the school-based curriculum in the different levels and given that it is continuously being improved over the years, there needs to be a connection as students transition from one grade level to the other, and the degree of freedom in selecting courses must be appropriate.

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Chapter 5
How to Design a Course Category of School-Based Curriculum

Jiangpeng Tang and Xiaojun Hu

The school-based curriculum framework of a school often consists of multiple course categories. These categories are focused and interrelated; they all point toward the overarching goals of the school curriculum. These categories are connected to the overall curriculum of the school while maintaining distinctive characteristics. Even if these categories of courses are grouped together, there is no strict logic among the courses with similar categories. The design for a category of courses reflects all aspects and elements of the school-based curriculum; it can be seen from the overall form of the school-based curriculum development. In this chapter, we will describe a category of school-based courses: the school-based development of the imagination and creative category of courses. From this, we will be able to see that the curriculum objectives are consistent, the curricular contents are similar, and that the courses have similar organization and assessment methods as others within the same category. We can also see where the category is positioned within the school's hierarchy of courses as well as the step-by-step design process.

5.1 Case Background

5.1.1 School History

The Xishan Senior High School of Jiangsu Province, the school at the center of this case, is a suburban school. It is located in Huishan District, Wuxi City, Jiangsu Province, in the economically developed Yangtze River Delta Region of China. The

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school was founded in 1907, and consists of a regular high school and an international department. It has more than 2300 students and 235 full-time teachers. The school recruits junior high school graduates with an excellent performance from a population of 400,000 in the Huishan District. The campus covers an area of 415 acres, and the school building area is 120,000 m^2. The school has some fitness facilities, such as a fencing hall with 20 standard fencing lanes, indoor and outdoor swimming pools, and many others. The school is often considered to be the "county high school," that is, a particularly good school in the county. There are more than 2800 counties in China. Therefore, schools at this level are representative of schools across the nation.

5.1.2 Path of School-Based Curriculum Development

As early as the 1920s and 1930s, the school was able to implement "course tailoring" according to its condition and in accordance with the standards set by the government. The founder of the school, Kuang Zhongmou, proposed that "when one enters the high school, one studies freely, develops individually, and cultivates practical talents."(Kuang)Xishan Senior High School has always been humanistic, learning-centered, and focused on personality development. The curriculum has been made to be as suitable as possible for the development of students in the school, thus enhancing the relevance and effectiveness of the curriculum.

In 1996, then-president Zhu Shixiong, together with a team of experts led by Professor Shi Liangfang and Dr. Cui Yunhou from the East China Normal University, systematically introduced the theory of school-based curriculum. Director Tang Jianghu of Xishan Senior High School and other important members of the school repeatedly tried and reflected on the theory, which helped to initially answer fundamental questions such as "what is school-based curriculum in China?" and "how should a school-based curriculum be offered in China?" They explored the basic process flow for school-based curriculum development, operational norms, management models, assessment methods, and other such aspects. They then created the "School-based Curriculum Planning Program (1997)"; this was the earliest completed school-based curriculum development in China.

The school-based curriculum in the early days of Xishan Senior High School mainly provided elective courses and activity classes according to the development needs of the students; attention was paid to the functions and values of supplementary teaching such as "Reading Skills," "English Listening," "Wu Culture,"[1] "Research-based Learning Methods," and "Psychological Counseling." The exploration of this issue led to the development of the Chinese school-based curriculum. Professor Cui affirmed the pioneering work of this curriculum, and he thought that

[1]Wu culture was A traditional Chinese culture. https://baike.baidu.com/item/%E5%90%B4%E6%96%87%E5%8C%96/7481274?fr=aladdin.

Xiashan Senior High School added the above elective courses and activity classess on the basis of the original compulsory courses. Those works were a landmark progress in the history of Chinese school curriculum (Cui, 2002).

In 2000, the Ministry of Education promulgated the "Full-time General Senior High School Curriculum Program (Revised Experiment Draft)," which divided curriculum planning in high schools into subject-based courses and activity-based courses. At this time, Xishan Senior High School had carried out 5 years of school-based curriculum development and exploration. The implementation of curriculum planning in the high school made the school-based curriculum development of Xishan Senior High School transition from the initially simplistic "activity classes" and "elective courses" of school-based experiment progress toward the true meaning of "school-based curriculum."

In 2005, Jiangsu Province fully implemented curriculum reform in all its regular high schools. The new curriculum plan in high schools had an overall impact on the school-based curriculum system under the framework of the original curriculum planning framework of Xishan Senior High School. For this reason, Xishan Senior High School, under the theoretical guidance of the team led by professor Cui, re-planned and re-developed its school-based curriculum, which resulted in a school-based curriculum system corresponding to Elective II and the national curriculum structure.

The exploration and implementation of the school-based curriculum of Xishan Senior High School had a clear curriculum plan and framework, standardized development process, management model, and teacher admission system. According to its founding documents that the school-based curriculum of Xishan Senior High School emphasizes practicality, flexibility, and service-oriented curriculum practice management, a curriculum mindset with extensive student involvement and curriculum development, and experiential, active, and expressive learning methods (Cui, 2002). It advocates curriculum development with teamwork and implements performance assessment and various assessment schemes. Xishan Senior High School's school-based curriculum development has become a model for basic education curriculum development across China. In the "Findings from Mainland China on research on senior school curriculum syllabus" from the "Research on the development of high school curriculum in major countries of the world • final report," (Li, Huang, Cai, Xu, et al., 2001) Xishan Senior High School's school-based curriculum planning program was introduced, the school was identified as the "birthplace of school-based curriculum development in Mainland China." (Li et al., 2001).

Curriculum planning program of Xishan Senior High School in Jiangsu Province

In 2009, Xishan Senior High School completed a significant adjustment to its curriculum structure; the resulting structure is shown in the figure below (Table 5.1).

Table 5.1 Jiangsu Xishan Senior High School curriculum planning program

Learning area	Subject (credit)	Compulsory	Elective I	Elective II	
Language and literature	Language (14)	1-5[a]	Series 1; Series 2; Series 3; Series 4; Series 5	Category	Course category (credit requirements)
	Foreign language (14)	1-5	Series 6-11		
Mathematics	Mathematics (14)	1-5	1-1; 1-2; 2-1; 2-2; 2-3; 4-2; 4-3; 4-4; 4-5		
Humanities and society	Politics (12)	1-4	Elective 3		
	History (10)	1-3	Elective 1; Elective 4	Limited elective 12	Imagination • Creativity (9)
Science	Geography (10)	1-3	Elective 2; elective 6;		Foundation for entrepreneurship (3)
	Physics (10)	1-2	3-1; 3-3		
	Chemistry (10)	1-2	1. Chemistry and life; 3. Material structure and nature 4. Principles of chemical reactions; 5. Fundamentals of organic chemistry	Optional class elective 3	University prerequisite (1)
					Social aspect (1)
					Science and technology frontier (1)
					Skills and hobbies (1)
	Biology (10)	1-3	1. Biotechnology practice; 2. Biological science and society 3. Modern biotechnology topics		Psychological education (1)
Sports and health	Sports and health (11)	1. Health	Options: basketball, volleyball, table tennis, aerobics, football, badminton, track and field, fencing, swimming, tai chi, yoga, tae kwon do		

Comprehensive Practice	Community service (2)	Nursing home service learning	Library services, caring home services, laboratory services, Kuang Yuan TV services, school history lecturers, etc.		
	Social practice (6)	Military training, social practice-based activities	Simulate cities, search for hometown history, and examine new urban and rural changes, such as self-selected social practices		
Technology	IT-based research learning (19)	Research study 1-5			
		Information technology foundation 1	Elective 3: Network technology applications		
	General technology (6)	Technology and design 1			
Art	Art (6)	Art appreciation			

Note: The parts in the table indicated by the numbers 1 to 11 refer to the module numbers in the course standards of the subject.
[a]1-5 show that the 1-5 module numbers in the course standards of the subject

5.1.3 Development of Course Category

In the fall of 2011, in order to improve the quality of the course and expand the scope of the class, Principal Tang Jiangpeng, on the basis of the national curriculum standards, proposed a unified school-based curriculum with a credit system, art courses and technical courses, and the creative implementation of national and local curriculum plans.

At the same time, the curriculum development team of Xishan Senior High School also found that a lack of imagination and creativity is a common problem high schools currently face. One of the reasons for this is the lack of specific ways that schools cultivate the imagination and creativity of students. The following were determined to be problems that need to be addressed:

- There was a lack of specific courses that directly cultivate the imagination and creativity of students.
- The school lacked learning environments that allowed students to "actualize their imagination" such as workshops, design centers, and other specialized facilities.
- It was difficult to cultivate the imagination and creativity of students using traditional teaching methods; it was necessary to change the teaching styles used.
- The school lacked suitable curriculum development and implementation mechanisms.

To solve the above problems, Xishan Senior High School developed a separate series of courses under the imagination • creativity school-based curriculum and integrated it into the overall school-based curriculum structure of the school. This category of courses is positioned within the Electives II and Limited Electives modules.

5.2 Planning and Design

5.2.1 Planning of the Imagination: Creativity School-Based Curriculum

5.2.1.1 Guidance Documents and Curriculum Policies of the Competent Education Authorities

In 2003, the "Regular High School Curriculum Plan (Experiment)," promulgated by the Ministry of Education, noted that schools should be given reasonable and sufficient curriculum autonomy so that they can creatively implement the national curriculum, develop the school curriculum according to local conditions, and guarantee that students will be able to choose their courses effectively.

5.2.1.2 Sorting Through the History of the School and Further Clarifying the School's Educational Philosophy

In the 15th year of the Republic (1926), the school determined the "Ten Major Training Objectives," namely: "exercise to have a healthy and strong body, cultivate virtue of unity in words and deeds, cultivate the moral principle of integrity toward the public, inspire the spirit of sacrificing the self for the country, advocate obedience to the team, train to gain the courtesy of being humble, respectful, and gentle, develop a sensitive and sophisticated mind, practice the skills of increasing production, foster habits of diligence and endurance, and promote a lively and pleasant attitude."[2] Today, the school has followed the spirit of the times and considered the development needs of modern-day people to sum up the school's current educational philosophy as "strong life, noble spirit, excellence in wisdom, and emotional fullness." The imagination • creativity category of courses mainly focuses on cultivating students with "excellence in wisdom" and "emotional fullness."

5.2.1.3 Evaluate the Students' Curriculum Needs and Understand the Curriculum Areas That Students Are Concerned About

The school evaluated the students' curriculum needs, which can be seen in the figure below, showing the data of the students' curriculum needs in specific fields. For example, most students need courses in the fields of "technology and innovation" (56.09%) and "comprehensive art" (42.81%). This provides a realistic basis for the development of the imagination • creativity curriculum (Fig. 5.1).

5.2.1.4 Analyze Regional Characteristics to Understand Local Curriculum Expectations

Huishan District, where the school is located, is situated in the economically developed Yangtze River Delta Region of China. The economic development has gradually changed the people's understanding of the value of education and their expectations toward education. According to survey data, parents in the Huishan District and local representatives associate the following words with their expectations toward school education: happiness, social responsibility, physical and mental health, and cooperative spirit.

[2]Wuxi Private Village Junior High School. School regulations • teaching standards and methods [A]. 30th Anniversary Issue of Wuxi Private Village Junior High School [C], 26th year of the Republic (1937).

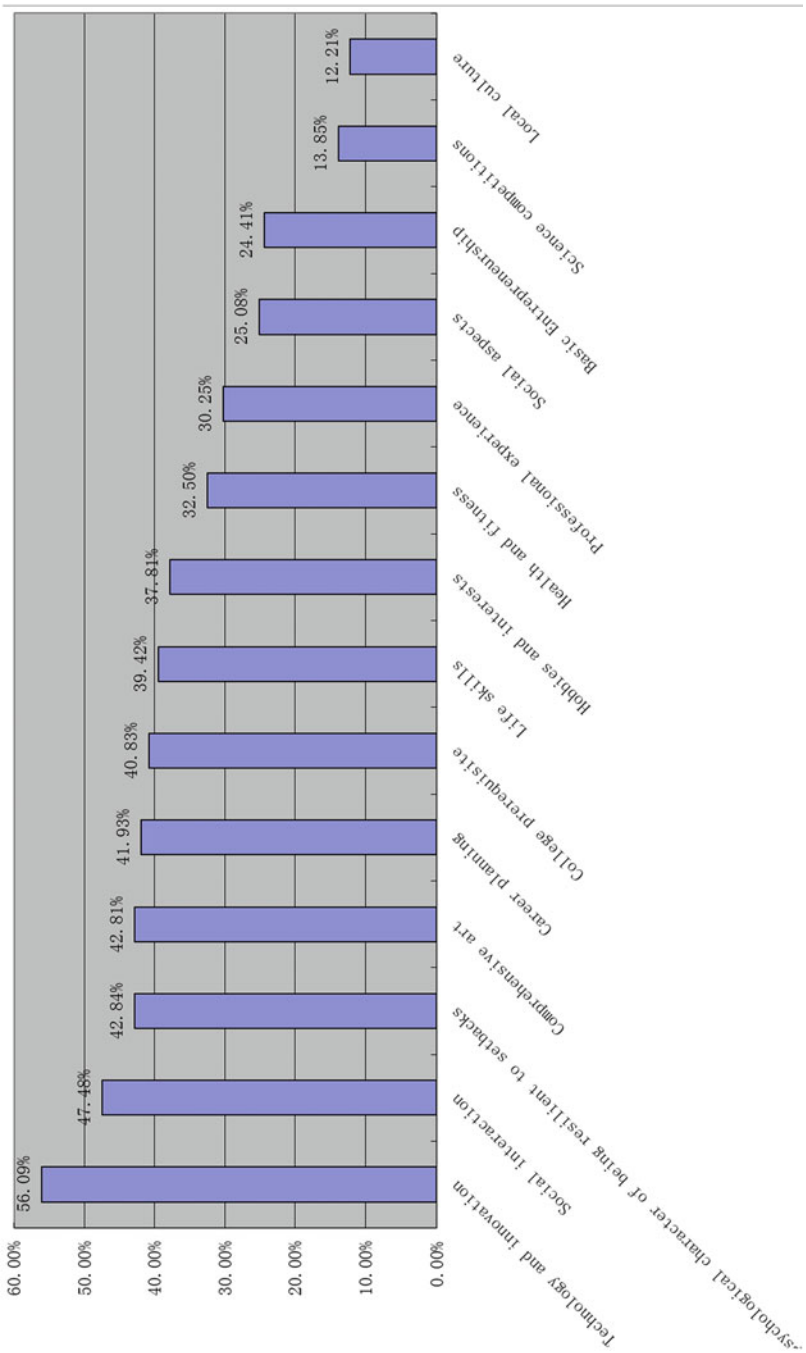

Fig. 5.1 Students' curriculum needs by field

5.2.1.5 Analyze School Curriculum Resources Based on Objective Conditions

With more than 10 years of curriculum construction, the school has formed a relatively sound and smooth management system that guarantees the implementation of curriculum management. The school has a large number of teachers with extensive curriculum development and implementation capabilities and nearly 30 dedicated functional classrooms related to art and technology. These provide the necessary resource guarantee for imagination • creativity courses.

5.2.2 Curriculum Objectives

The development of the category of "Imagination • Creativity" school-based curriculum began in 2009. Under the guidance of the thought "Design is the Rhetoric of a new Technology Culture" by Professor Richard Buchanan, former president of the World Design Research Society and head of the Carnegie Mellon School of Design, courses on technology, art, physics, and research study were fused together. The subject content was extracted, and the imagination • creativity category's school-based curriculum was designed; the overall curriculum objective of "integrating science and art, creating in imagination" was established. To learn through these courses, students must skillfully use one tool language, make one material piece of work, record one engineering journal of no fewer than 20 pages, and write one research paper of no fewer than 3000 words. The objectives of these courses are derived from the school's overall curriculum objectives, which are:

- Cultivate engineers with superior intellect, strict thinking, good practice, insight into creation, technical norms, and dedication; and
- Cultivate emotionally full designers who love life, are passionate, are creative, appreciate beauty, and are loving.

5.2.3 Curriculum Content

To enhance the students' imagination and creativity and to cultivate critical thinking and divergent thinking, one of the important technical paths is to improve the students' hands-on and performance abilities to provide them with the vehicle to "actualize their imagination."

The design of the curriculum content has two considerations. First, starting from the high school's existing disciplines, the designers must select content from the fields of information technology, general technology, art, and physics, in order to make the curriculum design suitable for the cognitive level of the students and their academic study. Second, the courses must be matched with offerings from

universities. The curriculum content referred to industrial design, fashion design and engineering, aircraft design and engineering, landscape architecture design, microelectronics, mechanical engineering manufacturing and automation, computer science and technology, roads and bridges, architecture, and other undergraduate majors offered by Chinese universities in order to link the students' learning with their career plans, thereby making it a meaningful attempt toward discovering their potential careers.

The imagination and creativity of students often occur in the intersection, edge, or comprehensive zone of subjects. Therefore, the design of the curriculum content should try to surpass individual disciplines and develop comprehensive courses; the content generally covers two or more disciplines. For example, the development of the integrated and multi-disciplinary "Micro-movie" course includes script writing (languages), photography (general technology), video editing (information technology), and art design (art). The development of the "industrial design" course, through its interdisciplinary learning, involves using tools to assist in creating and stimulating the imagination. The development of the "clothing design and performance" courses involves students using sewing machines to make clothing and using shapes to display clothing; beauty becomes tangible and expressive.

In this way, the school developed "Open Source Hardware Maker," "Robot Design and Production," "Electronic Design," "Inventive Innovation Methods," "UAV Design and Production," "Clothing Design and Performance," "Bridge Design," "Architectural Model Making," "Micro-movie," "Industrial Design," "Illustration Design," "Creative Design in Life," "3D Printing," "Computer Programming," and for a total of close to 20 courses to form the imagination • creativity category (Fig. 5.2).

5.2.4 Curriculum Implementation

The curriculum implementation is aimed at cultivating the imagination and creativity of the students. For example, if a teacher teaches students to imitate, the charm of the course will be lost, students will have no space to imagine, and there will be no motivation to create. If the teacher takes on a free-range approach, students will face many obstacles, and their frustration will undermine their motivation for learning. To this end, the school learned from the experience of the social and economic fields as well as from business incubators to manage the curriculum and organize the classrooms. The mechanism of incubated learning was designed on the basis of examining the technology business incubator (Fig. 5.3).

The incubator consists mainly of three support systems. Each functional classroom is transformed into a workshop where technical guidance and course services are provided, and facilities and equipment in the classroom are available for students to register to use. The incubation manager of the class is the teacher, who is responsible for forming a team of teachers and students to demonstrate whether the students' project is feasible and to use professional methods to judge the

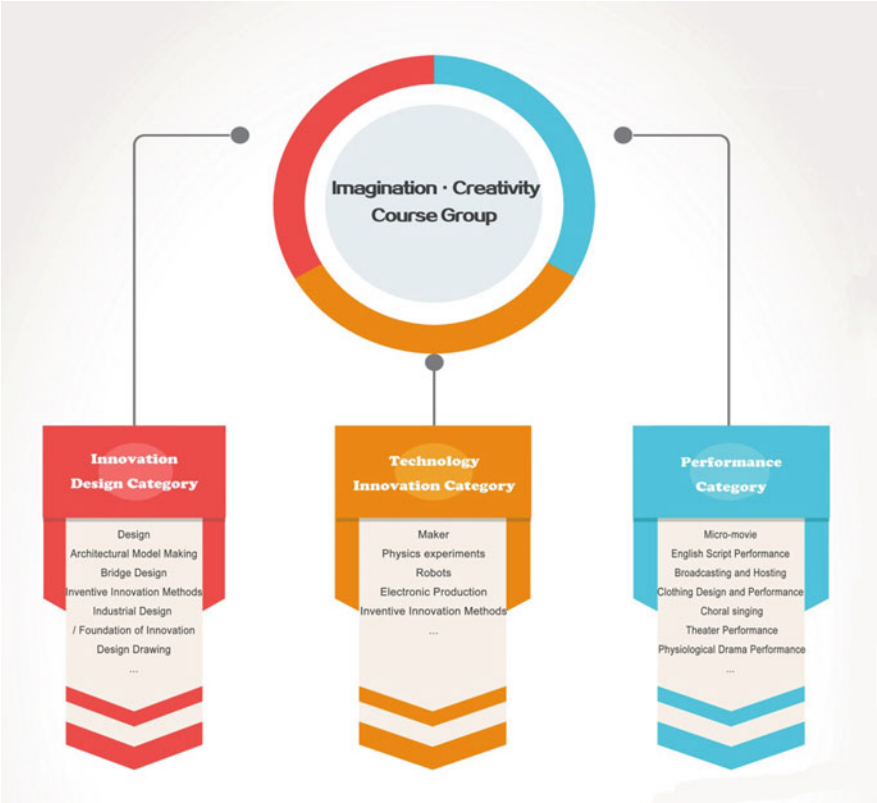

Fig. 5.2 Content structure of imagination • creativity school-based curriculum

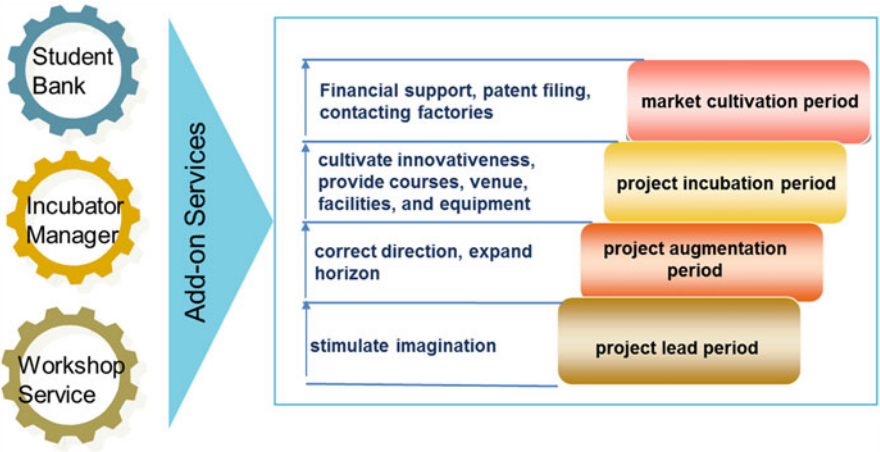

Fig. 5.3 Flowchart of project incubated learning

scientificity, feasibility, and innovation of the project as well as to provide guidance. The student-managed "Student Bank" can provide students with interest-free business loans to support the equipment that they need to purchase. Projects with a particularly high score in a previous project review can also apply for venture capital investment from the bank to fund the incubation of the project.

Project incubation mainly goes through the following four processes:

Stage I. Project lead period

Students learn basic knowledge and skills, then find real-world problems and creatively propose solutions. Students should learn basic knowledge, practice basic skills, and learn to write project plans and undertake implementation.

Stage II. Project argumentation period

The students' developing projects are continuously improved under the guidance of the teachers. They are reviewed by the incubator manager (teacher) and the incubator project screening committee (teacher–student group) in order to enter the project incubation period. During this period, students fill out a draft of the project design report, and after group discussions, combine their ideas and improve the project. Teachers should also use case to explain this theory and provide targeted and individualized guidance to students.

Stage III. Project incubation period

Students will learn the necessary knowledge in workshops and improve upon their practical abilities. Teachers provide knowledge and technical guidance for this project. When the students' project needs funds (From bank), they can apply for "campus venture capital" and financial support from the "student startup bank" until their project is completed.

Stage IV. Market cultivation period

This part is also the stage of student assessment. Students are assessed through three dimensions: materialized works, engineering journals, and research papers. Services such as competition entry guidance, patent filing, and the contacting of factories are provided from teachers for particularly outstanding projects. Each project needs to have pieces of work, journals, and papers submitted in addition to the students giving project presentations. Teachers and students will assess the course learning accordingly.

5.2.5 Curriculum Assessment

The school-based curriculum for the category of "imagination and creativity" courses relies on the integration of multiple disciplines, using multi-disciplinary learning methods such as practice, inquiry, and experience. Therefore, the curriculum assessment is mainly done through performance assessment that covers multiple disciplines.

For example, the assessment of the "Engineering Science Innovation" course requires students to be able to use one tool language, make one material piece of

Table 5.2 Assessment of "Industrial Design"

Assessment item	Assessment method	Percentage (%)	Score
Cooperative division of labor and performance	Teacher assessment, assessment within the group	20	
Group study kits, including group design and production plan texts, photos, design sketches of various units, mind maps, etc.	Teacher assessment	10	
Group presentation and work report	Teacher assessment, assessment within the group	20	
Work score (integrity, function, material, form, efficiency, performance, esthetics, ingenuity, etc.)	Teacher assessment, peer assessment	50	

work, record one engineering journal, and write one research paper; the students will be assessed along these four dimensions, described below.

Be able to use one tool language: Students must be able to use a programming tool to write an open source hardware control. Directed toward computational thinking.

Make one material piece of work: Students should use a tool such as a lathe, clamp, mill, plane, or grinder, along with technology such as laser cutting or 3D printing, to make a tangible, innovative, or interactive media piece of work. Directed toward materialization ability (general technology) and artistic creativity expression (art).

Record one engineering journal: Students must draft, record processes, and work as engineers. Directed toward pattern expression capabilities (general technology) and engineering thinking (general technology).

Write one research paper: Students will express thoughts in an academic language and present research in a standardized chart. Directed toward the ability for research-based learning (Hu, 2017).

As another example, the assessment of the "Industrial Design" course focuses on the learning process as shown in the table below (Table 5.2).

5.2.6 Mechanisms

5.2.6.1 Develop a Curriculum with a Large Resource Perspective and Establish a Multi-Disciplinary Curriculum Cooperation Development Mechanism

Junior high school teachers are limited by their academic backgrounds. When developing a curriculum, their vision may not be broad enough, resulting in a curriculum with inadequate professionalism. To this end, Xishan Senior High

School worked with universities, research institutes, and high-tech companies to develop courses. For example, the developed "Industrial Design" course is professionally oriented. It involves psychology, sociology, esthetics, ergonomics, mechanical construction, photography, color science, and other forms of knowledge. For this reason, our school developed the course in conjunction with Jiangnan University School of Design and the University of New South Wales School of Architecture and the School of Humanities and Arts. University teachers and foreign teachers developed the "Design Courses" based on the school to create a model industrial design education center. We also implemented a "Reverse Feeder" program to establish a return-to-school teaching mechanism for college graduates. For example, Xie Chao, winner of the Science and Technology Innovation Governor Award, returns to the school from the university every week to conduct the "Electronic Production" class. The plan of "Replace courses with resources." It means that the school's venue and facilities are rented out to companies for free, and in turn, the companies send professional technicians to teach. The plan of "Buy course services." It means that the school purchases high-quality courses.

5.2.6.2 Starting from Practice, Develop Standards for the Construction of Dedicated Classrooms with Independent Intellectual Property Rights

The implementation of the course requires protection from the surrounding environment. The functional classrooms in the school have been completely created and led by businesses; practicing teachers have had no input. Xishan Senior High School adopted the idea of "start with development curriculum then build the classroom" and followed the idea of "developing curriculum—curriculum practice—demand analysis—learning from experience—independent research and development" while focusing on "me." The front-line teachers have developed more than ten sets of classroom construction standards including industrial design classrooms, film workshops, maker spaces, fashion design centers, and creative workshops.

These functional classrooms integrate the functions of workshops, exhibition halls, classrooms, resource libraries, and teacher studios. For example, the "Electronic Design Room" includes not only basic processing equipment such as electric soldering irons but also supplies cabinets and semi-finished products storage areas, which are used in daily teaching. There will also be a book borrowing area where related books and magazines from the library will be placed for the students to use freely. In addition, there is a teacher's work area where the instructor's office is located, a display wall for the students' works, and a display area of outstanding projects. An access control system was also installed so that authorized students can freely access the facilities using their access card, which facilitates extracurricular activities. These classrooms have laid a solid foundation for the effective implementation of this type of curriculum.

5.2.7 Example

The "Micro-movie" course developed by Teacher Huang Hong has the typical characteristics of an "imagination and creativity course." In this course, students need to observe life, find a central issue, then let loose their imaginations and write a movie script. The course spans disciplines such as general technical information technology and art, and the students need to use a video camera, recording equipment, and editing and processing software to turn their work into a finished product. The curriculum syllabus is as follows (Table 5.3).

5.3 Summary

By observing the development of the imagination • creativity school-based curriculum, we can unpack several experiences in the curriculum development practice of Xishan Senior High School, which will be discussed in more detail below. First, the current development department embodies the school's educational philosophy, and the curriculum development is geared toward cultivating the desired graduates. Second, the school has implemented some national courses in a school-based manner to solve several problems in the current school-based curriculum development. Third, the school has actively innovated new channels, gathered surrounding resources, and enhanced the professionalization of its school-based curriculum. This provides a technical path for others to learn from the same type of school-developed curriculum.

5.3.1 Consistency

The school's educational philosophy, curriculum objectives of the imagination • creativity courses, and actual curriculum development are consistent. The objectives of the imagination • creativity courses are in line with the school's educational philosophy and were developed under the guidance of the said educational philosophy. In the "Ten Major Training Standards" issued by Xishan Senior High School in 1926, there is a requirement to "develop a sensitive and sophisticated mind, practice the skills of increasing production." "A sensitive and sophisticated mind" can be "developed" through solving engineering problems. "Practice the skills of increasing production" requires students to be good at practice, diligent in practice, and "practice" within rigorous engineering norms. After comprehensive consideration of the "Ten Major Training Standards," the curriculum objectives of this category put forward requirements such as "strict thinking, good practice, insight into creation, and technical norms." Through the course study, students can achieve the objectives of "love life, are passionate, are creative, appreciate beauty, and love."

Table 5.3 "Campus Micro-movie" curriculum syllabus (partial)

Course title	**Campus Micro-movie**		Xishan Senior High School, Jiangsu Province		Huang Hong
Applicable grade	First- and Second-year high school	**Total class lesson periods**	**18**	**Course category**	Imagination and creativity
Course introduction	This course is suitable for first- and second-year senior high school students. It aims to lead students to pay attention to inner feelings, focus on campus life, and satisfy the desire of high school students for artistic expression and creation. The course covers the fields of literature, art, music, information technology, and so on. This course has the characteristics of cross-border learning, cooperative learning, and experiential learning. The course adopts a "constructive" cooperative learning model, allowing students to record the events around them, express the intricacies of campus life, and form correct social values. Students can choose different roles (screenplay, performance, video, post-production, etc.) for inquisitive learning. Course instructors are co-chaired by art and general technical teachers. The course will be assessed during the school's "Micro-movie Festival."				
Background analysis	Omitted				
Course objectives	Through this course, students will be able to: 1. Use micro-movie art language (such as landscape, sports, lens, etc.) to follow the basic processes of micro-movie creation to carry out micro-movie creation activities. 2. Experience four different roles (screenwriter, cameraman, performer, post-production worker), learn a skill in-depth, and apply that skill to micro-movie production. 3. In the group, actively undertake their role's tasks, and use their knowledge and skills to cooperatively produce at least two campus micro-movies. 4. Through the creation of the campus micro-movies, pay attention to the expression of inner feelings, take note of campus life, and convey positive beliefs. 5. Experience the educational significance of cooperation, sharing, respect, and reciprocity in the process of creating and communicating through campus micro-movies.				
Learning theme/activities arrangement	The main activities and processes are: sharing the course experience role—role inquiry—micro-movie shooting—micro-movie imitation show—show the micro-movie—movie festival.				
Assessment activities/ performance assessment	Omitted				
Main reference	Omitted				
Remarks	Omitted				

In recent years, Xishan Senior High School has proposed a mission to cultivate people who have "strong life, noble spirit, excellence in wisdom, and emotional fullness." In the curriculum plans for imagination • creativity courses, the objectives of cultivating engineers with superior intellect and designers with emotional fullness are consistent with the school's educational philosophy.

The courses within the imagination • creativity category are also in line with the school's educational philosophy. For example, in the "Bridge Design" course, students must complete an actual task and design a bridge over the canal to the east of the school that can allow cars and pedestrians to pass over. Students need to measure, design, and create a model, and then test it. In the process, they must plan and design like an engineer, develop a sensitive and precise mind at work, and practice, produce, and practice production skills through inquiry like an architect does.

It can be seen from the objectives of this category of courses that the individual development of each subject revolves around the school's educational philosophy, thereby achieving consistency between the two.

5.3.2 Innovation

Imagination • creativity courses have innovated the path of school-based implementation of the national curriculum. When Xishan Senior High School began developing the school-based curriculum of the imagination • creativity category, they implemented the national curriculum in a school-based manner and integrated the school-based curriculum, art curriculum, general technology, and information technology courses using the credit system. The new structure of the content of these courses covered the main subjects in the art and general technology curriculum. Such an implementation has the following advantages.

The first is that it solves the problem of which lesson period is to be used. In high school, teachers and students alike face the pressure of college entrance examinations. Students are relatively nervous during lesson periods, and the number of school-based courses is limited. Xishan Senior High School includes at least one art course, at least one general technology course, at least one school-based course, and at least one research-learning course per week. In this way, a system of elective courses with at least four per week has been formed at Xishan Senior High School. School-based courses, including those under the imagination • creativity category, thus have sufficient curriculum implementation time. Some of the courses such as "Micro-movie II" and "Engineering Science Innovation" can also be implemented using two lesson periods per week in back-to-back sessions.

The second advantage is that it solves the problem of who will conduct the teaching. In high schools, teachers generally have a heavy teaching load, and it is difficult to free up enough time and energy to teach school-based courses. The above-mentioned national curriculum will be implemented in a school-based manner, and all the courses in the first and second year of high school will be integrated

into the imagination • creativity curriculum system. This way, two out of the eight teachers of the Xishan Senior High School Art Department and the six teachers from the General Technology Department will become full-time school-based course (such as imagination • creativity courses) instructors. Given the team of teachers, there are also teaching and research activities for conducting school-based courses. Teachers can cooperate with each other to discuss how to improve the quality of the courses. At the end of each semester, the Art and General Technology subject groups organize a group of teachers to conduct end-of-semester teaching exchanges, share experiences, and negotiate future course development. This helps with the professionalism of the courses.

Another advantage is that it solves the problem of where the course content comes from. When teachers develop curriculum, some start from their personal interests and specialties, essentially teaching what they know. The result is a teacher-based curriculum development. The development of the imagination • creativity curriculum is based on the selection of academic elements from the fields of art, general technology, information technology, and physics. Thus, the content of the course has a foundation in specific fields; the academic nature of the curriculum content is guaranteed.

5.3.3 Professional Support

The professionalism of imagination • creativity courses is enhanced through resource gathering. The surrounding resources available to regular high schools are relatively limited, especially in suburban junctions like the one where Xishan Senior High School is located. Compared to big cities, the number of surrounding universities is fewer. Gathering resources during the curriculum development process to enhance professionalism is an urgent problem that needs to be solved.

The first method to meet this need that was adopted by Xishan Senior High School is to partner with universities. As early as 1996, in cooperation with the East China Normal University, the school systematically introduced the school-based curriculum theory and answered questions at the theoretical level to engage in curriculum development. During the initial planning for the imagination • creativity courses, the school approached Jiangnan University, which is 25 km away from the school and whose design major ranks among the top three in China, to work together in developing courses with a focus on "Industrial Design Foundation." The two sides reached an agreement to build a training base for national-level industrial design talents in Xishan Senior High School. Five professors from the School of Design of Jiangnan University came to Xishan Senior High School to teach each week. After revising the "Industrial Design Foundation," the courses became oriented toward the school-based curriculum. Xishan Senior High School sent a full-time teacher to study with five professors the whole time. The school cooperated with the university from the practice level of curriculum development, which greatly improved the degree of professionalism of the courses. In 2016, Xishan Senior High School

began to work with Nanjing Aerospace University, which is 172 km away from the school. The teachers and graduate students from the university came to the school every week to develop the "Unmanned Aerial Vehicle (UAV)" course.

Xishan Senior High School also actively sent teachers out for further study. To develop the "Micro-movie" course, the school used the summer vacation time to send instructors and key students to attend the summer classes of the Beijing Film Academy for further study. To develop the "Maker" course, the school selected three teachers involved in the course development to Kingswood College in Australia to study for a month and drew on their experiences for curriculum development. Xishan Senior High School cooperated with its sister school, Hainan junior high school, to jointly train instructors for courses on robotics. Thus, Xishan Senior High School enhanced the professionalism of its curriculum development through training its teachers.

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Chapter 6
How to Plan a School-Based Curriculum in a Junior High School

Shanyun He and Minghua Zheng

Curriculum reform has always been a popular topic in the field of educational reform theory and practice. Cuban (1990) proposed two levels of curriculum reform; the former involved the issue of "making the curriculum more efficient and effective" while the latter was related to "school organizational structural reforms" and other issues. Therefore, a thoughtful school curriculum reform naturally includes a series of topics such as educational philosophy, educational objectives, curriculum, assessment, and curriculum resources, and is profoundly influenced by the social environment in which it is located. Therefore, before we sort out, analyze, and understand the development, setup, and implementation of a junior high school-based curriculum, we cannot ignore the development history of the case itself and the current curriculum exploration attempts. Furthermore, we need to understand the background and context of the case. Thus, for this case study, let us first get to know the school and the complex environment it was in to look at the various curriculum decisions, the policies behind the movement, and the influence of parents and social opinions.

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6.1 Case Background

6.1.1 School History

The case that this paper wants to share is that of a public junior high school, Gongchen junior high school, from Gongshu District, Hangzhou City, Zhejiang Province. Founded in 1957, the school is located on the banks of the ancient Beijing-Hangzhou Grand Canal. It is the longest-running junior high school in Gongshu District. The school accepts different students from four elementary schools and thirteen communities. There are 1280 students in grades 7–9 and 120 teachers. In the course of the development of the school, it has consistently adhered to the school philosophy of "strive to develop the potential of each student and promote the differential development of students." The character "宸" (Chen) in the name of the school means "the place where the North Star is located." The school runs the "Star of Gongchen" selection activity every semester, where it chooses the most outstanding students in the school; this tradition has a 22-year history.

In China, public junior high schools are the primary form of junior high schools. According to statistics released by the Ministry of Education of China, the enrollment number of junior high schools in 2016 was 14,871,663 (Ministry of Education, 2017a), of which the number of enrolled students in private junior high schools was 1,887,366 (Ministry of Education, 2017b). The number of students enrolled in public junior high schools accounted for 87.30% of the total, accounting for the vast majority of junior high school enrollment. Second, Zhejiang Province, where Gongchen junior high school is situated, is located in the Yangtze River Delta region. It has the reputation of having a good foundation and has a certain leading and demonstrative role nationwide. Therefore, choosing a school-based curriculum reform case in a public junior high school in Zhejiang Province is more representative and universal and can provide the corresponding reference value for other schools in China and even those in other parts of the world.

6.1.2 Path of Exploring School-Based Curriculum

In the early days, Gongchen junior high school had sporadic school-based curriculum or curriculum module development but lacked the overall planning and curriculum construction of school-based curriculum at the school level. The school is adjacent to the Beijing-Hangzhou Grand Canal, and the culture of the Grand Canal profoundly influences the community. The school has a profound cultural heritage and rich cultural curricular resources. At the same time, the school has opened a large number of productive community activities including literature appreciation, mathematics development, *New Flame Drama(*新焰戏剧*)*, science entertainment park(科学百乐园), and other community activities, for a total of 67, involving language,

mathematics, science, sports, art, and other disciplines, forming a good foundation for school-based curriculum development.

6.1.3 Out-of-School Complicated Environment: Policy, Parents, and Public Opinion

Junior high school is the last 3 years of the 9-year compulsory education program and also a learning stage that connects regular high schools with vocational high schools. Most students are required to take a high stakes exam, the Senior High School Entrance Examination, after 3 years of junior high school, to determine the next school that they can attend. In China, high schools are sorted both according to category and according to level. High schools are divided into two categories: ordinary high schools and vocational high schools; they are also divided into provincial key junior high schools, municipal key junior high schools, and ordinary junior high schools. Attending different levels of high schools is generally considered to bring about different types of opportunities to enter nationally renowned universities after graduation. For example, if a student attends a provincial key high school, it means that he/she will likely be able to attend a famous Chinese university. A student who attends an ordinary high school is not generally considered as having the opportunity to attend a nationally renowned university. Therefore, the Senior High School Entrance Examination, taken after junior high school, is considered to be a preview of the National Higher Education Entrance Examination and plays a role in setting the direction of student development. For this reason, academics in junior high schools are very competitive, which poses significant challenges to the development of school-based curriculum. Therefore, in the actual curriculum reform situation, junior high schools often face a complicated environment.

6.1.3.1 Official Requirements from Curriculum Reform Policy

Policy requirements for junior high school school-based curriculum are a part of the curriculum reform of compulsory education. In 2015 in Zhejiang Province, where Gongchen junior high school is located, the Education Department issued the document "Guiding Opinions of the Zhejiang Provincial Department of Education on Deepening the Compulsory Education Curriculum Reform" and proposed a policy blueprint for the new round of curriculum reform in the province. Among the suggestions, the most important was to divide the curriculum during the compulsory period into basic and extended curriculum. Extended curriculum refers to "study content provided by the school for students to choose independently" (Zhejiang Education Department, 2015), which is a curriculum independently established by the school, and its fundamental connotation is consistent with the school-based curriculum.

The policy document identified the categories and proportion of lesson periods of school-based curriculum for junior high schools in Zhejiang Province, and it requires three categories: subject extension, physical interests, and practical labor. The school-based curriculum takes up 20% of the total lesson periods. In order to prevent an increase in the students' learning burden, knowledge extension category classes cannot exceed more than 30% of the school-based curriculum. This policy document provides strong policy support for the deepening and development of school-based curriculum in Zhejiang Province. With the advancement of the curriculum reform policy, school-based curriculum development has become an essential task in the curriculum development of each junior high school. In addition, since 2013, the concept of Key Competence has gradually entered the purview of curriculum policy reform researchers and has gradually become a key issue in the new curriculum reform. In September 2016, the Ministry of Education promulgated the "Chinese Student Development Key Competencies," which also became a policy requirement for the development and implementation of school-based curricula in various schools.

6.1.3.2 Parents' Voices

In Hangzhou, primary schools are divided into two systems: public schools and private schools. The enrollment in private schools is associated with corresponding admission examinations. In the process of enrollment, the student's academic ability and level are considered. Most parents of students in private junior high schools are managers in private enterprises, private business owners, university professors, and so forth. Generally speaking, the cultural and social capital of such families are superior than those of other families, and competition to attend private schools is fierce. Because public schools admit students based on their residence within a school district, students do not need to pass a selective examination. The student population is more diverse, and their learning levels are also quite varied. Parents of students in public junior high schools come from all walks of life. The differences in economic capital, cultural capital, and social capital of the families are relatively large. Therefore, they have more say when it comes to educational concepts, student expectations, and so on.

6.1.3.3 Paradoxical Public Opinion

Finally, let us look at public opinion on the reform of junior high school school-based curriculum reform. Although "academic burden reduction" is a reform trend recognized by public opinion, policy documents and newspaper media do not report on the willingness to reduce the burden of learning in junior high schools. However, one reality that has to be faced is that, because of the competitive pressure of the Senior High School Entrance Examination, primary schools have to bear the pressure of "improving academic achievement," that is, whether they are effectively

using the students' learning time and improving their learning efficiency and academic level. When a school's management department assesses how well the school is being run, student performance in the Senior High School Entrance Examination plays a decisive role. The "good school" that the public often talks about refers to the excellent performance of students on the Senior High School Entrance Examination and that a certain number of them are typically admitted into provincial key junior high schools, which have limited slots. Therefore, the promotion of the school-based curriculum reform in junior high schools needs to respond to calls for "academic burden reduction" as well as "quality education" while being subject to the pressure of performance evaluation based on the students' examination results.

6.2 Curriculum Plan of the School

Faced with the development needs of the school curriculum itself, external pressure from the education policy, and changes in the social environment, Gongchen junior high school decided to conduct comprehensive planning and formulate a school curriculum plan. The school curriculum plan is the overall design, arrangement, and implementation of the school curriculum at the school level. It plays a guiding role in the development of the school's teaching activities including the school's vision, mission, and goals, as well as the specific content of the curriculum structure and course categories. In this section, we will further present the school curriculum plan of Gongchen junior high school.

6.2.1 Vision, Mission, and Goals of the School

6.2.1.1 School Vision

The vision of Gongchen junior high school is "to develop the individual differences of students as resources, to build a team of growth-based teachers, to maximize the development of each teacher and student, and to cultivate students who are 'educated, diligent, elegant, physically fit.' The school strives to make itself a high-quality junior high school with an international vision."

6.2.1.2 School Mission

In order to realize the above vision, take advantage of the school's 60 years of tradition, and focus on the requirements of the "new curriculum reform," the school has proposed a school mission formed by mutual consultation on the basis of interviews with the faculty and staff:

- Formulate a multi-disciplinary curriculum system to cultivate the comprehensive qualities of different students;
- Create a team of teachers who are practical and wise, and establish a sense of responsibility in the pursuit of excellence;
- Cultivate a welcoming and harmonious school culture and create a caring campus environment;
- Strengthen the guidance of advanced and pragmatic professions and build a school with harmonious quality.

6.2.1.3 Educational Objectives

The school has been going through developments for more than half a century, and famous teachers have gathered together, including former director of the city's teaching and research department Tao Zhangyu, language teaching researcher Fang Shunrong, director of the Municipal Education Institute Chen Fengming, and deputy director Han Siping; these renowned teachers have taught in Gongchen junior high school and helped to lay a solid foundation for the development of the school. The students cultivated by the school have made their presence all around the world including Fei Junqing, a research specialist and Vice Chairman of the Zhejiang Social Science Association; Yang Xuhua, a veteran of the battlefield famed in Gobi, general of the military, and calligrapher; Zhou Guocheng, a "double artist" passionate about Zhejiang and Lingnan culture; the aerospace hero Fei Junsheng; world aviation model champion Ge Meng; and a number of comrades in leadership positions in the provincial and municipal party and government organs. Therefore, in the context of inheriting the traditions of the school and against the backdrop of deepening curriculum reform, the school is guided by the core literary needs of the students, and the educational objectives are as follows:

- Educated—Understand the knowledge in books and actively participate in various practical activities inside and outside the classroom. Through the multi-disciplinary curriculum of the school, students have ample curiosity and an enterprising spirit, extensively seeking a variety of types of knowledge, and can integrate and apply knowledge.
- Diligent—Inside and outside the classroom, students can fully think and think quietly, so that they can encounter problems and think independently. Let students have strong logical thinking and creative thinking, be able to depict the future for themselves actively, and plan their goals.
- Elegant—Let China's excellent traditional culture permeate the campus, and strive to create modern junior high school students who are elegant, law-abiding, and noble.
- Physically fit—With health there is beauty; let students establish the concept of "health first," let them voluntarily participate in physical exercise and develop good habits. Let students gain health and beauty in all kinds of courses in the school.

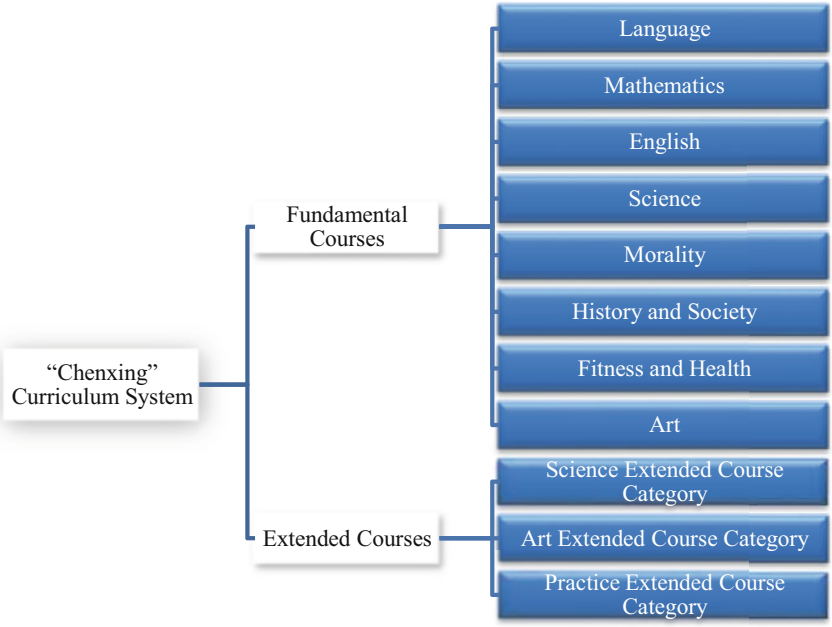

Fig. 6.1 Gongchen junior high school curriculum system

6.2.2 Course Structure and Categories

6.2.2.1 Overall Curriculum Structure

In accordance with the "Guiding Opinions of Zhejiang Provincial Department of Education on Deepening the Reform of Compulsory Education Curriculum," the school curriculum of Gongchen junior high school includes basic courses and extended courses (see Fig. 6.1). Among them, the basic courses include language, mathematics, English, science, morality, history and society, health and fitness, and art, which are the traditional subjects. These subject courses usually have curriculum standards promulgated by the Ministry of Education and have strict academic standards and assessment programs. The extended curriculum is developed and implemented by the school independently and includes subject extensions, physical interests, and practical labor categories.

6.2.2.2 Extended-Type Course Category

In Gongchen junior high school, the extended curriculum covers the six major fields of humanities, mathematics, technology, physical fitness, arts, and public welfare, which meet the students' different needs when it comes to their personality

Table 6.1 School-based curriculum categories in Gongchen junior high school

Course group	Course
Chenxing Humanities Course Group	Including literature courses, reading courses, academic courses in film, lectures and eloquence courses, international studies courses, etc.
Chenxing Mathematics Course Group	Including Sudoku courses, fun math courses, geometry production courses, etc.
Chenxing Technology Course Group	Including Maker courses, model courses, aerial photography courses, animation production courses, science entertainment park courses, etc.
Chenxing Art Course Group	Including art courses, performance courses, instrumental courses, handicraft courses, etc.
Chenxing Physical Fitness Course Group	Including ball courses, chess courses, orienteering courses, Tai Chi courses, bodybuilding courses, etc.
Chenxing Public Welfare Course Group	Including environmental courses, volunteer courses, small journalists courses, psychology courses, planting courses, etc.

development. This curriculum includes the Chenxing Humanities course group, Chenxing Mathematics Course Group, Chenxing Technology Course Group, Chenxing Arts Course Group, Chenxing Physical Education Course Group, and Chenxing Public Welfare Course Group. Each course group consists of related courses, which allows the school to offer a wide range of course options. The specific courses in each course group are shown in the table below (Table 6.1). The school initiates the selection and development of these courses according to the school's educational goals, the students' curriculum needs, and the school's curriculum resources.

6.2.3 School-Based Curriculum Development

6.2.3.1 The Principle of Development: Between "Want to Be" and "Can Be"

School-based curriculum development at Gongchen junior high school is a cautious and balanced process. Before starting the development of the extended curriculum, the school reviewed its philosophy and development history, expectations of the society, and other background information related to curriculum development. The school conducted a detailed SWOT analysis (see Table 6.2) which helped the persons in charge understand the strengths, weaknesses, opportunities, and threats from factors such as the geographical environment, school management, teacher resources, student status, and curriculum resources.

At the same time as the SWOT analysis, Gongchen junior high school also investigated the curriculum needs of its students and on this basis, determined the reform direction of the school's curriculum development.

Table 6.2 SWOT analysis of the development of Gongchen junior high school's curriculum

	Strength	Weakness	Opportunity	Threat
Geographical environment	It is located on the banks of the Beijing-Hangzhou Grand Canal and adjacent to the Gongshu District Government. It is a junior high school in an urban area	Adjacent to Shangtang Road, the traffic environment is complex and noisy	Establishment of the Gongshu Educational "Development Group."	There are many high-quality public and private secondary schools in a small geographical area
School management	School management models such as the "three-heads system" and "scientific research-led teaching" are highly recognized	The refined implementation of the management system needs to be further improved	District curriculum construction has led to the development of school teaching management	The old and new middle management are transitioning, and the management institutions are facing new adjustments
Teacher resources	The structure of the faculty is reasonable, the teachers are dedicated and adaptable, and the teachers are generally highly professional. A team of critical district and school teachers has formed	There is a lack of teachers with certain influence in the provinces and cities	Young and middle-aged teachers have strong development potential, and schools use various topics to extract the teaching experience of experienced teachers	The current situation of personnel system reform and teacher development mechanism makes teachers prone to the phenomena of burnout and excessive pressure
Student status	The vision is broad, the thinking is active, the interests are broad, the activity ability is strong, and the development of various disciplines is relatively balanced	Learning habits and learning abilities vary widely. The learning style is biased toward tradition, and the ability to innovate is insufficient	There is a need to evaluate the practice of reform, pay attention to the individualized growth of students, and expand the activities in various forms to enable students to have more opportunities to choose independently	The pressure for the examination of academic ability at the district level and the expansion of information channels bring about conflicts between diverse values and traditional academics
Course resources	The school-based curriculum has a certain tradition, and the community has rich curriculum resources	There is no systematic review of the curriculum resources	Schools in the district can provide support for extended course resources	Network communication in the information age brings with it some adverse effects

- *Layered implementation of teaching, focusing on target relevance*

The teaching content should be suitable for students' learning. The teaching requirements are suitable for the parties involved. It is necessary to respect the principle of student growth, embody the potential of human beings, stimulate the value and meaning of life, adapt to the needs of current and future development, and promote the development of the students' differences so that each student will gain maximum development.

- *Advocate self-learning and activate the subjectivity of learning*

Emphasize students as the main body of learning, focus on the cultivation of self-education and self-learning ability, and activate the internal motivation and learning ability of each individual as the fundamental focus of the curriculum.

- *Develop a multi-disciplinary curriculum that reflects the selectiveness of education*

This school should provide students with a wealth of courses in order to meet the multiple intelligence development needs of the students on the one hand, and on the other hand, to reflect the concerns of different students' individual needs so that each student becomes a "Star of Gongchen."

Based on the surveys of students' development needs, Gongchen junior high school has developed a work plan and a specific action plan for curriculum development, always noting the balance between the current extended curriculum development and school curriculum resources, school development history, and social expectations.

6.2.3.2 Uses of Curriculum Workshop to Organize

The organization and mechanism of curriculum development is the guarantee for the development of school-based curriculum. In Gongchen junior high school, the school appointed a school curriculum management team leader, the principal, to directly lead the management of the school's new curriculum implementation. School-based curriculum development is mainly carried out in the form of workshops. The school curriculum department takes the lead and appoints the key teachers of each subject as the "workshop owners." Based on the actual situation of the school and the needs of the students, the categories of courses for the five major areas have been developed and established, and the corresponding "curriculum workshop" team has been formed to be responsible for the specific curriculum development. They form a work echelon within the specific "curriculum workshop" and carry out cooperative development with teachers through the use of specific issues in the curriculum development as the discussion and research themes. Between "curriculum workshops," the school established a mechanism for teachers to exchange and share their experience, which helps them to exchange and discuss

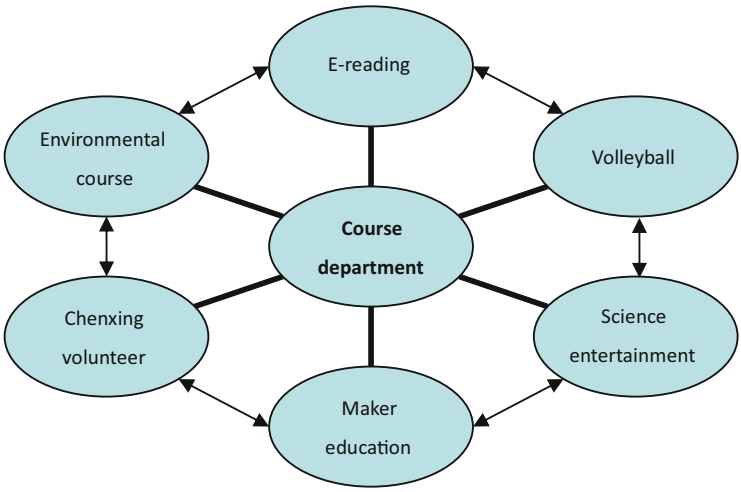

Fig. 6.2 Working mechanism of the curriculum workshop

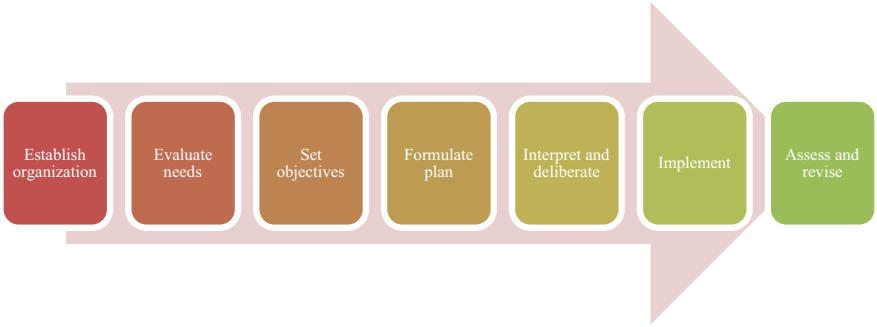

Fig. 6.3 Process of course development

the universal issues of curriculum development, thereby improving the overall level of school curriculum development (see Fig. 6.2).

6.2.3.3 Development Process: From Development to Review

Gongchen junior high school has formed corresponding processes and mechanisms from curriculum development to curriculum review (see Fig. 6.3). The school first established a "curriculum workshop," a teacher-based curriculum development organization. Based on the student curriculum interest survey, the teachers negotiated the objectives of the curriculum and created the curriculum plan through their workshops, which involves the following steps. After the preliminary design of the plan is completed and after the review is conducted by the school curriculum

committee, the course enters the experimental stage. In the middle of the semester, the guidance office and the teaching department conduct a multi-stage investigation of each experimental course. At the end of the semester, the course is assessed through the normative writing of the teacher's program, the effectiveness of the curriculum implementation, the survey of the students' satisfaction with the course, and so on, which answer the following two questions: First, should the course continue to be offered? Second, if it will continue to be offered, what adjustments need to be made?

6.2.3.4 Resources for Development: Cross-Border Cooperation

Gongchen junior high school makes full use of the curriculum resources inside and outside the school in the development of its school-based curriculum. On the one hand, custom-made individualized training programs for teachers help to enhance their professional development with a focus on developing their abilities for curriculum development and implementation. On the other hand, the introduction of several excellent external curriculum resources with the help of universities, parents, communities, public education institutions (such as libraries, museums, and science and technology museums) are useful for the opening of school-based courses and improving the variety and quality of school-based courses. For example, the volleyball course was introduced by sports experts from the university while the relevant art courses were introduced through resources from the community and parents and outside lecturers were invited to the class.

6.2.4 Implementation of School-Based Curriculum

The implementation of extended courses is more flexible than that of the national foundation courses. The extended curriculum at Gongchen junior high school combines long and short class periods according to the characteristics of the course and the principles of learning. Long lesson periods are usually 60 min or two standard lesson periods integrated into a 90-min period to provide sufficient time for in-depth study. Short lesson periods are 40 min long to provide more opportunities for different categories of school-based courses. In the implementation of specific extended courses, the schedules of different grades are arranged as shown in Table 6.3. The use of short and long class periods is more rationally based on the nature of the course and the characteristics of the students' learning for flexible arrangement to achieve better curriculum effectiveness.

We randomly selected the class schedules of 7th grade HT students of Gongchen junior high school from both before and after the curriculum reform (see Tables 6.4 and 6.5) to see the effect of the school-based curriculum reform on the students' choices of courses and curriculum experience from a personal perspective.

Table 6.3 Class schedule of school-based curriculum

Grade		Average weekly class periods			Remarks
		Seven	Eight	Nine	
Extended courses	Knowledge extension category	1 long lesson	1 long lesson	1+1 long lesson	(1) One of the long lessons is 1 h every Friday and is implemented uniformly. (2) According to the specific situation of each course category such as knowledge extension, students will carry out stratified work for one extended class period. Students of the physical interests category courses will learn according to their own specialties such as using the time during class for activities for their own development. Courses for the practical activity category, public welfare category, investigation and research, etc., will be implemented according to the arranged class periods
	Physical interest category	1 long lesson	1+1 long lesson	1 long lesson	
	Practical activity category	1 standard lesson+1 long lesson	1 standard lesson+1 long lesson	1 standard lesson+1 long lesson	

Table 6.4 Gongchen junior high school 7th grade HT students' class schedule before the curriculum reform

	Monday	Tuesday	Wednesday	Thursday	Friday
8:00—8:45	English	English	Language	Language	Mathematics
8:55—9:40	Information	Society	English	Mathematics	Language
10:00—10:45	Mathematics	Mathematics	Science	Science	Science
10:55—11:40	Physical education	Science	Society	English	Physical education
	Afternoon self-study	Afternoon self-study	Afternoon self-study	Afternoon self-study	Afternoon self-study
13:20-14:00	Science	English	Mathematics	Music	English
14:10-14:50	Language	Physical education	Morality	Society	Art
15:00-15:40	Morality	Mathematics	Information	Society	Self-study
15:50-16:30	Activity	Language	Science	English	Class meeting
16:40-17:10	Counseling and answering questions	Counseling and answering questions	Counseling and answering questions	Counseling and answering questions	Counseling and answering questions

Table 6.5 Gongchen junior high school 7th grade HT students' class schedule after the curriculum reform

	Monday	Tuesday	Wednesday	Thursday	Friday
8:00—8:45	English	English	Language	Language	Mathematics
8:55—9:40	E-reading	Society	English	Mathematics	Language
10:00—10:45	Mathematics	Mathematics	Science	Science	Science
10:55—11:40	Physical education	Science	Society	English	Physical education
	Afternoon self-study	Afternoon self-study	Afternoon self-study	Afternoon self-study	Afternoon self-study
13:20-14:00	Science	English	Mathematics	Music	English
14:10-14:50	Language	Physical education	Life education	Society	Art
15:00-15:40	Morality	Mathematics	Information	Society	Literature appreciation
15:50-16:30	Activity	Language	Science	English	Class meeting
16:40-17:10	Counseling and answering questions	Counseling and answering questions	Counseling and answering questions	Counseling and answering questions	Counseling and answering questions

A comparison of the curriculum before and after the reform of a student's class schedule reveals that the school-based curriculum promotes the development of the school curriculum and changes the students' curriculum experience. The first change in the curriculum is that the students' "Information" course became the "E-reading" course. The course changed from a single-disciplinary course to an interdisciplinary (information technology, language) course. The second change in the curriculum is that the students' "Morality" course became the "Life Education" course, and the curriculum content changed from a unified teaching content into a school-based moral education curriculum. The third change in the curriculum is that the self-study time on Friday afternoons became the "Literature Appreciation" course. Students can choose the courses they are interested in from the 67 courses available to take up the class period originally allocated for self-study.

6.2.5 Assessment of the School-Based Curriculum

The school assesses the performance of its students within the school-based curriculum in a variety of ways. Each semester, the students conduct a self-assessment according to the Hangzhou Junior High School Graduates Comprehensive Quality

Assessment Form to assess their performance based on the assessment criteria. At the same time, in accordance with the school's "Chenxing" student development standards, the teachers give each student a descriptive assessment and encouraging comments. In the different curriculum areas, awards such as "Technology Star," "Sunshine Star," and "Reading Star" affirm the students' performance. At the same time, teachers pay attention to the performance of the students during the learning process and give students the appropriate assessment based on their input level, ability performance, and other aspects. Teachers use portfolios, transcripts, and other means to record and save the assessment information.

6.3 Summary

After presenting the case of Gongchen junior high school, we can draw on some experiences from the design and planning of the overall curriculum of the school. Here, we mainly analyze four such experiences, including the relationship between the school-based curriculum and the school's value system, why and how the school-based curriculum was developed, how to study school-based curriculum, and how to assess school-based curriculum.

6.3.1 School-Based Curriculum and Consistency with the School's Value System

At the beginning of this paper, we analyzed the complex curriculum reform situation in Gongchen junior high school. The school's value system is oriented both toward the development history of the school and the future direction of the school. At this stage, the school also needs to respond to the curriculum reform policy promulgated by the education authorities ("Guiding Opinions of the Zhejiang Provincial Department of Education on Deepening the Compulsory Education Curriculum Reform") and the new requirements from the "Chinese Student Development Key Competencies" framework promulgated by the Ministry of Education. At the same time, the school needs to face the multiple demands such as those from parents, students, and so forth toward student performance on the competitive Senior High School Entrance Examination and the development of the students' quality education. As part of the school's curriculum, the school-based courses must respond to the school's needs in terms of the development philosophy and vision, education goals, and key competence to maintain consistency and unity. Because of the differences in the development bases and development direction among schools, each school will have different focuses at different times. Therefore, when constructing a school curriculum framework that includes school-based courses, it is first necessary to construct a school-based system of school concepts. If we

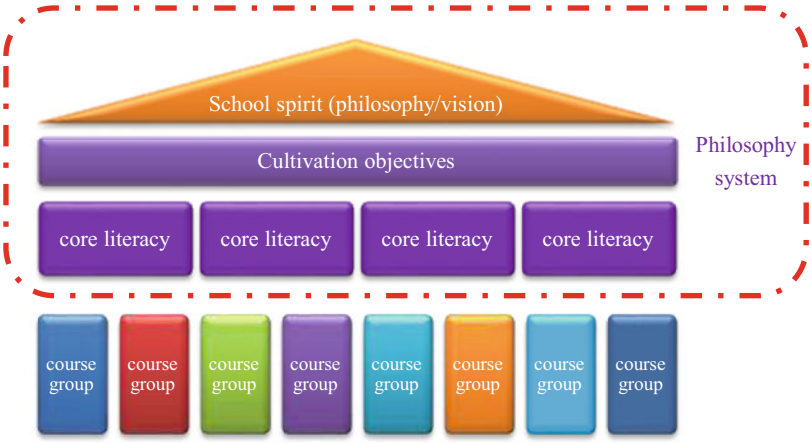

Fig. 6.4 Philosophical system and school courses of the school curriculum

consider the school's philosophy, education goals, key competence, and curriculum development as a "house" (see Fig. 6.4), we will find that the development of the school is affected by policy, society, and self-development. Only by maintaining the consistency of each part can there truly be a stable and beautiful "house."

6.3.2 Considering the Opening of the School-Based Curriculum from the Perspective of Society, Students, and Disciplines

The school-based curriculum complements the traditional national curriculum within the framework of the school curriculum. To a certain extent, it can be said that the school-based curriculum exists to fill in the gaps in the national curriculum. The three factors that influence the curriculum are society, students, and disciplines. When demonstrating the necessity of a school-based curriculum, it is important to think comprehensively from these three perspectives. For example, the "Life Education" course in Gongchen junior high school starts from the perspective of "member of society" for development and expands the learning content on the basis of the "morality" curriculum to better respond to society; it provides a boost for students to better adapt to social development. As another example, the opening of the volleyball course primarily takes into account the interest needs of the students, and the establishment of interesting mathematics courses is based on the factors of the disciplines, linking the subject curriculum with daily life to help students better apply their knowledge in the discipline.

6.3.3 Innovation in the Learning Style of School-Based Curriculum

The school-based curriculum not only innovates the content of the curriculum but also breaks through the traditional national curriculum in the implementation of the curriculum. It also increases social interaction, the design of authentic situations, the introduction of new technology, and so on; it utilizes many learning styles.

Increase in Social Interaction The constructivist theory holds that social interaction has positive implications for student learning and knowledge construction (Johnsteiner & Mahn, 1978); during the implementation process of the school-based curriculum, it increases opportunities for collaborative learning and small group-based curriculum learning. At the same time, there are times for sharing and exchanges during the course to help students increase their learning performance through interactions.

Design Authentic Situations Authentic situations are those that students will face in real life (National Research Council, 1996). The learning that this refers to lies in establishing the connection between learning and real life. The school-based curriculum of Gongchen junior high school was designed to make learning more meaningful for the students, increase the use of real-life situations in the learning process, such as with connecting their learning with life, and allow the course itself to become a site for the "ordinary practices of the culture" (Brown, Collins, & Duguid, 1989, p. 34). For example, in the course "Life Education" in Gongchen junior high school, a large number of real-life examples are used to construct the students' outlook on life, worldview, and values.

Introduction of New Technologies In the process of implementing the school-based curriculum, the school broke through the limitations of the traditional classroom learning space and introduced technology into the learning process, thereby "combining face-to-face classroom teaching with distance education communication methods" (Osguthorpe & Graham, 2003, p. 227). In order to improve the learning effectiveness during the curriculum implementation process, Gongchen junior high school provided students with various learning opportunities through diverse courses and with opportunities to work with fellow students. Part of the extended curriculum at Gongchen junior high school combines "online" and "offline" courses. For example, the language course "Internet + Extracurricular Reading," with the help of Internet technology, provides students with the context for thinking, allows students to consciously use thinking strategies for in-depth learning, thinking, and sharing, and enhances the ability of students to work in teams. At the same time, the introduction of the math micro-course has changed the structure of the traditional classroom and made classrooms more efficient. In addition, tablets, new media, and other such technological innovations are also used in the classrooms of Gongchen junior high school, thereby becoming learning tools and media for teachers and students.

Diversification of School-Based Curriculum Assessment Programs Compared with the national curriculum, the school-based curriculum should be more diverse in the design of assessment programs.

First, regarding "what is the assessment for" (assessment purpose), school-based curriculum assessment pays more attention to procedural learning and adopts formative assessment to provide students and parents with more rich information on learning, thus promoting the students' learning.

Second, it is necessary to have a "big concept" assessment perspective on the issue of "what should be assessed" (assessment scope). To move from the knowledge and skills, which are the focus of traditional curriculum, to the key competence of students including knowledge, ability, attitude, and emotion requires paying attention to the needs of students when it comes to solving the problems in their daily life and also focusing on the needs students will have in the future. Although there is a focus on solving the problems of students as they live localized lives, the school should focus on the need for students to adapt to international lives.

Third, on the question of "what to be used to assess" (assessment method), the school-based curriculum gives students more ways to present their learning outcomes such as by holding debates and producing small reports on canal culture studies for performance assessments. In addition, the students use new media technologies to publish and share their learning outcomes with each other. The introduction of performance assessment can provide assessors with information that could not be obtained through traditional paper-and-pencil tests. This provides more descriptive evidence for the students' academic performance and helps to examine the learning objectives in new ways.

Fourth, on the question of "who will assess" (assessor), the assessment of a school-based curriculum also introduces self-assessment and peer assessment. On the one hand, this supplements the program with information that traditional teacher assessments do not have access to. This also helps to assess the learning itself. Student participation in the assessment is part of the learning process.

Finally, on the question of "how to use the assessment results" (treatment of assessment results), the assessment results of the school-based curriculum can present more aspects of student development more comprehensively and outline the development trajectory of students together with the results of the national curriculum assessment.

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Part III
Path and Prospect

Chapter 7
Achievements, Challenges, and Prospects of School-Based Curriculum in China

Wenye Zhou and Yunhuo Cui

From relative early obscurity to today's widespread acceptance, over 20 years, China's school-based curriculum has grown from a concept, a policy, and pilot exploration to practice in every school. These 20 years are by no means merely a description of time; it is difficult to easily define this time period through simplified ideas such as smooth progress or challenges. For everyone who joins the development of school-based curriculum in China, including policymakers, curriculum experts, school administrators, teachers, and parents, it is a journey through the jungle that has its own set of confusion and surprises. There are also difficulties, challenges, and rewards. Today, China's school-based curriculum is standing at a new starting point; further expansion of the process faces new challenges. The future development of school-based curriculum in China is promised from a thorough review of the path and existing status.

7.1 Achievements of School-Based Curriculum in China

From 2001, when Chinese school-based curriculum gained its legal position, to today, the 18-year period has seen school-based curriculum achieve breakthrough results in China. First, the concepts and policies of the school-based curriculum have received wide recognition. Second, the quality of school-based curriculum has generally improved. Third, a number of typical local examples were developed nationwide. More importantly, in this process, the universally recognized school-based curriculum concept, the curriculum leadership composed of principals, and the

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curriculum development and implementation of skills developed by teachers have promoted the overall implementation of the school curriculum.

7.1.1 Widely Recognized Concepts and Policies of the School-Based Curriculum

Traditions are very difficult to change. School-based curriculum in China was established in order to break out of the traditional "unified" curriculum management system and break away from past practices; the same can be said for the national curriculum. What is even more impressive is that this is a basic policy of top-down national-level basic education curriculum reform. *The Guidelines for Curriculum Reform of Basic Education (Trial)* clearly states "change the situation wherein the curriculum management is too concentrated and implement curriculum management at the national, local, and school level to enhance the adaptability of the curriculum to the locality, school, and students" (Ministry of Education of the People's Republic of China, 2001a).

Over the past 18 years, the concepts and policies of school-based curriculum have been widely recognized. Among the websites and self-introduction materials of many primary and secondary schools, school-based curriculum has become the highlight and main characteristic of the schools. In some areas, the construction of school-based curriculum has become an essential part of the regionally promoted curriculum construction. Additionally, many parents and community members are very supportive and involved in the construction of school-based curriculum.

An empirical study of ours also shows that the concepts and policies of school-based curriculum are widely recognized. We used the junior high school in Z city, a provincial capital city in Central China, as a sample source. According to the basis points sampling principle, we drew from a total of 53 junior high schools from four districts of the city. Among them, 44 were public schools and nine were private schools. Of the 53 sample schools, 28 schools submitted school-based curriculum plans. We used the school-based curriculum quality assessment tool developed in Chap. 3, and had three experts with a consistent understanding of the assessment tool score each program's text independently. We then used the Winsteps software to analyze the scored data to generate the Wright Map (see Fig. 7.1). The straight line in the figure is a fixed-scale ruler with markings for the average value of two distributions (M), one standard unit deviation (S), and the standard deviation of two units (T). The left side of the scale shows the distribution of the school-based curriculum program plan quality of the 28 schools with the schools represented by numerical codes and the quality of the program text represented from top to bottom in a decreasing manner. The right side of the scale shows the distribution of the scores of the 18 assessment items, which are represented by numerical codes with the scores represented from top to bottom in an increasing manner. As seen from the assessment data, the school-based curriculum planning program has been executed

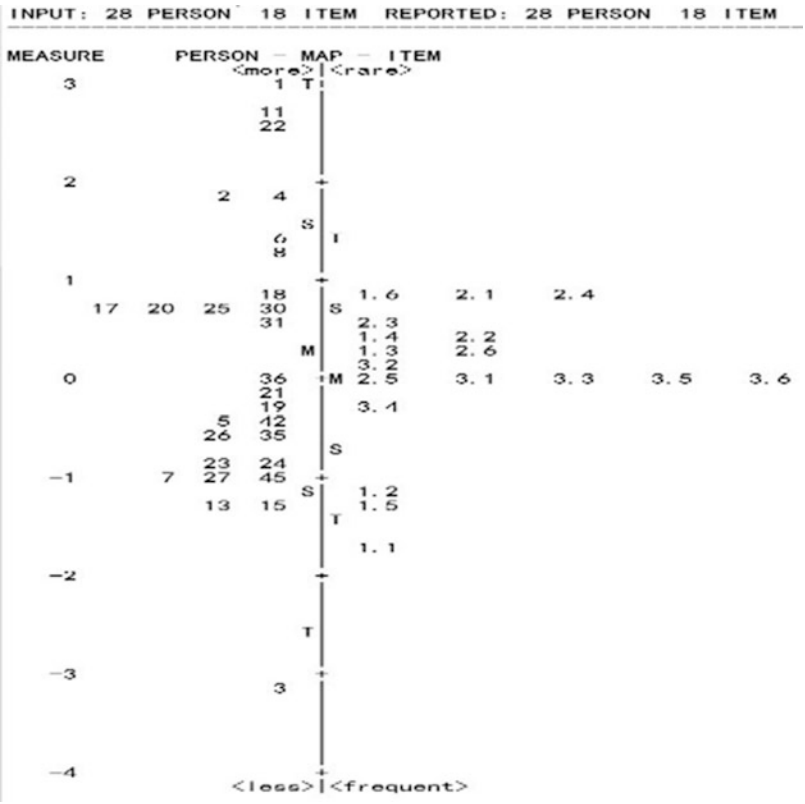

Fig. 7.1 Wright Map of school-based curriculum planning program quality

well in the following three areas: compliance with the concept of national or provincial curriculum program or the spirit of quality education (assessment item 1.1, eigenvalues −1.77 logit), clear proposed school-based curriculum direction objectives (assessment item 1.5, −1.32 logit), and content includes planning basis, school-based curriculum structure, and implementation and safeguards (assessment item 1.2, −1.15 logit). It can thus be seen that the concepts and policies of the school-based curriculum have been widely recognized and are fully reflected in the school-based curriculum planning program.

School-based curriculum has become a norm in school curriculum practice as part of the curriculum. It is designed to promote the development of students' individuality and has formed a consensus on the differences in the students' interests and needs. School-based curriculum is determined by the school and reflects the characteristics or showcase of the identity of the school. More gratifying, in this process, the school-based curriculum concept, which has received widespread recognition, along with the curriculum development and implementation skills developed by teachers through school-based curriculum development practices, have promoted the

overall implementation of the school curriculum. At the same time that the concept of new curriculum reform was widely received, locations such as Shanghai and Zhejiang have additionally expanded the autonomy of school curriculum management, thereby further enhancing students' capacity to select courses, promoting the students' personalized development, and improving the curriculum adaptability.

7.1.2 Improved Quality of School-Based Courses

At the school level, China's basic education has long faced the problem of how to motivate schools so that they can meet both the needs of their students and those of local social development to the greatest extent possible. The implementation of the school-based curriculum will undoubtedly provide practical solutions to this challenge.

As we have seen, in recent years, many primary and secondary schools in China have developed their own school-based curriculum development and implementation programs. Successful schools usually have established a sustainable school-based curriculum development mechanism from systems and assessment. Such mechanism in turn enabled the internal curriculum development capacity and thus built into their long-term educational effectiveness.

In the above-mentioned empirical study on the quality of school-based curricula, we mapped the average scores assigned by the three experts for the 28 programs of school-based curriculum planning that were submitted (as shown in Fig. 7.2).

Based on the comprehensive scores and on the basis of the dimensions of "purpose," "consistency," and "usefulness," we combined the scoring tool used above with the specific texts to distinguish and summarize four levels of the school-based curriculum planning program texts according to their characteristics (see Table 7.1).

By combining Fig. 7.2 with Table 7.1, we can see that, in general, schools have an overall planning awareness of the school-based curriculum. The project team

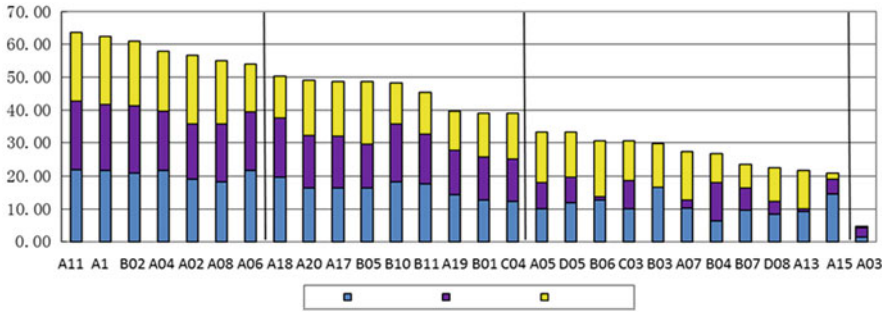

Fig. 7.2 Quality assessment scores of the school-based curriculum planning programs (Blue: purpose; purple: consistency; yellow: usefulness)

Table 7.1 Overview of the four levels school-based curriculum planning programs

Level	Score interval	Proportion %	Criteria
4	(54,72)	25.00	The text of the program is complete in structure and reflects the advanced educational concept It forms clear curricular objectives based on comprehensive consideration of national and provincial curriculum programs, the school educational philosophy, and student needs There is consistency between the various parts of the program The school-based curriculum structure has a clear logic The curriculum implementation section makes full use of resources, and has detailed descriptions of the complete implementation process, targeted recommendations for key points, and information on quality assurance measures to be implemented
3	(36,54)	32.14	The text of the program is complete in structure and reflects the advanced educational concept The school-based curriculum objectives have overall considerations, but the descriptions are not complete or clear enough There is a slight lack of consistency between the various parts of the program, and there is a vague logical relationship between the various components The curriculum implementation section describes key points and establishes relatively complete quality assurance measures, but individual sections lack specificity
2	(18,36)	39.29	The text of the program presents a certain structure, but the description of individual portions of the structure tends to be general There is a lack of consistency between the components, and some of the content strays away from the overall logic The curriculum implementation lacks some key links, and the quality assurance measures are relatively vague
1	(0,18)	3.57	The structure of the text is incomplete There is no overall logic between the various components The implementation measures are not instructive and operative The quality assurance measures are not specific

received the school-based curriculum planning programs from 28 schools, accounting for 52.83% of the total number of sample schools. This is a significant breakthrough for the curriculum implementation system of the "only one national syllabus" and "A Thousand Schools Only Have One Book" programs. The overall planning of the school-based curriculum of the school also reflects the strong leadership of the principal.

In addition, the overall quality of the program of school-based curriculum planning, as well as that of the 28 school-based curriculum planning, is relatively good. Among the 28 program texts, there are 16 schools with scores at the fourth level (between 54 and 72 points) and the third level (between 37 and 53 points), accounting for 57.14% of the total. There is only one school whose program of school-based curriculum planning scored at the lowest level. The achievement of

such results, after starting from scratch, fully reflects the speed of school-based curriculum development in schools.

From the teachers' perspective, with the advancement of the school-based curriculum, the teachers' curriculum development capability and the quality of the school-based curriculum have been continuously improved. In the past, curriculum development was undertaken by experts who were commissioned by the State. Teachers rarely took the initiatives to consider curriculum issues, which in turn led to a lack of contributions by frontline teachers in the basic education reform. Those teachers who wanted to improve basic education from a curriculum perspective had a difficult time exerting their creativity "legitimately." Since the implementation of the school-based curriculum, teachers' curriculum awareness and development abilities have been improved, and those teachers who want to have creative input have the "right" to display their own curricular thinking and development abilities. This can be said to be one of the most significant achievements since the official implementation of school-based curriculum in China (Cui & He, 2010).

The Institute of Curriculum and Instruction in East China Normal University cooperated with the Shanghai Adream Charitable Foundation to hold the biennial "True Love Dream Cup" starting in 2011, which is a national school-based curriculum competition. We asked the participating teachers to submit their "semester curriculum syllabus" and "teaching period lesson plan." Experts were invited to rate each of the curriculum design programs according to the school-based curriculum syllabus assessment tool shown in Chap. 3.

Taking the third biennial competition as an example, we received more than 2400 curriculum design programs from all over the country. These programs cover 32 provinces, autonomous regions, and municipalities under the Central Government, which reflect the general characteristics of school-based curriculum development in China. One of the researchers on our team analyzed the quality of the curriculum designs submitted by teachers to gauge the quality of school-based curriculum development in China (Liu, 2016a). Based on the scores of the curriculum programs, the quality of the school-based curriculum design program can be divided into four levels: the professional level, the preliminary professional level, the quasi-professional level, and the specialization level. About 37% of school-based curriculum design programs are at the quasi-professional level, 11% have reached the specialization level. This shows that the three-level curriculum management concept has taken root in practice and produced certain results.

The programs at the professional level can meet the advanced nature of the concept, be innovative in design, fundamentally satisfy internal consistency needs, and express normality. Although there may be problems in the design of the structure, module stacking, lack of depth, or other such features, these programs can correspond to curriculum objectives. Essentially, the programs are in alignment with the requirements of each element (curriculum objective, curriculum content, curriculum implementation, and curriculum assessment), the curriculum implementation is vibrant, and necessary requirements of diversity and relevance are reflected in the curriculum.

The programs at the quasi-professional level can reflect the development needs of children and comply with the relevant provisions of the national curriculum policy. The elements are complete, written scientifically, and standard, but not satisfactorily "consistent." Although the curriculum structure essentially matches the curriculum objectives, the logic is poor and inadequate to unify the children's psychological logic and the logic of the disciplines, the excessive pursuit of psychological logic and the emergence of the unvarying level of repetition cannot promote high-level cognitive development, or the excessive focus on the logic of the disciplines ignores the children's interests and needs. The learning style is diversified but not strongly relevent, and the excessive pursuit of activity diversity does not adequately contribute to the children deep learning. The assessment design is specific to the operational level, but the assessment subject is incomplete; it is mostly limited to the assessment of learning results and lacks assessment of the program itself. The developers of this type of curriculum adhere to the children-first concept. The curriculum elements are complete and substantially meet the requirements in construction and expression, thereby reflecting a certain level of professionalism.

It can be seen that after more than 10 years of intensive cultivation, school-based curriculum development has moved from initial germination to basic popularization to professionalization in China, and the development of school-based curriculum design has become part of the daily work of teachers (Liu, 2016b). The curriculum abilities developed by teachers in the development and implementation of school-based curriculum has further promoted the implementation of the national curriculum.

7.1.3 Formation of Exemplary Local Experiences

With the promulgation of relevant policies such as the *Guidelines for Curriculum Reform of Basic Education (Trial)*, the *Compulsory Education Curriculum Design Experimental Scheme*, and the *Regular Senior Secondary School Curriculum Program (Experiment)* (Ministry of Education of the People's Republic of China, 2001a, 2001b, 2003), school-based curricula have been incorporated into the framework of the national curriculum, forming a curriculum management model that combines "top-down" and "bottom-up" approaches. These publications also provide implementation guidance for the development and management of school-based curriculum. Thus, the school-based curriculum as a national curriculum began to enter an era of development. At this stage, the academic community has conducted more in-depth and comprehensive research on the school-based curriculum, introduced successful implementation experiences from abroad, and begun to try to solve specific problems in the development of school-based curriculum in China.

The majority of primary and secondary schools adhere to the school-based curriculum with a foundation in the excellent tradition of school reform. Under the guidance of national policies and professionals, they have thoroughly solved their problems in the process of promoting school-based curricula at the school level.

Exemplary cases in the development of school-based curriculum have been continuously emerging, and have generated impactful local experiences.

7.1.3.1 Fully Utilizing the School's Curriculum Resources

A group of innovative principals, under the three-level curriculum management system, established a school curriculum committee, lead school teachers to explore school resources, thoroughly studied the needs of students, and built a school-based curriculum system that is directed toward the school's educational goals and coordinated with the national curriculum. The second part of this book is composed of case studies of a single school-based course, a category of school-based courses, and the entire school-based curriculum of Maiyuqiao Primary School in Hangzhou, Xishan Senior High School in Jiangsu Province, and Gongcheng Middle School in Hangzhou, respectively. The book presents the experience of how these three administrations tapped into their respective school's resources to build a school-based curriculum. There are still many such experiences. The "China School-based Curriculum Development Case Series" (Cui, 2006–2011), edited by Professor Yunhuo Cui, has collected more than 100 school-based curriculum development cases from all over the country, including those from elementary schools, junior high schools, senior high schools, course experiences, and cases from Shanghai, among others. These excellent and typical experiences provide a reference for the construction of school-based curriculum in other schools.

7.1.3.2 Inter-School Sharing of Curriculum Resources and Development Experiences

School-based curriculum development, as the name suggests, is curriculum development based on an individual school. However, taking into consideration the openness and cooperation of the philosophy, along with the fact that there is an uneven distribution of curriculum resources and differences in curriculum construction abilities among senior high schools in China, the new curriculum emphasizes the idea that schools should form alliances and cooperate; this should be done on the basis of a relative distribution of labor and, in the development of courses, a list of local school-based curriculum subjects that schools can choose from should be established. This can facilitate resource sharing, reduce wastage, and avoid "small and comprehensive" style curriculum developments. Inter-school collaboratively created courses usually develop in one of the following ways: at least two teachers from two schools jointly develop a course; at least two schools jointly commission or fund a third party to develop courses, and the results are shared; at least two schools form an alliance, and the products, teachers, facilities, and so on are shared within the alliance; and a model school supports the curriculum of ordinary or weaker schools.

7.1.3.3 Regional Coordination Matters

In order to improve the quality of school-based curriculum across an entire region, many regional education administrative departments and educational research departments have set up school-based curriculum management departments for school-based curriculum teaching as well as research positions to provide guidance for the promotion of suggestions and for school-based curriculum construction throughout the region. Some regions even cooperate with university researchers to carry out university-regional cooperation to promote school-based curriculum research and practice. The Xuhui District of Shanghai is a typical case. The Education Bureau and the Institute of Curriculum and Teaching of East China Normal University cooperated in the Xuhui District Primary School Curriculum Construction Project. Through various efforts, a phased outcome has been formed as Improving School Curriculum Leadership: Selected Cases of Primary School Curriculum Construction in Xuhui District, Shanghai (Zhuang, 2017). As mentioned in the preface of this book, this document hopes to provide lessons for more basic-level schools to deepen curriculum and teaching reform, and introduce strategies, paths, and methods to solve problems in daily work. Through individualized curriculum construction, the coordinated development is realized. Thus, coordinated development has become the goal of promoting curriculum construction in some regions.

7.2 Challenges for School-Based Curriculum in China

With the continuous advancement of the new curriculum, outstanding cases and valuable experiences that have emerged everywhere have proved that the school-based curriculum has taken root in the fertile soil of Chinese education and has transformed local settings and creativity in its early phases. However, we should also note that, due to factors such as an insufficient understanding of policies and the profound influence of curriculum-centered courses and teaching culture, the further deepening of the school-based curriculum in China still faces many challenges.

7.2.1 Misunderstandings of School-Based Curriculum

The biggest obstacle to whether a school-based curriculum can be implemented with high quality in every region and every school is misunderstandings. These misunderstandings are summarized in the “five standards” created by Cui and Hong (2008).

7.2.1.1 Task Standards

"Isn't it true that our superiors are checking to make sure we offer school-based courses? I see that the 'chess' course offered by our sister school is very special, so we should also offer the same course. Is that appropriate? Let's just deal with that later. . ." Considering school-based curriculum as a task that must be dealt with will inevitably distort the value orientation of the school-based curriculum. The consequence of such a perspective is that the school-based curriculum ends up being composed of repetitive courses where schools simply copy each other. Whichever courses that happen to be unique and are offered by one school will be copied by others. In the end, the offerings among different schools will all be identical. What is the motivation for school-based curriculum? Curriculum construction is intended to be used to meet the students' development needs, promote the professional development of teachers, and create unique school cultures; this is the value pursuit of the school-based curriculum. Therefore, the construction of a proper school-based curriculum must take into account the school's educational philosophy, the actual needs of the students, and the conditions for offering courses. If the school-based curriculum construction is regarded only as a task to meet inspection requirements and has been hastily implemented, then the school-based curriculum is nothing more than a rushed decision without much contemplation behind it. Even if the curriculum includes a variety of courses and may seem complete, it has no soul.

7.2.1.2 Textbook Standards

"Our school has achieved fruitful results with school-based textbooks. Each teacher has used their own textbooks and students have their own books. . . ." For a long time, textbooks have been the main curriculum resource for school education, which is why, when people think about school-based curriculum development, they naturally think of compiling, printing, and distributing textbooks. They consider this to be an indispensable method as well as the results of school-based curriculum. As everyone knows, school-based curriculum is characterized by proximity to different regions, schools, and students. The problem with considering textbooks alone as school-based curriculum, to start, is that textbooks written by a few subject experts have difficulty taking into account individual differences due to the textbooks' high degree of uniformity. The simple use of such textbooks is not suitable for the "school-based" spirit. However, mobilizing teachers to write their own textbooks seems to utilize the teachers' subjectivity, but it in fact increases their workload outside of daily teaching. In such cases, the differences in resources and teachers between different schools do not allow each school to produce qualified textbooks. Even if they are completed and published, their scope of application is minimal.

Moreover, textbooks to be used in courses are strictly controlled by the state and must be approved by the relevant departments. Uncertified textbooks are not allowed to be distributed to students. In fact, school-based curriculum development

advocates for a perspective based on the diverse needs of student development, establishes the awareness of curriculum resources, breaks out of the misunderstanding of textbooks, and uses flexible materials such as course syllabus, teaching briefs, and thematic syllabi to integrate various static and dynamic resources.

7.2.1.3 Subject Standards

"The college entrance examination has increasing requirements for the comprehensive quality of students' knowledge. I will just use the school-based curriculum to give students more test content that is not in the textbooks and deepen their understanding...." School-based curriculum should be understood within the framework of the national curriculum. Whether it is the establishment program of the compulsory education stage or the curriculum program of a regular senior high school, the relationship between the boundaries, scope, and time limit of the national and local curriculum are well defined. Therefore, the school is not allowed to freely change and increase the teaching content of subjects that will be part of the entrance examination, increase difficulty, or use the class periods allocated for school-based courses as times for subject tutoring or competition preparation under the guise of a school-based curriculum. To make such changes would cause the school-based curriculum to exist in name only and make it an extension of the national curriculum and a necessary condition for the examination subjects. The functional complementarity between the national curriculum and the local and school-based curriculum should be properly handled, and the relationship between the subjects in the both curricula should be correctly understood in order to truly realize the unique value of the school-based curriculum. Some of the courses in the school-based curriculum may be related to the existing subjects, but it may be that the topic is not part of the system; it is something that students are not required to take. These can be courses that are generated from the students' interests rather than the teacher's presupposition; they are student-interest-based rather than test-oriented.

7.2.1.4 Teacher Standards

"I think that Teacher Li is good at calligraphy, so let Teacher Li offer a 'Pen Calligraphy' school-based course for the first grade...." One of the misunderstandings toward school-based curriculum development is to believe that the school-based curriculum is a teacher-based curriculum. Teachers are the main body of school-based curriculum construction and the most important curriculum resources, but this does not mean that teachers can decide which school-based courses to develop at will. Instead, the development of a school-based curriculum must take into account whether a given course fits the overall curriculum program of the school. If a school-based curriculum only considers the abilities of the teachers, it can easily be separated from the school's educational philosophy.

More importantly, the starting point of a school-based curriculum should be the students' interest. Many of the courses that teachers believe to be extremely important are not actually considered so by the students. Because these courses are offered due to a teacher's "strong-arming," they do not reflect the real interests of the students. For example, in the situation above, it is important to practice calligraphy, but for first-year students who are overwhelmed by the sheer number of books they are required to study, calligraphy does not necessarily stimulate their desire to learn. This misunderstanding behind the teacher-based curriculum lies in a misunderstanding of the curriculum philosophy; it does not reflect the democracy of the curriculum. Additionally, its positioning in reference to the school-based curriculum is incorrect, and it does not follow the general procedures for school-based curriculum development. The students' learning needs are not investigated in advance, which should be the basis for planning.

7.2.1.5 Activity Standards

"Isn't the school-based curriculum what used to be known as the activity class? Let students engage in activities. We will start activities for football, basketball, table tennis...." School-based curriculum has inherited the advantages of traditional activity classes and under the guidance of the teacher, it can satisfy the students' interests and needs through activities that are meaningful for their education and also form a close connection with the students' life experiences.

However, in some implementations of school-based curriculum, teaching activities is for the sake of having activities, that is, "activities alone without curriculum." In that case, the purpose of setting up activities has lost the original intention of the school-based curriculum. It does not reflect the characteristics of the locality and school and does not meet the students' developmental needs. This kind of activity has form but no meaning; it is nothing but a shell. Students do not meet the curriculum objective. School-based curriculum advocates students to actively participate, to be willing to explore, and to be diligent; this does not mean that teachers should simply provide activities without guidance. Because the school-based curriculum does not set a unified curriculum standard and curriculum content, its implementation requires the participation and professionalism of the teachers. Otherwise, the school-based curriculum would become an arbitrary curriculum whose function would not be worth mentioning. Therefore, activities in the school-based curriculum must be carefully planned, designed, organized, and assessed, as well as being closely linked to the students' interests, wishes, lives, and social developmental needs.

It can be seen from the above "five standards" that the current misunderstandings toward school-based curriculum development in China lie in focusing on the details but missing the big picture, emphasizing individual factors such as tasks, textbooks, subjects, teachers, and activities, which lacks a systematic, holistic curriculum awareness.

7.2.2 Under-Addressed Value of School-Based Curriculum

School-based curriculum is a type of curriculum that juxtaposes the national and local curricula and has important independent values. However, in the implementation of the curriculum, the value of the school-based curriculum has not received the attention it deserves. The following examples are ways in which school-based curriculum may not be fully recognized, presenting a challenge to its implementation.

7.2.2.1 Ignoring the Value of School-Based Curriculum to Meet the Needs and Interests of Students

The misunderstandings detailed in the "five standards" above embody a neglect of the value of the school-based curriculum for meeting the needs and interests of students. In truth, curriculum exists for students, and school-based curriculum exists because of the needs, interests, and personality development of the students. However, the design and implementation of the school-based curriculum at the school level and classroom level do not adequately attend to the students' needs and interests.

For example, curriculum decision makers lack an awareness of the students' perspectives. When schools arrange and plan for a school-based curriculum, they often do not start from the viewpoint of their students. Instead, in many situations, schools start by temporarily developing courses because their superiors are coming for an inspection. Here, both teachers who have insufficient teaching hours according to their performance appraisal and those with exceptional skills are told to open school-based courses. We have seen that the planning of many school-level curriculum programs have no trace of the students. When designing a school-based curriculum program, teachers often take a teacher-based approach, only ask the teacher, and take the teachers' point of view into account. They turn the school-based curriculum program into a teacher's work plan, which disregards the students and their learning as the center of the design.

In another type of situation, the curriculum decision makers consider the students but do not give them the opportunity to provide feedback. Some schools and teachers consider students when designing and implementing school-based courses, but are focused on the students' external development that is directly related to their curriculum needs; there is no real inquiry and collection of students' feedback. In fact, none of the society, country, school, teachers or parents can be considered to speak for the students. We must listen carefully to the real needs of the students to know what their interests. However, when many schools are planning their school-based curriculum, they use the "thoughts" of the school leaders to reflect the needs of the students and often regard the ideas they had when they were students as the supposed thinking of the current students. When teachers design school-based

courses, they frequently believe that the course is very valuable, and so as long as student attend this course, they will gain experience or reap benefits.

It is for this reason that teacher-designed school-based curriculum programs often have similar descriptions: "The art of printmaking... not only enriches children's lives, but also promotes their brain development, enlightens their thinking, and improves their physical coordination. It is an esthetic education activity that cannot be replaced by other courses. The positive educational value of printmaking education is also the pursuit of a school-based curriculum. Let children understand the characteristics of printmaking, the diversity of printmaking, and the unique contribution of printmaking to social life in a wide range of cultural contexts" (Cen, 2017). Discussing the overall meaning of the art of printmaking only through the perspective of the course can result in positive meaning for the students' development. Discussing the printmaking course can, in a general sense, meet the curriculum needs of the students. However, whether the actual needs of the students are met is not of concern.

Again, students have a chance to speak, but their needs are not valued and satisfied. Some schools have collected student input through means such as questionnaires and interviews, but measures to meet those needs were not implemented. The lack of response is mainly manifested on two levels: The first level is that there is no clear understanding of the needs of the students. The second level is that although the analysis uncovered the students' needs from the school-based curriculum, the objectives do not reflect these needs. For example, some schools may mention "meeting (or considering) students' interests (or needs, characteristics)" in the program of school-based curriculum planning but there is no further explicit content about "what the students' interests (or needs, characteristics) are." Some schools present the content of student needs in the plan, such as is the case with school: "The survey results show that the development needs of our students have certain commonalities: a need for healthy living and guidance for happy learning," but the subsequent objectives and curriculum arrangement do not specify how to enable students to experience healthy living or guide students toward happy learning. No specific measures respond to the students' needs (Cui, Zhou, Cen, & Yang, 2016).

7.2.2.2 Ignoring the Opportunity for the School-Based Curriculum to Promote the Development of Teachers' Curriculum Capability

"Because principals and teachers have long solely implemented mandatory curriculum plans, it has been impossible and unnecessary for teachers to have many curriculum capabilities. This makes the working style of the principals and teachers too dependent and focused on taking orders. Their enthusiasm and creativity when it comes to independent judgment and creativity have greatly shrunk" (Wu, 2000). This may also be due to the influence of the prescriptive curriculum plan, such as the school-based curriculum, which gives the school and teachers autonomous space to develop; however, they may not know what to do with this newfound autonomy. In

general, most teachers or schools approach the school-based curriculum as a task or a job; they do not fully understand or explore the value of the school-based curriculum in enhancing the teachers' curriculum ability.

We often hear school leaders say, "The teachers in our school do not have the ability to execute even the national curriculum well. How can they have the ability to develop the school-based curriculum?", "Under the current situation, which primarily focuses on the graduation rate, it is not necessary for teachers to spend so much time creating school-based courses," "Let the teachers in the major classes do their work and have the deputy teachers do the school-based curriculum work," and so on. From these arguments, we can see that school leaders are concerned with the fact that the school-based curriculum takes up manpower and time. They do not consider or plan how this curriculum policy space can be used to develop the teachers' curricular abilities. In fact, teacher participation in school-based curriculum construction enables teachers to have certain curricular decision-making powers, which is conducive to their transformation away from their traditional functions of "preaching, teaching, and clearing up confusion" and role of being "mere teachers." Teacher participation in school-based curriculum construction can help teachers to gradually realize that they "are not only curriculum implementers, but also curriculum researchers, designers, and assessors" (Jin, 2001). Importantly, in this process, the teachers' curriculum ability is improved.

From the perspective of the teachers themselves, it may be because of the influence of teaching traditions and their environment that they are not fully aware of the value that school-based curriculum brings to them. "The school will let me open a school-based course this semester. If you have any relevant materials, please send me a copy," "The Internet is very convenient now. Any school-based course can be found online. I can just download one and be done with it," "In any case, the school-based courses are not part of the exams, so the only goal is to make the students happy," and so on. Perhaps the teachers do not know how to design and implement school-based courses, but a current common phenomenon is that teachers do not fully realize that they can enhance their curriculum ability by developing school-based courses on their own.

7.2.2.3 Ignoring the Effects of School-Based Curriculum on School Curriculum and Its Cultural Construction

Associated with the "task standard" and the "lack of student position," many schools do not use the school-based curriculum as an integral part of the school's overall curriculum. In these situations, the school-based curriculum is often seen as a dispensable presence outside the national curriculum. In many schools, school-based courses exist in silos, there is no structure, and there is no coordinating relationship between national courses and local courses. Similarly, we have seen that many schools' curriculum planning program do not have clear educational objectives; while some describe educational objectives, it is difficult to find a relationship between the school-based curriculum and those educational objectives.

These phenomena all indicate that the school does not recognize the role of school-based curriculum in the overall curriculum construction of the school.

It goes without saying that school-based curriculum construction should be an integral part of the overall curriculum of the school; in addition, the school-based curriculum also advocates the needs of students as the starting point, emphasizes the unique characteristics of interests, activities, and practices, and promotes the transformation and construction of the school curriculum culture. The head of the teacher development department of a senior high school once said that their school's student development, teacher professional development, and overall school curriculum development benefited from the school-based curriculum. In the process of planning, teachers mastered the ability of school-based curriculum development and paid more attention to the students' needs in their teaching. They then applied these curricular abilities to the implementation of the national curriculum in a school-based manner. It became obvious that the effectiveness of the national curriculum was greatly improved and the students' scores in the national curriculum increased. The school's performance regarding independent university enrollment has also improved. These results were all due to the school-based curriculum satisfying the teachers' needs and improving their abilities. Unfortunately, such examples are still rare.

In addition, the prominence of the "school-based" element in the school-based curriculum distinguishes "the school itself" from the national and local curriculum. However, there are not many schools that have been able to distinguish the characteristics of the school, and highlight such characteristics, through a school-based curriculum. Many schools do not have a good sense of their own school culture. They tap into their own resources but neglect the role of school-based curriculum in the construction of the school culture. They develop what is popular and disregard the characteristics that make their schools unique.

7.2.3 Limited Curriculum Capacity

In China, the concept of the curriculum has been widely disseminated since the new round of basic education curriculum reform in the country. Previously, school administrators were mainly concern with the preparation of the curriculum and teachers mainly carried out their work according to the syllabus and teaching materials. In just over a decade, China's basic education curriculum reform has achieved positive results, but in general, the curriculum construction capability of schools and teachers is still limited (Cui et al., 2016).

7.2.3.1 Inadequate Curriculum Planning Capability in Schools

The philosophy of school education and educational objectives are the foundation of the school and also the main basis for the school-based curriculum. However, in reality, many schools lack an awareness or ability to form a clear educational

philosophy, and cannot clearly answer the following questions: What is the school's educational philosophy? What kind of person does the school seek to cultivate? What are the graduates going to be like? This is so much the case that the school's overall work has lost its soul.

Furthermore, many schools' curriculum construction has failed to pay sufficient attention to the students' curriculum needs. The biggest difference between the school-based curriculum and the national curriculum is that it is "school-based." Responding to the needs of students is the most important objective of a school-based curriculum. However, the reality is that current school-based curriculum construction falls short of their concerns and does not respond to the needs of students.

Again, the courses offered by some schools do not reflect a coherent or particular structure. All courses of a school should be educational, have clear objectives, and serve the educational philosophy of the school. When schools introduce their school-based curriculum construction experience, many are proud to say that their school has dozens or hundreds of school-based courses but ignore the purpose for offering these courses and the structure between the courses.

This problem is mainly reflected in three ways. First, the courses offered by the school are not coherent. For example, perhaps a school determined that its objectives are for students to "cherish life, learn to train, mental health...", but there are no courses relating to cherishing life or mental health. In another example, the school's school-based curriculum includes six categories of courses such as art cultivation and information technology, but the school-based curriculum objectives do not include the objectives of art cultivation courses and no information technology courses were arranged in the subsequent curriculum structure.

Second, the school has no structural awareness of the course categories in their school-based curriculum. In this case, the school has a large number of school-based courses but the relationship between these courses is unclear.

Third, some schools classify their own school-based courses but the classification logic varies, or there are crossovers and overlaps between the categories. For example, one senior high school divides its courses into the student-centric category, practical operation category, art and health category, traditional and modern culture category, and science and innovation category, which clearly do not follow a unified classification logic, thereby leading to a chaotic curriculum structure. Some schools divide the course categories according to the subject category where the teaching content belongs. An example is the classification of the school-based courses into categories such as "language and art," "humanities and society," and "sports and health"; this is a common classification method but in reality, "language and art" and "humanities and society" are intertwined.

7.2.3.2 Inadequate Curriculum Development Capability in Teachers

Many current teachers lack curriculum awareness. When the curriculum reform in the new century gives teachers space and power to develop their own courses, most

teachers find it difficult or unable to do so. The first issue that appears is their lack of curriculum awareness. They are used to a system of "syllabus–textbook–reference materials–teaching." It is difficult for a teacher to move from a frame of thought revolving around "teach the textbook" to a curriculum-thinking frame of thought centered on "children's learning."

Because of this tradition, when teachers receive the task of developing a school-based course, they often begin by thinking about where they can find a textbook for the course and how to find materials to compile rather than studying the needs of the students, determining the positioning of the course within the overall school curriculum, setting up goals for the course, and other such issues. In short, due to the influence of traditional ideas about teaching, teachers have weak curriculum awareness, which significantly hinders the development and implementation of the school-based curriculum.

Thus, the skills of teachers in curriculum development and implementation need to be improved. The influence of traditional teaching and the current pre-employment training and on-the-job professional development for teachers lack courses related to teachers' curriculum ability. When faced with the task of developing and implementing school-based curriculum, many teachers believe that they have no foundation. When teachers were asked to develop the curriculum program for a school-based course, not only did they not understand the significance of developing the curriculum program, they were also unclear about the four key questions that must be answered in the curriculum program. When it comes to the curriculum objectives, teachers are still accustomed to traditional ideas. The objectives are often written from the perspective of the teacher; the teachers are unable to write the objectives from the perspective of the students.

Moreover, in many cases, the curriculum objectives that the teachers have written are difficult to measure, the relationships between the seperate objectives are unclear, and the relationships among knowledge and skills, processes, methods, and emotions, attitudes, and values perspectives are underdeveloped. The teachers perform relatively better when it comes to curriculum content and curriculum implementation; however, curriculum assessment is a weakness. Finally, the most prominent issue is the consistency between the various elements of the curriculum. Teachers are more focused on the choice of teaching materials and the development of classroom activities than on coherence. They lack the skills to consider the consistency between the curriculum content, curriculum implementation, curriculum assessment, and the curriculum objectives.

7.3 Prospects for School-Based Curriculum in China

After clarifying the challenges faced by the current school-based curriculum in China, we can start from the existing results and shortcomings to project the future development of school-based curriculum. Problem to be solved in the future is no longer a problem of "increasing quantity" but a problem of "quality improvement."

Among the challenges, enhancing the value recognition of school-based curriculum, improving the curriculum capacity of schools and teachers, and establishing a deliberation mechanism for school-based curriculum are the prioritized tasks for promoting the future development of school-based curriculum.

7.3.1 Enhance the Value Recognition of School-Based Curriculum

Value recognition of school-based curriculum is a pressing issue. The traditional examination culture has limited the space of school-based curriculum. It is much needed to re-examine the value of school-based curriculum from the perspective of holistic and individualized growth. The following subsections show the values that need to be recognized in order to improve the quality of school-based curriculum.

7.3.1.1 A Clear Understanding of the Independent Value of the School-Based Curriculum

School-based curriculum is a type of curriculum that juxtaposes the national and local curricula, and upholds important independent values. In the Compulsory Education Curriculum Construction Experimental Program, the school-based curriculum was suggested to be a co-existing category with the national curriculum and local curriculum. The specific arrangement of the three types of courses in the curriculum plan embodies the idea of the three-level curriculum management, that is, the reasonable arrangement of who decides the children's curriculum so that the country, locality, and school will share different rights and be responsible for their own courses. The reason they are relatively independent is mainly due to "who" dominates curriculum development. The national curriculum refers to the parts of the curriculum commissioned by the central government to experts in, for example, the fields, subjects, and modules in the compulsory and elective credits in regular senior high schools. The local curriculum refers to the parts of the curriculum determined by the relevant curriculum policies to be commissioned to experts by the local (mainly provincial) level government. The school-based curriculum refers to the curriculum developed by school teachers or other people according to relevant policies. Due to the different subjects of development, all three types of curriculum have different functional orientations, but they are equally important for the development of students.

The school-based curriculum, as an independent type of curriculum, is not merely an extension of the national curriculum, a combination of specific subjects, or an accessory to examinations and competition. It has its own unique value.

While the national curriculum focuses on the common foundations and unified requirements, the school-based curriculum addresses the differences among students

and their interests. While the national curriculum is stipulated by the state and reflects the will of the nation, the school-based curriculum is determined by the school and reflects the characteristics of the school and the personalities of the students. While experts take charge in the development of the national/local curriculum, the development of the school-based curriculum is undertaken by teachers. While the national curriculum is mainly a formal curriculum, the school-based curriculum is an informal curriculum. Looking at class hours, the amount of time allocated for the school-based curriculum in the curriculum program is far less to that for the national curriculum. However, from the perspective of student development, the school-based curriculum is indispensable, irreplaceable, and increasingly important. In other words, the school-based curriculum is a vital part of the basic education program in China. School-based curriculum is to be understood in the specific context of the national curriculum, but not as an isolated curriculum that exists independent of the national curriculum program.

7.3.1.2 The Vitality of the School-Based Curriculum

The vitality of school-based curriculum lies in student interests. Its foundation is rooted in the school-based, teacher-focused curriculum designed to meet the diverse needs of students. Therefore, focusing on, researching, and satisfying the legitimate interests of students are the logical starting points, and destination, of a school-based curriculum.

The formation of interests has a lifelong impact on individual development. The purpose of education is to let children express their inherent interests; the curriculum gives students that opportunity. The school-based curriculum is a self-developed, self-selected curriculum that is designed to satisfy the interests of students. Schools must thoroughly study student interests and develop courses based on these interests.

In this process, first, schools should explore various channels for students to participate in the curriculum construction to ensure that they can make their own decisions. Second, various means (observation, interviews, questionnaires, etc.) should be used to gather, study, and assess the students' interests and clarify the scope, level, and type of interests to form a Program of School-based Curriculum Planning founded on the said interests. Third, schools should fully tap existing and available internal and external resources such as people, capital, materials, time, space, information to meet the multi-faceted needs of students to the greatest extent possible, so as to provide them with a variety of opportunities to express their interest. Finally, schools should fully consider the process of student interest development. During the curriculum implementation process, schools need to ensure that while protecting the students' right to select courses, they must ensure the applicability of goal setting, content arrangement, teaching methods, assessment methods, and management methods to more fully discover, maintain, and develop student interests.

7.3.1.3 Attending to the Significance of School-Based Curriculum in Promoting the Students' Growth As Individuals

Chinese education is gradually moving from mass-scale, universal development toward a quality-centered development. The starting point and foothold of the quality of education lie in promoting the growth of students. People's view of children, teachers and students, teaching, and curriculum emphasizes the value of school-based curriculum, which respects the different characteristics and needs of the students, provides high-quality curriculum and teaching resources, and promotes the full and proactive development of the students' individuality.

As far as school-based curriculum development is concerned, the initial consideration is to meet the diverse needs of different regions, schools, and students so that each school can develop specialized courses according to their own conditions and attributes. By doing so, every student will be able to choose courses that they are interested in according to their own characteristics, participate rightfully in curriculum decisions, and allow their individuality to be fully developed. In other words, the ultimate pursuit of a school-based curriculum is for students' individuality to be freely, thoroughly, and comprehensively developed, facilitating their development into unique individuals.

7.3.2 Strengthen the Capacity Building of School Curriculum

With the expansion of school curriculum autonomy, curriculum capacity building is extremely important. Inadequate curriculum-building capacity will lead to dangerous decentralization of the curriculum. It will directly affect the quality of education that students will receive. The curriculum reform is directed toward equipping teachers with the relevant professional qualities, appropriate knowledge and experience, and necessary curriculum capabilities to successfully implement this type of program.

7.3.2.1 Enhance the Teachers' Curriculum Awareness and Promote Their Professional Development

Teachers are essential to the school, as well as to school-based curriculum development. Any education reform without the active participation of teachers cannot be successful. From the perspective of the school-based curriculum, there is no curriculum development without teacher development. Therefore, the professional growth of teachers plays an important role in the development of the students, the school, and the curriculum itself. School-based curriculum development pursues a full and free development of the students' individuality, but the students' development does not happen naturally. Professional development of teachers is a prerequisite for the

formation of school characteristics and the inevitable guarantee for the development of the students' individuality. Therefore, the professional development of teachers is the inevitable pursuit of school-based curriculum development.

Especially in the context of the three-level curriculum management, part of the curriculum development is delegated to the schools, and teachers become one of the subjects of curriculum development. In this way, teachers are no longer just consumers and passive implementers of the curriculum, but to some extent, producers and active designers. This requires teachers, first, to have relevant professional qualities. As professionals, teachers must understand the concept of Liberal Arts education, and possess a professional attitude of openness and democracy, spirit, cooperation, and innovation in the face of challenges.

Second, teachers should possess the appropriate knowledge and experience. In particular, this includes some knowledge about concepts in curriculum development, some knowledge about child development, and some experience in curriculum development. Third, teachers should have the necessary curriculum skills. These curriculum skills include identifying the school's cultivation objectives, identifying the curriculum needs in the right context, knowing the curriculum skills and tasks of the school's partners, determining and presenting goals, selecting and organizing content, implementing skills and being innovative, using and improving assessment methods, using and developing on-site resources, making reasonable curriculum decisions, and having the necessary dialog and communication skills. Through the improvement of teacher education courses, teacher on-the-job training, school-based teaching research, and especially the enhancement of the curriculum skills of teachers in the school-based curriculum development process, teachers can move from a perspective of "compile school-based textbooks" to the design and implementation of curriculum programs based on the students' interests and the school's educational philosophy.

7.3.2.2 Motivating the Principal to Become a Professional Curriculum Leader

As one level in the three-level curriculum management framework, the principal, as the head of a school, is the first person responsible for the development and management of the school-level curriculum. The principal has the right to develop and manage the curriculum of the school in accordance with the relevant curriculum policies issued by the national or higher education authorities and therefore must also assume responsibility for the curriculum.

Principals play the following five roles. First, the principal should be an idealist of education, with a lofty and robust mission, and a willingness to construct a school that is just, fair, and humane so that children can become caring, responsible, and lifelong learners in a democratic society (Ou, 2003). Second, the principal should be a system reformer, adopt creative problem-solving methods, use professional enthusiasm, and desire to discover the meaning, purpose, and vision of both work and study. Third, the principal should be collaborative, establish a professional

community that works together, form a professional culture of care, creativity, criticality, and continued growth where viewpoints are shared through methods such as discussions, talks, exploration, debate, and questioning, and build a work environment with respect, tolerance, sensitivity, and mutual care. Fourth, the principal should be an open supporter who adheres to their moral belief, and who openly questions, challenges, and experiments with practical methods and idealistic hypotheses. Fifth, the principal should be a constructive seeker, actively creating meaning and forever pursuing the truth. The connotation of this type of curriculum leadership can be summarized in six aspects (Ou, 2003). The first is to clarify the philosophy of the school curriculum, the second is to design the school's curriculum program, the third is to implement the transformation of teaching, the fourth is to recreate the school structure and culture, the fifth is the formation and development of the educational community, and the sixth is to strengthen curriculum research (Ou, 2003).

7.3.2.3 Overall Improvement of School Curriculum Capacity

Improving the overall school curriculum development capacity is key to ensuring the quality of a school-based curriculum and to implementing the national curriculum program. The school curriculum capacity involves the ability of the school education community to develop all aspects of the school curriculum including its planning, design, implementation, assessment, and improvement.

In order to improve the curriculum capacity of the school education community, corresponding effective measures should be taken. First, we should establish a community cooperation mechanism for school curriculum construction. Through cooperation between teachers, departments, schools and communities, and parents, an effective school curriculum can be built. Second, the curriculum content of teacher education should strive not only to enable teachers to master the necessary curriculum and professional abilities but also to increase the corresponding content and to cultivate a high quality of research teachers' conduct with children and students. Third, in schools that meet the necessary conditions, the school curriculum committee, which is responsible for and regularly holds deliberation meetings or experiences cooperative meetings for the school-based curriculum program, should be established or improved upon. Finally, professional cooperation with university curriculum scholars should be strengthened so that the results of the school-based curriculum analysis, publication, and application will reach a relatively objective and professional level while at the same time enriching the professional cooperation experience of teachers.

Of course, the most important factor for improving the overall curriculum capacity of the school is the process of building a school curriculum using the school education community. At the school level, the first step in developing a school-based curriculum is that the school should take inventory of internal and external professional strengths to plan a comprehensive program of school-based curriculum within the framework of the national curriculum program, that is, develop a "Program of

School-based Curriculum Planning." This program is not only part of the overall school curriculum implementation but also an all-purpose description of the general thinking about the school-based curriculum development, and is also an important document submitted by the school to the superior education authorities.

Although the final result is a program, the process of forming the program is the process of school curriculum construction itself. This first requires the school education community to clarify the educational philosophy of its school and to determine which kinds of people the school wants to cultivate. Next, the school must study the students' interests and needs in a variety of ways; this is the starting point of school-based curriculum development. The two major issues above focus on the necessities for school-based curriculum development. At the same time, schools should study the possibility of satisfying the interests or needs of students according to the available resources of the school and community. In addition, schools need to strike a dynamic balance between what they want to do and what they can do, that is, to clarify the gap between reality and ideals, to clarify what should be done and can be done well but is not done well, and to determine how to improve current measures and the current level of knowledge and ability of the students.

Schools also need to understand whether the current curriculum structure is consistent with the actual situation of the school, whether it can stimulate the students' learning motivation, and what kind of assessment and promotion mechanisms should be established. In short, the formation of the "Program of School-based Curriculum Planning" is a form of "system engineering" that comprehensively considers a wide range of factors; it is not a one-step process. It is a scientific, open, and democratic decision-making process of school-based curriculum development. The process involves the participation of principals, teachers, curriculum specialists, students, and parents and community members in the development, implementation, and evaluation of school-based curriculum programs. This process is one of improving the overall curriculum construction capacity of the school.

7.3.3 Establish a Two-Level Curriculum Deliberation Mechanism

"Focusing on development rather than on deliberation" was ongoing problem in the early days of the school-based curriculum. After solving the problem of "has it been developed," the local administration and school should establish the corresponding school-based curriculum deliberation mechanism to answer the question of whether the development was rational or not. The rationality of school-based curriculum is not evidenced by "quality monitoring" by external institutions or personnel, as in the national curriculum, but by the two-level deliberation of the regional/school curriculum committee. To a large extent, the quality of a school-based curriculum is directly dependent on the quality of the deliberation. Therefore, the establishment of a school-based curriculum deliberation mechanism is key to its quality assurance.

Since the school-based curriculum program involves the two different levels of teachers and schools, the "Program of School-based Curriculum Planning" is composed of the "Course syllabus" written by teachers as well as the overall school-based curriculum plan developed by the school. Accordingly, the school-based curriculum deliberation system also requires two levels: deliberation at the school level and deliberation at the local level.

7.3.3.1 School-Level School-Based Curriculum Deliberation System

The school-based curriculum deliberation system at the school level refers to the collective deliberation performed by the curriculum committee (deliberation group) organized by the school on the course syllabi submitted by teachers. In accordance with the "Program of School-based Planning" developed by the school, the teacher independently or cooperatively develops a school-based course. The course description and syllabus must be submitted within the prescribed time. The course description is mainly used when students select courses, while the course syllabus embodies the various elements of the course. The school curriculum committee should deliberate on the school-based curriculum syllabi developed by teachers within a specified period and provide prompt feedback.

The school curriculum committee, generally composed of representatives of the school administrators, teachers, and students, parents and community members, scholars and experts, and so on, deliberates on the course syllabus prepared by the teacher. The basic process of deliberation established by this committee is (1) form a deliberation committee; (2) define the basic principles and the framework for deliberation; (3) democratically deliberate and record the results of the deliberation; (4) give feedback to the parties on the results of the deliberation.

The basic deliberation principles of the committee are mainly concerned with the consistency of the curriculum with regard to the school's educational philosophy or the overall goal of the school-based curriculum, the consistency with the school-based curriculum master plan, the integrity of the curriculum elements and the consistency between the elements, and whether the description of the objectives, selection, and organization of content and the implementation and assessment recommendations are feasible. The committee determines whether the required conditions or resources are available, along with other such questions.

7.3.3.2 Local/Regional Level School-Based Curriculum Deliberation System

The school-based curriculum deliberation system at the local level refers to the collective deliberation performed by the local curriculum committee, organized by the education administrative department, on the "XX School Program of School-based Curriculum Planning" that was submitted by the school under its jurisdiction. On the basis of clarifying the philosophy of school education, assessing the needs of

students, and studying the available curriculum resources, the school forms the overall program for school-based curriculum planning. The content of the program must cover the necessity and possibility of school-based curriculum development, the overall school-based curriculum objectives, curriculum structure and categories, recommendations for its implementation and assessment, and safeguards. Schools must submit this program to the next higher-level education administrative department 3 months before the implementation of the curriculum. The education administration department should promptly establish a local curriculum committee to conduct the deliberations. Deliberation results must be provided within 1 month so that schools may revise or reorganize the implementation.

The membership of the local curriculum committee must include education professionals. If possible, student or parent representatives may also be invited to participate. The basic process of deliberation established by the local curriculum committee (deliberation group) is (1) form a deliberation committee; (2) define the basic principles and the framework for deliberation; (3) the committee democratically deliberates and records the results of the deliberation; (4) give feedback to the parties on the results of the deliberation.

The local curriculum committee deliberates on the "Program of School-based Curriculum Planning" submitted by schools under its jurisdiction. The basic principles of deliberation are mainly concerned with (1) Does the "Program of School-based Curriculum Planning" conform to the national curriculum plan and related policies regarding curriculum orientation, student academic burden, and teacher workload? Is it conducive to promoting quality education? Is it based on research on issues such as student needs? (2) Is the overall goal of the school-based curriculum scientific and reasonable? Is the description standardized? (3) Are the school-based curriculum structure and categories consistent with the curriculum objectives? Is the classification reasonable? (4) Is it conducive to changes in learning style or the diversification of learning methods? (5) Are the methods of course assessment diverse? Are they conducive to the development of students as well as teachers? (6) Has attention been paid to the full development and utilization of the curriculum resources at the school site? Are the necessary conditions present? (7) Has the issue of inter-school cooperation and resource sharing been considered? And so on.

The school-based curriculum deliberation system is a key to shape the quality of current school-based curriculum in China. At this system's core is whether the composition of the deliberation is representative, whether the deliberation process or decision-making is democratic, and whether the basic principles and the standard framework are professional and to what extent consensus has been reached. Those mentioned mechanisms and institutions underscore the future development of school-based curriculum to unleash the school vitality in China.

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