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

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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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Y. Cui et al. (eds.), *School-Based Curriculum in China*, Curriculum Reform and School Innovation in China, https://doi.org/10.1007/978-981-10-8630-4_2

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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