PALACKÝ UNIVERSITY OLOMOUC
Faculty of Education
Institute of Special Education Studies

# A Research on the Beginning Teachers' Class-based Environment Ecological Analysis Curriculum in Intellectual Disability Education in Mainland China

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**Xu Bo, ME.d**
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Supervisor
**Prof. PaedDr. Milan Valenta, Ph. D.**

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# Declaration of Originality

The dissertation presented by me is the research work and its result under the guidance of my supervisor. To the best of my knowledge, this paper does not contain researches that have been published or written by other individuals, except for those already cited in it. The individuals and collective who have made important contributions to the research have made clear statement in the text and expressed their gratitude. I am deeply grateful for their contributions.

Signature Date

# Acknowledgements

When I am working for almost ten years, there is still a chance to continue to study, it is a great blessing in my life! Now the journey is coming to the end, can't help but let me sigh, "Thus things flow away, day and night"! From a beautiful small village in China to Olomouc in the Czech Republic, along the way, this beautiful world has given me too much emotion:

My family supports my studies and life greatly, especially my wife, Xiao Li, has taken on too much difficulties and hardships in these four years. Without their weight, there would be no ease and paradise in my study.

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# Abstract

The environment ecological analysis curriculum is an important type in the intellectual disability education system of mainland China. Its theoretical basis includes ecology, life education, situational education, individualized education, problematic situational interpretation thinking mode and so on. The results of literature analysis and survey research indicate that the current development of such curriculum in mainland China has been extremely imperfect from the definition of basic concepts, to the construction of the theories, and then to the specific implementation. Therefore this research mainly adopts the curriculum action research method, through the cooperative theoretical construction and action practice of the special education curriculum researchers in the university and the grass-roots special education school teachers, to explore the series in the development process of the theories and practice of the ecologism curriculum in the intellectual disability education. Based on literature review and survey research, the stages and main contents of our curriculum action research are as follows:

First of all, we put the environment ecological analysis curriculum into the curriculum chain of the ecological strength of the common curriculum categories of intellectual disability education in mainland China, so as to clarify the difference and connection between such curriculum and other curricula. And from the perspective of curriculum development model, curriculum objectives, curriculum content, curriculum organization, curriculum implementation, curriculum evaluation, the basic theoretical framework of this kind of curriculum is expounded.

Secondly, with the basic theory of ecology as the guide, the macro-model of class subject-based environment ecological analysis curriculum operation is constructed to guide the subsequent practice.

Thirdly, the implementation of curriculum action research is divided into three stages: preliminary exploration in excitement and expectation, mainly involving propagandizing, mobilizing and initially setting up a research team; continuing to move forward in frustration and difficulty, mainly involving the change and adjustment of curriculum research team, further development of curriculum exploration; design and implementation in adherence, clarity, mainly involving the formation of curriculum specific model, the implementation of curriculum model.

The conclusion of the research is that: the ecologism curriculum of intellectual disability education in mainland China is still in a difficult initial development period; The beginning teachers in the disadvantaged intellectual disability education schools can also design and implement the environment ecological analysis curriculum well; There are many challenges and particularities in the course of designing and implementing the curriculum of environment ecological analysis for beginning teachers; The key to the smooth development of the curriculum design and implementation of environment ecological analysis of intellectual disability education is to adhere to the principles of close combination of theories and practice, progressive development.

The enlightenment of the research is that: seeking the entry point of combining theory with practice is one of the key links in the smooth development of any curriculum; The construction and development of curriculum team is the key guarantee for the smooth progress of curriculum research; The action research mode of cooperation between special educators in universities and grass-roots teachers in special education schools is an important path for the development of intellectual disability education curriculum.

**Key words:** Intellectual disability education Beginning teacher Class-based Environment ecological analysis curriculum Action research

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# Chapter 1 Introduction

## 1.1 Background and significance of the research

### 1.1.1 Research background

#### 1.1.1.1 The rise, development and enlightenments of ecologism thought

In the development process of human society, it has experienced four stages of development: fishing and hunting civilization, agricultural civilization, industrial civilization and ecological civilization. In the first two historical periods, human survival and development were greatly constrained and restricted by nature. The direct relationship between human and nature is the main contradiction facing the development of the society. After entering the stage of industrial civilization development, human ability to adapt and transform the environment has been significantly enhanced, and the nature has gradually become a slave to human. The development of industrialization and modernization, while improving social productivity and promoting the development of human society, also greatly destroy the entire earth ecosystem. It has caused a series of serious problems such as soil erosion, ozone layer destruction, species extinction, population growth, forest reduction, energy shortage, climate warming, severe pollution of air, water, etc., and human development is facing a serious ecological crisis and survival crisis. Based on deep reflections on its own development, environmental changes, and the relationship between human and the environment, mankind has gradually stepped into the development period of pursuing ecological civilization since the 1960s. A variety of environmental protection, ecological movements, and ecological thoughts have emerged, and beyond the scope of environmental science and natural ecology, they have gradually developed into ecological post-modernism, ecological socialism, ecological centralism, ecological feminism, and other ecological ideas and theoretical systems ( Wang & Jin, 2002).

Influenced by ecological thoughts and theories in the fields of nature, philosophy, and society, the education field has also emerged with ecological courses and teaching concepts. It has become one of the research hotspots in the curriculum field since the 1980s. For example, the idea of curriculum design by F. Kappa, the idea of Griffin's

"sacred connection", the idea of "reflective teaching" by Bowles and Flinders, the idea of Miller's "holistic curriculum", the idea of Kasson's "critical process curriculum", the idea of "eco-political curriculum" by Gough of Australia, and the idea of curriculum based on symbiotic philosophy by Omiki in Japan, the curriculum ideas developed by UNESCO after World War II for the promotion of internationally understood education, world learning, development education, etc., as well as feasible curriculum programmes, and the postmodernism curriculum theory of William. E. Dole, the American curriculum scholar, and the postmodernism curriculum theory of Patrick Slattery. The ecological curriculum concept emphasizes the integrity, openness, richness, and development of the curriculum (Wang & Jin, 2002), and its pursuit of values is to enhance understanding, respect and protection of nature, enhance the sustainability of social development, improve the ecologicalization of cultural development and promote the harmony of individual development (Wang & Jin, 2008). In the course of curriculum implementation, adhere to the ecological orientation of curriculum development, open course development goals, balanced course content selection and organization, procedural course implementation and non-linear course evaluation (Hu, 2006).

In the field of education in China, the researches and practice of ecologism curriculum have also been gradually carried out since the 1980s. The formal academic exploration of the eco-curriculum in the intellectual disability education community in mainland China originated at the beginning of this century. Judging from the published documents, on March 24-27, 2000, Yang Yuanxiang, a special education teacher in Taiwan, taught "A new era of ecologically-oriented special education" at Chongqing Teachers' College, thus opening up the prologue to the study of ecologism curriculum in intellectual disability education in mainland China (Xiangyang Child Development Center, 2003). Afterwards, under the continuous promotion of scholars such as Zhang Wenjing in Chongqing Normal University, Li Baozhen and Fang Wu in "Xiangyang Child Development Center in Jiangjin District, Chongqing", the concepts of "ecological concepts in special education", "environmental ecologism curriculum" and "eco-oriented curriculum" are gradually known by educators in the mainland China and they have carried out scattered researches from diagnosis and evaluation to curriculum design and implementation, from school education to family counseling. Of course, in terms of the breadth, depth, and adaptability of researches

and practice, ecologism curriculums in the intellectual disability education in mainland China is still in the early stages of development.

#### 1.1.1.2 The main periods of the development of the curriculums for intellectual disability education in Mainland China and their ecological status

"The decision of the central committee of the communist party of china on the reform of the educational system" promulgated by the central people's government of the People's Republic of China in 1985 proposed that "while implementing nine-year compulsory education, we must also strive to develop early childhood education and develop special education for blind, deaf, dumb, disabled and mentally handicapped children", which marks the first time “intellectual disability education” has been incorporated into the national special education system as an independent branch (Education commission of the people's republic of China, 1985). Curriculum and teaching are the basic elements and core components of education. Curriculum research is one of the key fields of educational research. The curriculum development of intellectual disability education in New China has experienced a difficult and tortuous process, and there are several key development nodes:

In 1987, the education commission of the people's republic of China promulgated the "Teaching Plan for Full-Day Mentally Handicapped Schools (Classes)" for the trial of mentally handicapped classes attached to ordinary primary schools and full-time mentally handicapped schools (People's Republic of China Education Commission, 1987). It was mainly applied to children with mild intellectual disabilities in grades 1-9. Schools with excellent conditions could enroll a small number of children with moderate intellectual disabilities. It stipulated that there were no more than 12 students in each class. Individual teaching or group teaching was implemented in the class. Students of different grades can be organized together to take classes based on the consideration of their differences and needs. It planed 7 subjects: common sense, Chinese language, mathematics, music, art, sports, and labor skills. During the course implementation, it was emphasized that the relationship between basic cultural knowledge and labor skills should be handled well. According to the characteristics of mentally retarded students, teaching materials with appropriate breadth and speed were choosed, and attached importance to the correction, compensation and training of the students. The plan reflected the reality of the conditions and needs of mentally retarded education in the field of political, economic, cultural and educational development in particular. However, from the

perspective of the specific content and actual operation mode of the courses, they also had obvious characteristics of closedness, disciplinism, and lag. The application of ecological concepts and methods were still in the unconscious embryonic stage.

In 1994, the national education commission promulgated the "Education and Training Program for Students with Moderate Intellectual Disabilities" for reference by schools (classes) of mentally retarded education (education commission of the People's Republic of China, 1994). It seted out the aims and tasks, objects and educational systems, principles and contents of education and training for moderately retarded children. In the principle part of training, besides emphasized the universal educational principles such as ideological, scientific and acceptable, special attention was paid to the application, practical activities, compensatory and flexibility, unity of commonality and individuality. In the content part of the training, it included three aspects: life adaptation, activity training, functional language and calculation, and advocated comprehensive teaching. In order to improve the effect of education and training, the outline specifically pointed out that: in terms of placement, students with moderate intellectual disabilities may consider studying in ordinary classes; promoted comprehensive teaching, emphasized the gameplay, activity, fun and intuitiveness of teaching activities; schools can add content with local characteristics according to specific conditions; schools should strive for cooperation and support from parents, social organizations, or surrounding people. Overall, the curriculum concept, purpose, content, organization and implementation principles embodied in this outline emphasized strong adaptability, daily life, practicality and other characteristics. In fact, it was strongly ecological and reflected the further development of ecologism thinking in the field of intellectual disability education. But because of the outline was only a policy, a guidance document, it lacked of supporting detailed curriculum design and related teaching materials, personnel, funds and so on, so its ecological concept was actually difficult to implement in the real scene of specific schools, classes, the relevant independent researches were even more difficult to talk about.

In 2007, the ministry of education of the People's Republic of China promulgated the "Experimental Program for Compulsory Education Curriculum Development in intellectual disability Schools" (ministry of education of the People's Republic of China, 2007), in the training objectives, the program mentioned that students with intellectual disabilities "... have basic cultural and scientific knowledge and skills to adapt to life, society and self-service; develop healthy behavior habits

and lifestyles and become citizens who adapt to social development" . And seted the following principles of the curriculum: the combination of generality and selectivity, the combination of sub-disciplinary courses and comprehensive courses, the combination of life adaptation and potential development, the combination of education and rehabilitation, the combination of inheritance and innovation development, regulation combined with autonomy. In the specific curriculums, in addition to general courses such as "Life Language", "Life Math", "Life Adaptation", and "Labor Skills", elective courses such as "Art Leisure" and "School-based Courses" were also designed. From the perspective of the curriculum concept, curriculum objectives, curriculum content setting, curriculum implementation and evaluation suggestions, the program reflected the strong curriculum concepts of life, adaptability, functionality, and ecology. In the field of practice, different regions or schools mostly referred to this programme to explore suitable courses for their own curriculum development.

Nine years later after the promulgation of the experimental program for curriculum setting, the ministry of education finally promulgated the "Curriculum Standards for Compulsory Education in intellectual disability Schools". This was the first set of systematic learning standards specifically formulated for students with intellectual disabilities since the founding of new China (Ministry of Education of the People's Republic of China, 2016). Curriculum standards took the curriculum setting experiment plan as a macro clue, integrated the historical experience of the previous subject curriculum, life curriculum, and individualized education curriculum development, and stated each subject separately (except for "the second language" and "school-based curriculum" in optional courses ) of the courses' overall objectives, learning area objectives, segment objectives and content, teaching recommendations, evaluation recommendations, textbooks compilation recommendations, and textbooks resource development and utilization recommendations. Although the curriculum standards of various disciplines emphasized the extremely ecological concepts of life, adaptation, function, environment, etc., the core part of "semester goals and content" was still a discipline-oriented behavioral goal system, for example, " can imitate the use of common language in life "," can use pencils to describe or copy the common Chinese characters in life "…Therefore, it is difficult to implement the concept of ecology. If this set of curriculum standards were forced to be implemented and evaluated in a unified manner, it may be a text with strong guiding significance for the

newly established intellectual disability education schools, students with milder barriers, and teachers in the early stages of professional development. But for regions, schools, or teachers who have constructed good educational concepts and developed a systematic and unique curriculum system, their limitations may be obvious.

Looking at the historical development process of the above-mentioned about the curriculum of intellectual disability education in mainland China, although great progresses have been made, the development in the field of curriculum research is extremely slow, and it is still deeply shackled by the subject-based thinking. So far, almost all the mainstream discourses have been adopted from developed countries or regions with special education in Europe and America. There is a lack of localized curriculum theory researches, and less discussions about ecological curriculum theories. In the practical filed, there are great differences in development between different regions: teaching practices in developed regions in the east of China have gradually moved closer to developed countries or regions in the world, while the vast western regions are far behind. However, in general, the relevant practice of the ecological curriculum in intellectual disability education is inadequate, and only a few schools have made special attempts.

#### 1.1.1.3 Relevant background of mine

My hometown is a small mountain village surrounded by mountains and rivers, and the scenery is always fresh throughout the year. Fish and crabs in the river, grass on the beach, wildflowers on the hillside, people working in the fields ... These childhood experiences have left a deep mark in the depth of my soul. They are my initial understanding of "environment", "ecology", and "nature". They are the real education of the original ecology for me. I hope that the education I always pay attention to will be as natural, full of fun and vitality as the scenery of my hometown.

In the process of growing up and receiving education, I have enrolled in seven schools one after another, and the most memorable one is my elementary school "Qingfeng Primary School". The school is surrounded by farmland and cottages. The principal, Mr. Mingbin, is versatile, intelligent, and enthusiastic about the education in our hometown. Under his leadership, teachers designed schools together according to the characteristics of our rural environment, carried out teaching with local resources; teachers and students leveled the playground, trimmed the flower beds, dredged the stream outside the school gate, built a library with straw roof, and went outing and picnicking together ... After entering the university to study education, I realized that

this is actually true local education and ecological education! This experience is also very inspiring for me to pay attention to ecologism courses in the field of education.

Since studying in the special education major, I have contacted many children with special needs and their parents and or families. In this process, I found that children with good development often have a characteristic of their education: their caregivers or teachers often value the use of various resources in the daily life to educate them, focus on developing their ability to interact with the environment, value the impact of the environment on them. This also greatly aroused my interests and thinking about life-oriented and ecological courses.

## 1.1.2 Significance of the research

### 1.1.2.1 Theoretical significance

This research responds to the trend of ecologism in China and abroad, especially the new trend of ecological curriculum design and implementation for students with intellectual disabilities. On the basis of comprehensive, systematic collection, collation, and reflection on existing research results and status survey, then working with action research partners to reach out to a wide range of students, courses, families and communities, etc., from the perspective of higher special education majors and scientific research personnel in higher education institutions, that one of the important providers of relevant supportive, consultative and cooperative services. From a practical perspective, we discuss the rules of ecological curriculum design and implementation for students with intellectual disabilities and the dynamic construction method of supporting system. It will expand and deepen the ecological curriculum and teaching of students with intellectual disabilities. It is also beneficial to grasp the theoretical model and implementation strategy of ecological curriculum in more detail and in depth from the theoretical and practical level. By systematically discussing the whole system of this kind of curriculum from the basic concept to the practice operation, it enriches the theoretical researches on the ecological curriculum, and constructs the theory system of the local ecological curriculum suitable for the practice of the education for intellectual disability in mainland China.

### 1.1.2.2 Practical significance

The basic theoretical models and implementation strategies formed in this research provide operational ideas and implementation processes that can be used for reference in the relevant practical exploration. It can be widely used in the

practice of setting up and implementing ecological curriculum for students with intellectual disabilities in other parts of mainland China. It will be a positive guiding significance for improving the cooperative relationship between families of students with intellectual disabilities and special education schools, and improving their quality of life at home and school. At the same time, this research is also a useful attempt for college special education workers and grass-roots special education teachers to cooperate and explore each other based on their respective backgrounds and advantages. This is conducive to expanding each other's horizons and improving the quality of life and work in the process of promoting each other's professional development. This research is a beginning, not an end, in the follow-up study, we will also introduce the normal students who are in special education major as an important participant and support subject, in the process of contact with teachers in special education schools, students with intellectual disabilities and their families, their professional emotions and professional practice abilities will also be improved in a subtle way. Therefore, the follow-up research will also be an attempt to explore the formative education of teachers in higher special education. This kind of higher special education training of professional competency that works closely with special education schools and families of children with special needs, and the multi-dimensional intervention has strong adaptability, public welfare, economy and flexibility. It is expected to become an important model that can be adopted for a high-quality special education teacher training.

## 1.2 The definition of core concepts

### 1.2.1 Environment

"Environment" is "surrounding place" or "surrounding situation and conditions "(Institute of Language, Chinese Academy of Social Sciences, 2012). "Environment" is also "surrounding things related to a central thing... Complicated system composed of many elements, the various elements interact with the organism, and the various elements also interact with each other. Part of the environment leaves the whole and changes it, generally affecting the rest of the environment... the relationship between human beings and the environment is extremely close"(Kim, 2007). According to different criteria, it can be divided into several categories, such as: from the scope, it can be divided into macro situation, meso situation, micro situation; from the

perspective of abstract degree, it can be divided into concrete situation and abstract situation; according to the characteristics of time and space, it can be divided into time situation and space situation; according to the degree of significance, it can be divided into explicit situation and recessive situation; according to the similarity, it can be divided into the same situation, similar situation, different situation; from the point of view of "material-spirit", it can be divided into material environment and spiritual environment... The "environment" in this research refers to the sum of all the circumstances and conditions of the course operation, including the natural environment and the social environment, which is especially focused on the analysis and discussion of the social environment.

### 1.2.2 Ecology

On 1866, German biologists E. H. Haeckel first defined ecology as the science of the relationship between biological organisms and their surroundings. British ecologists A. G. Tansley introduced the concept of systems into ecology in 1935. He first proposed the concept of "ecosystem", which includes both organic complex and physical complex, and has its own unique structure and function (Zhang et al. 2018). After that, the concept of “ecology” went beyond the category of biology and gradually expanded to the fields of sociology, philosophy, economy and education. It is generally understood that ecology is "the state of life and development of organisms in a certain natural environment, but also the physiological characteristics and living habits of organisms "(Institute of languages, Chinese Academy of Social Sciences, 2012). Any ecosystem contains certain characteristics, structure, type and function. The "ecosystem" in this research includes both natural ecology and social ecology, which is mainly divided into two parts: “class ecosystem "composed of students, teachers, experimental subjects, other courses, class material environment and class spiritual environment, and "other ecosystem" composed of family, school, community, natural environment, social material environment and social and spiritual environment.

### 1.2.3 Curriculum

The meaning of the curriculum is varied, and there are three main manifestations in general: to consider the curriculum as all subjects, all activities or one subject or one type of activity determined by the student under the guidance of the teacher in order to achieve certain educational and teaching objectives; define the curriculum as the goal to be achieved in the teaching process, the expected results of

the teaching or the advance plan of the teaching; course is the experience or experience that students gain under the guidance of teachers, and the experience that students gain spontaneously (Zhang, 2000). Because of the complexity and diversity of curriculum meaning, the curriculum connotation of this study includes all the above aspects, and the specific meaning is not exactly the same in different discourse contexts.

### 1.2.4 Ecology curriculum

The concept of ecological curriculum refers to the term "ecology", which is based on ecological world outlook, values, epistemology and methodology to view, think, explain and solve curriculum problems, and to carry out the curriculum theory and practice in an ecological way. It adheres to the system view, the whole view, the connection view, the harmony view, and the balance view, it is a kind of curriculum thought which fully manifests and unceasingly uses the ecological wisdom, it is not only a curriculum idea, but also a curriculum implementation strategy (Liu, 2007). Ecologism curriculum is a number of stories about "curriculum" and "environment", “ecosystem”. It emphasizes the need to break through a closed and narrow vision and to place all factors and relationships in education and teaching throughout a real social and natural ecosystem. In the process, all curriculums are flexible, open, and dynamic. They are generating, developing, ablating, transformating, and ultimately guide the significance of human life, sustainable development of the environment, harmony and integration of human and environment.

### 1.2.5 Environment ecological analysis curriculum

The Environment Ecology Analysis Curriculum is “Putting a children in a normal daily life (with emphasis on his family, school, community, occupation), according to their ability level and adapt to the present situation, taking the future adaptation to the normal living environment as the guide, fully understanding the living environment, using the living environment, and providing individualized educational courses suitable for their educational needs to promote development (Zhang, 2000). It is a concrete and incomplete expression form of ecologism curriculum under the condition of being faithful to the core idea of ecologism curriculum, it focuses on the analysis of several curriculum factors and their interaction relations in the educational and teaching environment system, and tries its

best to integrate the rich environmental factors and their relationships into the real teaching process.

### 1.2.6 Beginning teacher

So far, many scholars have studied the stage of teacher's professional development, such as: four stages: pre-teaching concern, early survival concern, teaching situation concern, and student concern(Fuller & Bown, 1975)； First teaching term, construction security period, maturity period (Unruh & Turner, 1970); formation, growth, maturity, professional all-round period (Gregorc, 1973); professional start-up and initial obligations, stability and lifetime obligations, new challenges and new concerns (Huberman, 1989)... In different theories of teacher's career cycle, the division of teacher's development stage and time limit is not exactly the same. Referring to these research results, combined with the current situation of special education in mainland China, the “beginning teacher” in this study refers to the teachers who are in the period of professional adaptation, formation and growth within 5 years of entry. Teachers at this stage are socialized in the school system, often trying to gain the recognition of students, colleagues and teaching instructors, and trying to achieve a level of comfort and safety in dealing with daily problems and affairs(Ralph & Judith, 2005)。

## 1.3 Research design

Action research, as a technical term and a research method in the field of social science, started with the related research and practice in the 1930s and 1940s in John. Kohler and Luin In 1946, Luin called the study combining the wisdom and ability of scientific researchers and practitioners "action research", and thought that" there is no research without action and no action without research"(Song, 2003). Typical features of action research are: participating—teachers participate in the research and become the subjects of the research; improving—means improving teaching practice, solving problems in teaching practice, changing teachers' understanding of practice and changing the social situation in which practice is located; systematically collecting and analyzing data according to certain research rules; openly—cooperating with other teachers or researchers to make their own researches open inquiry (Liu, 2001).

Special education is an applied and practical subject, and the ecologism curriculum of intellectual disability education, as a new curriculum concept, curriculum type or curriculum model, is in the initial stage of development from the construction of theory to the practical operation mode. Only when curriculum theory researchers and curriculum practitioners cooperate fully, go deep into specific educational and teaching situations, guide practice with theories, test and perfect theories with practice, and constantly reflect, practice and summarize can they better promote the further development of ecological curriculum theories and practice. This idea is highly consistent with the spiritual essence pursued in the spiral cycle of "plan-action-observation-reflection" in action research. Therefore through the cooperative theory conception and the action practice between curriculum researcher from universities and teacher from the grass-roots special education schools, this research mainly adopts the method of action research to discuss the ecological curriculum theory and the practice development process series question in intellectual disability education. The concrete research design is as follows:

### 1.3.1 Questions

What is the theoretical basis of the action research for environment ecological analysis curriculum? This problem is an important basis and support of the research. After clarifying the theoretical basis, the subsequent theoretical construction and concrete practice can better clarify the direction and guiding principles.

What is the research status of environment ecological analysis curriculum? This is one of the basic starting points of subsequent researches and practice, and the solution of this problem is conducive to better clarify the differences, links, innovations and deficiencies between our own researches and existing research.

How to construct the theory and practice model of environment ecological analysis curriculum suitable for the education of intellectual disability education in mainland China? This is the core goal and final foothold of this research.

How to design and implement the environment ecological analysis curriculum for beginning teachers? Is it special? If so, what is it? These problems are the basic focus of this research, and the analysis and thinking about them is an important basis for summaring, inducting and refining the theories and practice model of general ecological curriculum in intellectual disability education.

### 1.3.2 Purposes

Through the cooperative action research of typical cases, try to provide useful references for the designs and implementation of environment ecological analysis curriculum for intellectual disability education in mainland China.

### 1.3.3 Objects of cooperation

This research is a qualitative study. Because of its characteristics, qualitative research uses "purposive sampling" in "non-probabilistic sampling", that is, sampling samples that can provide the maximum amount of information for the research problem (Patton, 1990). Therefore, this research also adopts the principle of purposeful sampling, and considered the specific sampling strategies such as intensity sampling, maximum difference sampling, homogeneity sampling, theoretical sampling and so on (Chen, 2001). We have selected seven beginning teachers from the general development level schools in mainland China as cooperation cases. In order to ensure the quality and ethics of the research, all participants, subjected to the basic rules of the research team, may voluntarily choose to persist or withdraw, the details are as follows:

The first phase of action research:

Miss. Wen: she worked in a municipal special education school for 3 years. At that time, she served in grade four in the department of intellectual disability education and was the head teacher of a class.

Miss. Gan: the teaching age was 1 year, worked in a county special education school. At that time, she served in grade three in the department of intellectual disability education, an ordinary teacher.

Miss. Min: the teaching age was 2 years old, worked in a municipal special education school, and served as a head teacher in an intellectual disability class.

Miss. Ting: the teaching age was 2 years old, worked in a county special education school, and served as a head teacher in an intellectual disability class.

Miss. Hui: the teaching age was 1 year, worked in a municipal special education school, and served as a head teacher in an intellectual disability class and responsible for the management of the school's education rehabilitation platform.

Miss. Ran: the teaching age was 1year, worked in a municipal special education school, and served as a head teacher in an intellectual disability class.

Miss. Ran: the teaching age was 2 years, worked in a county-level special education school, and as the school's dean of education.

The second stage of action research:

Min, Ting, Wei, Hui four teachers voluntarily choose to quit, Wen, Gan, Ran choose to stay to continue the course experiment.

The third stage of action research:

Ran voluntarily chose to quit, Wen and Gan chose to stay to continue the course experiment. Later there are Ban, Ming, Jie and other teachers to join in (our course experiment is still ongoing).

### 1.3.4 Contents of the research

According to the established research objectives, research ideas, conditions and limitations of specific scenarios, and following the basic norms of curriculum theory construction and practice, this study designed the following basic research content:

The theoretical basis of environment ecological analysis curriculum of intellectual disability education;

The research status of this kind of curriculum;

The construction of theoretical mode of this kind of curriculum;

The process and strategies of design and implementation of this kind of curriculum.

### 1.3.5 Methods and tools

According to the different nature of the problems to be analyzed in the process, this research mainly adopts the following specific research methods:

The method of historical research: systematically combing the research results in related fields, such as "intellectual disability education curriculum", "intellectual disability education teacher", "ecological curriculum of intellectual disability education" and so on, analyzing the historical context of its development then to provide an important basis for the theoretical discussions and action strategies of this research.

The method of investigation: according to the progress of the study, a series of questionnaires on environmental assessments, participation attitudes, progresses of action, research effectiveness and so on will be adopted, adapted or compiled, and then related research results will be extracted and generated from the process.

The method of comparison: in the course of the study, the differences and relations between own theories and those of others; different curriculum models, different teachers' participation process and results, and so on will be compared.

The method of theoretical research: based on the understanding of the nature and relationship of the problems related to the environmental and ecological analysis curriculum in the course of the research, they are analyzed, synthesized, abstracted and summarized theoretically, in order to find out the inherent law about the design and implementation of this kind of curriculum.

### 1.3.6 Data collections and analyses

In the process of the study, teaching videos, teaching plans, action research reflection and recording tables, and theoretical reading records, etc. of the teachers will be collected comprehensively, and then they will be analyzed, sorted out and refined through the methods of grounded theory, experience summary and theoretical speculation.

### 1.3.7 The basic ideas

This research is divided into three specific phases-Curriculum action research phase 1: preliminary exploration in excitement and expectation. Curriculum action research phase 2: moving on in frustration and hardship. Curriculum action research phase 3: design and implementation in persistence and clarity. The overall idea of the research is shown in the following Figure:

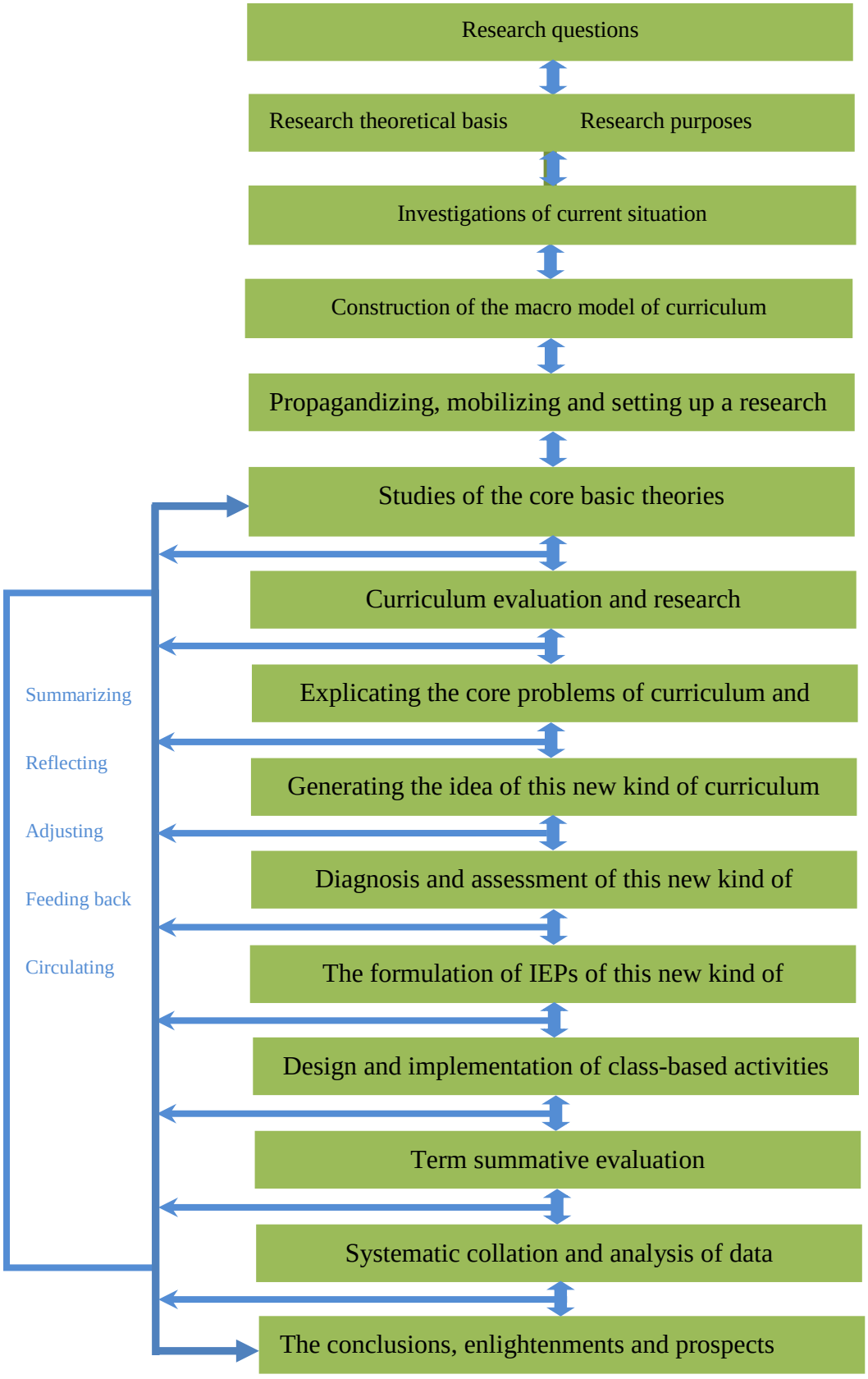



Figure1-1 Basic ideas of the research

# Chapter 2 Theoretical basis of the research

The theoretical basis of research refers to the foundation and starting point of research in guiding theory. For this research, theoretical basis is usually based on a certain standard and perspective, which is at the top or parallel level in a certain knowledge system. Its connotation and extension imply the research field, scope and basic perspective. The theoretical basis closely related to this study includes ecology related theory, life education related theory, individualized education theory, situational education theory, and situated interpretive thinking theory of problems.

## 2.1 Ecology related theories

German biologist Ernst Haeckel first put forward the concept of “ecology” in 1866, and defined it as: ecology is the science that studies the relationship between living organisms and their surrounding environment (including non-living environment and living environment). At the beginning, it is a macro biology that focuses on individuals, populations, communities and ecosystems (Lin & Fu, 2004). Since the 1960 s, with the deterioration of the crisis of human survival and development in many aspects, the basic idea and basic principle of ecology gradually permeated and expanded to the fields such as philosophy, anthropology, sociology, pedagogy. With society-adaptation ecology of education curriculum, the branch of ecology discipline is the important basis of ideology and principle of its curriculum design and implementation in the education for individuals with intellectual disabilities.

For example, biological ecology, it mainly focuses on applied fields such as natural ecosystem, biology and environment, population ecology, community ecology, landscape ecology, global ecology, biodiversity, urbanization, regional development, and ecotourism and so on. The basic principles it advocates include systematicness, stability, diversity, tolerability, dynamics, feedback, elasticity, hysteresis, convertibility and scale (Li, 2014). The ecological curriculum of education for individuals with intellectual disabilities can also be regarded as an ecological system, and the above principles are of great enlightening significance for the understanding, planning and development of the ecological curriculum system.

Human ecology is the science of the relationship between mankind and environment. In the view of human ecology, human social system includes knowledge, technology, population, social organization, capital and some other elements, while environmental ecosystem includes animal, plant, microorganism, air, water, soil, artificial structure and other factors. Human ecology attaches importance to the demand intensity of human activities for environmental ecosystem and keeps sustainable development. The positive and negative feedback principle is used to adjust the population so as to adapt to the carrying capacity of the environment. All ecosystems are considered as complex adaptive systems, each with its own hierarchical structure and dominant attributes. Each ecosystem can self-organize through the construction process and realize the complex system cycle through the change of the stable domain. Mutual adaptation and co-evolution are the dominant attributes of the ecosystem, which can be designed in a natural or artificial way to realize the succession of the ecosystem. Benign co-evolution and mutual adaptation can achieve the sustainable development of the ecosystem (Marten, 2001). If the course is viewed as the focus of attention, and all other environmental factors are considered as a whole, the above principles can also variably explain the interaction mechanism between the two systems.

In 1976, Lawrence Cremin first put forward the concept of ecology of education, it is the result of mutual infiltration of education and ecology. Based on the principle of ecology, especially in the ecological system, ecological balance and co-evolution principle and mechanism, it is the research of various education phenomenon and its causes, and grasp of the rules of the development of the education, to reveal the development trend and direction of education. Its research content includes ecological environment, ecological structure and ecological function of education, and the basic principle, basic rules, succession and evolution, testing and evaluation of ecology of education (Wu & Zhu, 1990), culture, population, resources and the ecology of education, schools and its ecological distribution, ecological environment of class, sustainable development and education (Fan, 2000). The curriculum, especially the curriculum of special education is an inferior concept of education, therefore many rules and principles of ecology of education can be directly applied to the curriculum of education for individuals with intellectual disabilities.

As a short summary, the theoretical construction and practical path of the curriculum based on environmental and ecological analysis in this study are directly influenced by these thoughts and theories of ecologism.

## 2.2 Life education related theories

"Life" means that people carry out various activities for survival and development (Institute of Linguistics, Chinese Academy of Social Sciences, 2012). The design and implementation of school curriculum cannot be separated from the attention and use of life materials and life resources. In the historical development of world education, many educators emphasized the importance of the relationship between life and education, and proposed life education related theories.

Johann Heinrich Pestalozzi, a famous Swiss democratic educator in the 19$^{th}$ century, in his Swan Song, he wrote “Life has the function of education, it is the guiding principle of in all of my experiment of elementary education”, and argued that children were educated in life, which including moral education, intellectual education, technology, arts and other skills training, (Zhang, 1964). American educational thinker John Dewey believed that education is life, growth and continuous transformation of experience, so he paid special attention to the relationship among school education, social life and children's personal life. He believed that education is a process of life and school is a form of social life. The ideal school life should be with the children's own life and corresponds to the social life outside of school. The real center of linking school subjects is children’s social activities. Those activities on behalf of the social activity type and basic form of activities should have an important role in the curriculum system, eventually create a focus on the present and a better future life that is higher than the real life (Wu, 1999).

The theory of life education is also the main line and important cornerstone of education thought of Tao Xingzhi, a famous educationist in China. His three principles of life education mainly include three aspects: life is education, society is school and teaching does unite. It advocates the connection between education and real life, opposes mechanically, and emphasizes the cultivation of children's creativity and independent working ability. Then the characteristics of life education were summed up as several aspects related to life, action, mass, progress, world and history,

which are the education of striving for mass liberation and national liberation (Sun, 2009).

Inspired by the thought of life education and combining the characteristics of education for individuals with intellectual disabilities and ecological curriculum, the curriculum based on environmental and ecological analysis discussed in this study also emphasizes the relationship between curriculum and the real life of students with intellectual disabilities, and emphasizes that the curriculum should try its best to absorb and integrate the real materials from life, and rich life should serve the curriculum.

## 2.3 Individualized education theory

The idea of individualized education has a long history, and there are some famous individualized education programs, such as Dalton plan, Winnetka plan and Keller plan (Zhang, 2000). Individualized education is a personalized teaching form to adapt to the students' individual difference and develops the individuality. The essence of which is based on the characteristics of students' physical and mental development, conducive to the development of students and teaching methods for teaching adapt to the characteristics of students. Its core is to let every student get all-round development of personality, do not make any of the students left behind. In the field of special education, such operating procedures as case reception, educational diagnosis and evaluation, formulation of individualized education plans, design of teaching activities, implementation of teaching, and evaluation and revision of teaching have long been established (Zhang, 2005).

The curriculum based on environmental and ecological analysis that this study focuses on also emphasizes the suitability of the curriculum for individual students, individual classes and individual environments, and its specific teaching process is consistent with the steps pursued by individualized education.

## 2.4 Situational education theory

Famous Chinese educator Li Jilin based on personal thirty years of education teaching practice, and fully integrate the traditional Chinese theory of "mood and meaning", Rousseau's naturalistic course view, Dewey's thought of activity curriculum, Husserl's theory of experience curriculum and Lawton's situational

curriculum center to put forward situational education theory. The curriculum paradigm was built with unique advantages, which emphasizes that education should adapt to the nature of children, highlight the four elements of "truth, beauty, feeling, thinking" with three dimensions of "children, knowledge and society" as the core. Situational education also finds theoretical support from the latest findings in brain science, that is, children's brains are sensitive and need a rich environment. Children's brains are highly malleable and need to constantly increase the frequency of neuronal connections. The child's brain preferentially receives emotional signals, and the learning activities accompanied by positive emotions can be highly effective. Situational education is the combination of children's cognitive activities and emotional activities to find an effective way to improve the overall quality of children (Li, 2008).

The curriculum based on environmental and ecological analysis that this research focuses on is actually a situational curriculum, which also emphasizes the interpretation of situational factors and their relationships. The curriculum comes from the situation, and is implemented and evaluated in the situation.

## 2.5 Situational interpretive thinking theory

From the macro perspective of cosmology, earth evolution history and so on, the various forms of material and spiritual existence can be traced back to the environment (situation), especially the material environment (situation). Any problem will always arise in a particular situation, rather than exist independently without any evidence. The problem itself contains abundant situational factors and is also restricted by external situational factors. The problem is inextricably linked to the corresponding situational factors. Therefore, in each stage of thinking operation, we should closely link the "situation", follow the conditions, limitations, breadth, depth and rules of the relevant situation, and seek inspiration, motivation and resources from the corresponding "situation". The "situation" can be elevated from the basic carrier of interpreting thinking to the basic carrier of interpreting everything in the world: the emergence, existence, development and extinction of anything are closely related to the specific situation, born there, grow there and die there!

According to the thoughts above, the so-called "problem solving" process, often can be converted to: analyzing the inferior factors of situation at all levels of the

problem contains and their interaction relations, sorting out directly or indirectly related external situation factors and their interaction relations, and clarifying the interaction relationship between the internal and external situation factors of the problem. That is to say, the complex situational factors inside and outside the problem and their interaction relations imply the solution to the problem-the solution strategy of the problem lies in the situation of the problem (Xu, 2018).

Action research is the basic method of this study. Any successful and effective action contains such elements as motivation, method, diligence and environmental resources. Method, especially thinking method, is one of its core elements, because it directly involves the proposal, analysis and solution of related problems. Therefore, this study has applied the thinking method of situational interpretation to the whole process of theoretical construction and curriculum implementation.

# Chapter 3 Literature Review

The trend of thought of modern ecologism, which gradually emerged in the 1960s, has gradually influenced human thought, culture, society, education and other fields. On the basis of summarizing the content and characteristics of the ecologism thought and practice in the western special educational field, this section will make a literature review on the curriculum of education for individuals with intellectual disabilities and teachers in mainland China, especially on the research of ecological curriculum.

## 3.1 General situation of ecological thought and practice in the western special education field

Since the mid-eighties of last century, the curriculum research guided by ecological view has been one of the hot topics in the field of western special education curriculum research. Its content was involved with all levels and kinds of researches from a single education element to the whole education system.

### 3.1.1 Research on curriculum of ecologism in special education

Representative studies in this area include: ecological curriculum intervention framework for children with intellectual disabilities and their families in rural areas-education and support services for rural families with children with intellectual disabilities through the family, infant and toddler (FIT) project. The project, with particular emphasis on the role of the nuclear and extended family, aims to include the development of demonstration service programmes, the development of replicable on-the-job training programmes for local professionals and the expansion of educational services for children with intellectual disabilities in rural areas. Specific activities include group parent-child training, personalized parent-child training, family planning, parent-family training and discussion groups. The researchers also used the media to make the public more aware of the needs and resources of children with intellectual disabilities and to provide technical assistance to local institutions (Gabel, 1981). Research on ecological curriculum needs of students with intellectual disabilities: in many cases students with mild intellectual disabilities are receiving

education that is not relevant to their needs, and an ecosystem approach is needed to examine their individual needs from the perspective of the possible operating environment and to design ecological courses that better to meet their real needs (Cronis et al., 1986). Ecological curriculum framework focusing on quality of life outcomes and integration research based on developmental, directive and standards-based academic goals: in order to fully meet the needs of students with moderate to severe disabilities, ecological approaches focusing on quality of life outcomes must be coordinated with the development and implementation of standards-based academic curricula. For this purpose, the individualized education planning team should work within the framework of the ecological curriculum to develop standards-based goals that reflect meaningful knowledge and skills that are appropriate to the individual needs of students and apply to their daily lives. The quality of life goals go beyond family, friendship, community involvement, and strive to include academic goals that enrich life and promote lifelong learning, which can be linked to a broader range of subject areas in the core curriculum (Hunt et al., 2012). Use the ecological curriculum framework to support people with severe intellectual disabilities to learn general courses: the basic thinking point of "personal relevance" is used as a reference for curriculum adjustment within the ecological framework, so that individuals with intellectual disabilities can not only obtain general courses suitable for grade level, but also obtain personalized support. This change from "functional" to "personal relevance" promotes academic and social integration by providing a differentiated but non-quality discrimination curriculum for students with severe intellectual disabilities (Trela & Katherine; Jimenez & Bree, 2013).

Overall, it is tend to put the ecological curriculum as a curriculum concept or model rather than a specific type of curriculum in the western special education field. In another words, special education curriculum is deem to be an ecological system of teacher, students, parents, specific courses, environment and a variety of resources. And from the perspective of ecology to analysis the content, structure and operating rules of the system, which is different from the Chinese understanding of the problem. In addition, the research on the performance, problems and strategies of the teachers using this kind of curriculum model is relatively insufficient.

### 3.1.2 Research on the application of ecologism in other fields of special education

Compared with the study of ecological curriculum, there are more studies of ecologism in other fields of special education. These studies involve with more extensive contents, more diversified perspectives of analysis and more diverse methods, which reflects the profound influence of the world view, values and methodology of ecologism on special education.

Interventions for infants are developed through the provision of intersectoral training in special education and maternal and child health. The basic idea of the study is that the development of infants is a process of interaction between individuals and the environment. Infants are part of the family system, which is nested in a larger system (Bailey & Donald et al., 1986). The introduction of an ecological framework for assessment and rehabilitation programme for persons with learning disabilities to facilitate the integration of information and perspectives. Operating this framework through four dimensions: personal attributes; environmental attributes; nature, quality, and order of interaction; and perceptions of the individuals involved. Structural modalities for comprehensive rehabilitation planning and information are provided (Szymanski et al., 1989). They advocate ecological and standardized methods of art teaching for students with disabilities. Against the medical model, emphasizing that art education is not just about behavioral compensation and diagnosed disabilities (Blandy & Douglas, 1989). Using the theory of ecological culture to study the family accommodation of stunted children, the ecological effect of children's development is regulated by the daily living environment, and emphasizes the "sustainability" of daily activities as a predictor of children and family outcome importance (Gallimore et al., 1989).

Using ecological methods, study the continuous repetitive movements of adults with developmental disabilities in the work plan of the gardening day. Studies have shown that dysfunction patterns appear when staff is actively teaching than when trainees are isolated or resting (Wetzel et al., 1991). Use interviews to assess the ecological and cultural resources, values, goals and proactive adaptive efforts of stunted children's families, in order to analyze the significant factors of relevant ecological and cultural measures and their relationship with children's development status (Nihira et al., 1993). Adopt the seven-step model to develop, teach, and evaluate social safety skills courses for people with intellectual disabilities. The model is based on proven best practices, including best practices related to the ecological inventory, (approximately) error-free learning and teaching procedures, and procedures that promote the generalization and maintenance of behavior change (Clees & David, 1994). Through

the method of case study, the interaction between ecological factors such as parental characteristics, degree of disability and nursing environment of disabled teenagers is discussed in depth. Studies have shown that the level of stimulation and structure in the family environment is related to the parents' intelligence, marital quality and the severity of sensory disturbances. Adolescents with more severe sensory impairments and mental retardation receive less stimulation and structure. Social support can be used as a buffer to eliminate poverty, and appropriate family funds can be used as a buffer to eliminate lack of social support. Adolescents with disabilities from families with low social support and low economic resources receive less stimulation and support than expected. The only significant effect observed in the nurturing / support of the care environment is ethnicity (Bradley et al., 1994).

Based on the idea of ecology, develop a vocational social skills program for adolescents with disabilities based on ecological assessment (Elksnin et al., 2001). The comparative research method and case study method were used to analyze the developmental and influencing factors of the development of Williams' syndrome youth's music interest and achievements through ecological models, constructivism and behaviorism. These factors may affect the development and participation of participant's musical potential (Milne & Harry, 2004). Drawing on the relevant ideas of the ecological risk assessment framework, through analysis, synthesis, prototype simulation and other steps to build a special education ecological risk application model, the model includes three stages of problem formulation, measurement and risk characteristics assessment (Trepanier & Nathalie, 2005). Investigate the degree to which students with intellectual and developmental disabilities receive general education courses, and the degree to which this opportunity is related to and predicted by classroom environment and ecological variables (Soukup & Jane, 2007). Using structural equation modeling, examine a cross-regional longitudinal research project aimed at promoting self-determination, and explore the impact of various individual and ecological factors on self-determination of students with learning disabilities, mild and moderate intellectual disabilities, and other health disorders (Shogren et al., 2007).

From the perspective of social ecology, the content, processes, and methods of integrating and expanding alternative communication systems and peer natural support are studied to improve interpersonal communication and social adaptability of people with disabilities (Fisher et al., 2012). Examining existing research on self-determination from the perspective of social ecology, trying to organize known (and unknown) background factors, these factors may affect the development and

expression of self-determination behaviors of persons with disabilities in multiple ecosystems. By categorizing the background factors that researchers believe affects self-determination, it is possible to determine a framework that systematically considers background factors when designing, implementing, and evaluating support that promotes self-determination. And the author also discussed the direction of future research and practice (Shogren & Karrie, 2013). Using the Bronfenbrenner ’s ecological model of human development to provide an alternative solution based on an understanding of the human development ecology related to public health methods, starting with mapping the systems in which individuals live, exploring the ecology of finding and using the perspectives of mentally handicapped youth in the transition plan Method (Small et al., 2013). According to the principle of ecological suitability, informally integrate attention activities into the classroom environment to cultivate students' self-control, self-efficacy and social adaptability (Malow et al., 2016). Based on cognitive behavior and ecological theory, by changing the behavioral motivation and cognitive restructuring of negative thoughts, the impact of school-based cognitive behavioral treatment programs on the mental health and academic achievement of disabled youth were discussed (Sinclair & James, 2016). Adopt the time sampling method to describe in detail the classroom ecology of the independent senior middle school, the behaviors of teachers and students, and combine the field study notes to analyze the actual learning experience of students with obvious cognitive impairments. The results of the study indicate that these students often passively participate in activities in the classroom and have few opportunities to learn from rigorous courses. Teachers rarely use known effective strategies to support their learning. The classroom itself often distracts students and there is little evidence of specialized or effective teaching (Kurth et al., 2016). Using Bronfenbrenner's ecosystem theory, the factors that support or restrict the participation of severely disabled students in ordinary courses are studied from the perspective of micro, meso, macro, appearance and time systems. These factors affect the content and methods of individual students' access to general courses. Discuss the relationship between these factors and placement methods, teaching background and teaching content, and provide inspiration for research and practice (Ruppar et al., 2017) ...

Although the specific contents and methods of the researches above are different, they all absorb the relevant ideas of ecology to varying degrees, and

emphasize the application of ecological concepts such as whole, system, openness and enrichment.

## 3.2 Researches on the design and implementation of ecologism curriculum for the intellectual disability education in Mainland China

In 1987, the Education Commission of the People's Republic of China promulgated the "Teaching Plan for Full-Time Mentally Handicapped Schools (Classes)" for the trial of mentally handicapped classes attached to ordinary primary schools and full-time mentally handicapped schools. This is the starting point for the independent research and exploration of the national level intellectual education curriculum in the New China. Under the guidance of clear ecological thoughts, the special research on ecological curriculum of intellectual education began at the end of last century. So far, however, the progress in theory has been slow.

### 3.2.1 Overview of the researches on the curriculum of intellectual disability education

"The curriculums of intellectual disability education" and the "ecologism curriculum" in it are the relationship between the whole and the part. The former includes the latter, and the overall status of its development is the basic background and important support for the latter's research and practice. According to the characteristics of the contents of the researches, the curriculum research (except the ecologism curriculum) of intellectual disability education in Mainland of China can be roughly divided into the following aspects:

#### 3.2.1.1 Researches on curriculum standards

In addition to the relevant information mentioned in the "Research Background", the Ministry of Education of the People's Republic of China formally launched the curriculum reform researches in 2003. Therefore, researches in this field mainly focused on explaining the national curriculum standards issued in 2016. Each of the 7 compulsory general courses such as "Life Language", "Life Math", "Life Adaptation", "Labor Skills", "Singing and Rhythm", "Sports and Health", "Painting and Handwork" has been made a detailed interpretation from the national policies and norms. For the 5 elective courses "information technology", "rehabilitation training", "art leisure", "second language", "school-based curriculum", only the first three have

been interpreted. The interpretation of each course includes the course philosophy, course objectives, course nature, course characteristics, course structure, course content, course implementation, course evaluation and course resource development (Hong et al., 2017). These researchers are the compilers of curriculum standards in various disciplines, so their researches mainly represented the country and make a programmatic description of the curriculum from design to implementation from the curriculum system level.

In addition, some scholars carried out the relevant exploration from the personal point of view, but the number of these researches is very small. For example: before the promulgation of the national curriculum standards, the design of the social adaptation curriculum standards for intellectual disability school was initially explored from the perspective of theoretical basis, curriculum nature, curriculum objectives, content standards, implementation and evaluation suggestions (Liu & He, 2005). After the promulgation, the national Curriculum Standards was been compared with the curriculum standards previously formulated by the local government (Chen, 2017). Some scholars only compare the similarities and differences between the national curriculum standards and the local curriculum standards in the Chinese discipline (Wang & Huang, 2018). Others explore the significance and operational strategies of "listening and responding" as a basic learning ability to the implementation of Chinese curriculum standards (Chang, 2017).

#### 3.2.1.2 Research on comprehensive and general curriculum issues

Some scholars have combed and reflected on the history and current situation of curriculum development: by means of a purposive sample questionnaire, the teachers of six schools are investigated to find out their specific views and ideas on the curriculum. The results show that most teachers in intellectual disability edcation school have a basic and correct understanding about the curriculum and can understand the curriculum with newer ideas; many teachers are more interested in the autonomy of curriculum design and hope to improve it by designing own curriculum, because the existing curriculum does not meet the needs of students (Xiao & Liu, 2004). From the four aspects of research participation and research quality, research focus and characteristics, research ideas and training objectives, school-based research and "the experimental program of curriculum development ", the author analyzes the current situation of curriculum reform research. And reflects and looks forward to the lack of the three aspects of curriculum reform: research rationality,

management and guidance, and support system (Wang, 2010); through questionnaires and individual interviews, the implementation of the curriculum in pre-school classes in 22 schools is investigated. The author analyzes the types of pre-school children's disabilities, the setting of curriculum, the use of teaching materials, teaching tools and places, the effect of courses. On the basis of the work above, the author puts forward some suggestions on how to set up the curriculums and refine the content of the curriculum to improve the current situation of the pre-school curriculum (Cao et al., 2018).

Some scholars have explored the curriculum setting and curriculum reform: in terms of curriculum setting, through a detailed analysis of the background, overall framework, specific content settings, characteristics and other aspects of the curriculum system of intellectual disability education in Singapore and Hong Kong. Then explore the enlightenments on the curriculum setting and development in mainland China (Wang et al., 2008; Li & An, 2019). Based on the reflection on curriculum issues, it points out that the training of intellectual disability education curriculum should follow the five basic principles: cultivating the "four citizens" of socialism, compensation, acceptability, practicality, unity and flexibility, and then analyze the focus of the curriculum for children with mild, moderate, and severe intellectual disabilities, finally the activity experience method, unit teaching method, and task analysis method for curriculum implementation are reviewed (Yu, 1994).

Systematically explore the concept, structure, principles, and basic guarantees of the implementation of the curriculum, especially emphasizing that we should pay attention to the defect compensation to ensure the follow-up development of children with disabilities. Implement the combination of medical and education. Construct a curriculum framework. Establish the concept of comprehensive rehabilitation and conduct curriculum integration. Pay attention to the cultivation of rehabilitation talents to meet the needs of education (Du, 2007); for the curriculum reform, some scholars take specific schools or regions as examples, and analyze the problems and development background of the existing curriculum, and propose specific measures for curriculum reform in terms of philosophy, objectives, content, implementation, and evaluation (Lai, 1997; Yu, 2001; Zou, 2005; Zhen & Wang, 2008; Li, 2019). From a macro perspective, some scholars have analyzed the existing curriculum models of disciplinary, developmental, functional, and daily as a whole, then propose the curriculum development and implementation model that functional sub-disciplines,

complete sub-disciplines, development inquiry, and diversified (Xu, 2003; Ma & He, 2005; Deng et al., 2014) .

Some scholars have studied the types and modes of general courses in intellectual disability education: combining the physical and mental development characteristics of mentally retarded children and the needs of education and teaching, with the guidance of the new definition of intellectual disability promulgated by the American Association on Mental Retardation in 1992, an adaptive functional education curriculum suitable for children with intellectual disabilities aged 6-18 is compiled. The curriculum takes individual education as the soul, forms a complete education target system and curriculum structure, takes adaptive education as the purpose, functional education as the means, individualized education as the principle, and ordinary children ’s physical and mental development content as clues. It emphasizes the construction of support and assistance system. It has achieved good results in both urban and rural teaching experiments (Zhang, 1998). On the basis of comprehensive evaluation, the school-based adaptive curriculum system is constructed. The key measures include: implementing the national curriculum, promoting the integrated teaching model under the principle of integration of education and rehabilitation; trying to take the layered teaching shift class; actively developing school curricula and constructing the localization curriculum (Hou, 2016). To explore the educational potential of the local traditional handicraft "Huishan Clay Figure" for the goal of improving life adaptability, through the production of the Clay Figure, students with intellectual disabilities can improve their comprehensive abilities to adapt to social life, such as hands-on ability and communicative ability, and also it will lay the necessary foundation for the self-supporting workers (Gu & Zhu, 2015).

With individualization, integration and life as the guidance, in the school-based curriculum system the regular and conditioning curriculum is constructed. Among them, the regular curriculums are mainly general and selective courses prescribed by the state, and the model of unit-theme teaching is implemented. Conditioning curriculums are courses developed by teachers according to their interests, hobbies, specialties combined with professional and student needs, including calligraphy, art conditioning, desktop games, rehabilitation and health classes (Li, 2017). From the perspective of modernization of education and children's right to education, it discusses the survival education of children with intellectual disabilities,

and builds a complete system from curriculum concept, curriculum objectives, curriculum structure to curriculum organization, textbook compilation and implementation (He, 2009). On the basis of summarizing the development of the curriculum, based on the theory of life quality in the field of special education in the United States, the researcher constructs series of supportive teaching procedures (Duan, 2013). The author thinks that rehabilitation courses are both remedial and supportive, with different emphasis at each learning stage, and takes the school's perceptual action-emotional behavior communication group and assistive device group as examples to explain the operation model of cross-professional integrated rehabilitation courses (Liu & Tang, 2015).

On the curriculum model, some scholars start with the analysis of the basic concepts of "thematic teaching" and "curriculum integration" to analyze the theoretical basis, advantages and detailed implementation of the steps of thematic curriculum model (Xie, 2007). Another scholar aims at the six fields of social adaptation of students with intellectual disabilities, takes the activity as the basic way. The basic process contains the course theme determination, the theme goal formulation, the subject decomposition and the integrated teaching activity design. Then she carries on the integrated curriculum design and the implementation (Sun, 2004). In order to make every student with intellectual disability to enjoy suitable education and gain from learning, some scholars have designed a step-by-step life education curriculum according to the educational emphasis of students of different ages, guided by the concept of individualized education, and set up an integrated model of education and rehabilitation with cross-professional cooperation, and gradually form a curriculum operation model with life education as the core and cross-professional integration (Xie, 2015). Under the guidance of the comprehensive rehabilitation concept, one scholar starts from the physical and mental development characteristics of students with intellectual disabilities and constructs a school curriculum system composed of three major sections: superior courses, basic courses, and compensation courses to meet the individual needs of students and promote their development in education and rehabilitation (Ge, 2017).

Some researchers start with the construction of curriculum framework, integrate school work and employment, integrate basic courses, rehabilitation courses and life and vocational skills courses with social adaptation, realize the integration construction of nine-year compulsory education and three-year high school education,

provide appropriate educational support for every student with intellectual disability, and explore a new way to construct the curriculum model in the school (Zhang, 2019). Other aspects of the curriculum model include study of the model of individual curriculum implementation (sun et al., 2015). Construction and implementation of educational and rehabilitation curriculum models for youth with intellectual disabilities (Yu, 2010). Research on diversion teaching models for children with intellectual disabilities in rural primary schools (Ying, 2004). Construction and implementation of curriculum system for autistic students (Lu, 2016). Foreign practice models of self-determination courses for students with intellectual disabilities and their Enlightenment to China (Wang & Deng, 2015).

#### 3.2.1.3 Researches on the development of school-based curriculum

Part of the researches focuses on the local school-based curriculum: an in-depth survey of the current status of school-based curriculum development in five intellectual disability education schools in Shaanxi Province, the research finds that the factors affecting school-based curriculum development mainly involve personnel, funding, resources and national policies. The main problems are: the teachers involved in the curriculum development do not have a good understanding of the school-based curriculum; they lack the initiative and enthusiasm; the teacher structure in the district and county is unreasonable; the curriculum resources are not fully developed; the content is not enough; evaluation is in the form; school-based courses are "only developed but not implemented"; lack of parent involvement, expert guidance, and insufficient funding. The researcher’s suggestions are: speed up the construction of the teaching staff; strengthen the construction of school-based curriculum; establish a policy guarantee mechanism to ensure the development and implementation of school-based curriculum; establish an effective external support system (Wang, 2017).

After investigating the 11 special education schools in Xinjiang that focus on intellectual disability education. The research finds out that the following problems exist in the development of school-based curriculum in this area: the relevant government departments pay less attention to it; the development conditions between north and south Xinjiang are very different; the school organization and management are not in place; and the school characteristics are not obvious; curriculum development lacks the support of all parties and the cooperation is not ideal; the degree of curriculum resource development is low; and the existing courses lack

scientificity. The proposed solution strategies are: overall planning, regular supervision; organization and guidance, standardized management; strengthen training, learning and improvement; strive for support, multi-party cooperation; scientific norms, and improve courses (Niu, 2017).

Integrating the natural and social resources of Lanzhou City, Gansu Province, the scholar points out that we should build a local school-based curriculum based on the growth and development of students, take "practical" as the foothold, use local culture to build a life-style classroom and take community teaching as an extension, integrate local cultural resources, and highlight the openness of life-style courses (Yan, 2018). Taking the case of Stubbingwood School in the United Kingdom as a case, reviewing in detail its thoughts and a series of implementation processes for developing a school-based curriculum development system under the guidance of national curriculum standards, so as to explore its enlightenment on the development orientation and implementation strategy in China. In particular, the researcher suggests that a comprehensive curriculum standard should be constructed and a rich curriculum evaluation system should be constructed (Lin, 2018).

Parts of the researches mainly discuss a specific subject or a specific field of school-based curriculum development ideas and strategies: based on the status survey, the researcher and teachers in special education collaborate to develop the school-based curriculum of life Chinese, including analysis of the current situation of school-based curriculum of life Chinese, analysis of the environment inside and outside the school, assessment of students, formulation of curriculum objectives, and arrangement of teaching materials , the implementation of courses, etc., the research achieves certain results (An, 2016). Other researches include the design and implementation of life mathematics courses (Ren, 2016; Pan, 2019), the design and implementation of occupational rehabilitation and motor rehabilitation courses (Zhang, 2015; Li, 2019), school-based moral education research on patterns (Huo, 2008). These school-based discipline courses are all based on the experimental plan of the curriculum set by the national ministry of education. The main ideas and core processes of the researches are similar: based on the analysis of the background and problems of school-based curriculum development, constructing a partial or complete framework for the design and implementation of school-based curriculum for social adaptation and community participation in terms of curriculum objectives, curriculum content, curriculum implementation methods, curriculum evaluation, etc. improving their social

participation and quality of life(Wang, 2009;Wang, 2013;Zao, 2015;Chen & Wan, 2018;Bai, 2018).

On the basis of the preliminary results of the development of the school-based curriculum of sex education for the lower grade students with intellectual disabilities, researchers have further developed school-based courses on sexual education for students with intellectual disabilities according to the steps of current situation of investigation, analysis of needs; design courses, compile teaching materials; selecting students, implement courses; evaluate courses, reflect on the process of perfection. As a result, it is found that this course can improve students' sexual knowledge and skills, lead home-school collaborative teaching, promote teachers' professional development and improve school curriculum construction (wang et al., 2016, 2018). Combining the characteristics of students and the development background of their schools, the researchers take the courses development of planting, breeding and pastry production as examples to discuss the series of problems of school-based curriculum development of vocational education for students with intellectual disabilities (Zhang, 2015; Wang, 2015; Zhang, 2017).

In addition, there is also a large amount of researches focused on the universal problems, theories or strategies of the development of school-based curriculum in intellectual disability education: a comprehensive review of the value orientation, types, content, organization and evaluation methods, problems, etc. of the existing research on school-based curriculum development, then put forward the improvement strategies for future development (Wang, 2004; Wu, 2013; Zhang & Lan, 2015). Absorbing academic theories such as subject courses, humanistic courses, core courses, career education and quality of life, then summarize the curriculum development principles of life-oriented, life as education, integrated courses, systematic and collaborative. Finally develop school-based courses according to the steps of preparation, curriculum development, textbook compilation, education evaluation, reflection and other processes (Huang et al., 2004; Yu, 2005; Wang, 2012). Starting from the practical needs of students with disabilities, a comprehensive curriculum support system including concepts, systems, personnel, resources, environment, brands, etc. is constructed to make school-based curriculum development more standardized and feasible, and effectively guarantee (Huang & Lu, 2014). Based on the role and subjective status of teachers in school-based curriculum development, five basic qualities are proposed: the awareness of school-based

curriculum development, the ability to set curriculum objectives, the ability to determine course content, and organize courses implement and evaluate the effectiveness of the curriculum (Wang, 2016).

#### 3.2.1.4 Researches on one or more elements of the curriculum

All the previous studies are concerned with some curriculum elements and their unique relationship, but they all form a relatively complete curriculum structure. Beyond those, there are some researches that focus only on one or several elements of the curriculum, such as exploring the curriculum objectives or content setting of students with mild, moderate and severe intellectual disabilities, and looking to future reform strategies (xie, 2002; wang, 2003). On the basis of reviewing the definition of social adaptability of children with intellectual disability, the scholar analyzes its important position; carries out a detailed review and analysis of the social adaptation goals in the curriculum system of Chinese schools; Taking the ability of social adaptation as the entry point, discusses and thinks about the development direction of curriculum reform in Chinese intellectual disability education school (Deng & Lei, 2006).

On the basis of analyzing the connotation of life, knowledge and skill and its development in the curriculum of intellectual disability education school, summarizing and analyzing the beneficial experiences and misunderstandings in the course of curriculum life and knowledge teaching. Then putting forward the curriculum development goals and its realization path of "meaningful" and "perfect life" (Wu & Xiao, 2014). Discuss in detail the connotation and significance of curriculum-based assessment and its relevance and operation flow in intellectual disability education (zhang, 1999; xie). Other studies have explored the meaning, importance, and development and utilization strategies of curriculum resources in a broad or specific field (Pan, 2006; Tian, 2008; Wang, 2014; Li, 2019).

#### 3.2.1.5 Summary of literature researches

The research results above reflect the twists and turns of curriculum and teaching from theory to practice in mainland China. The general trend and progress are as follows: from following general education to gradually seeking an independent research system; from knowledge center to student and social center; from copying foreign research and practice results to seeking localized thinking and exploration; from thinking on narrow curriculum elements to focusing on a wide range of curriculum elements.

In general, however, there are the following shortcomings: the level of curriculum practice and research varies from region to region, the advanced schools in the developed areas along the eastern coast are getting closer to the level of the developed countries or regions in both respects, but in the central and western schools, all of the concept, design, implementation, research are in a passive wait-and-see state; the overall practice and research compared with the world advanced level, there is still a big gap, lacks of localization of original research. In the early period, the Soviet Union had a great influence. After the 1980s, the European and American special religions had a great influence. The theoretical workers represented by special education teachers in colleges and universities generally lack rich practical experience. Otherwise the first-line teachers represented by special education schools generally lack profound theoretical accomplishment. This situation objectively aggravat the phenomenon of disconnection between theory and practice in curriculum research and affects the quality of research and practice; in the course management, although the three-level management system of the central government, local government, and specific schools has been optimized, the local and school curriculum powers are still limited and fluctuate from time to time, which will definitely affect all aspects of curriculum practice and research; the practical implementation and research curriculum paradigm is very single, almost all of them are modern goal-oriented curriculum development and research models under the dualism thinking and mechanical worldview. The practice and research of the multi-discourse system such as process model, situation model, and critical model and so on need to be strengthened. Therefore, in general, the level of theoretical research in this field is not high. Only by changing the research paradigm, studying the particularity of the curriculum, and teachers participating in curriculum research can we get rid of the weak theoretical research and the single plight of practical exploration.

From the perspective of the core theme of this research, the research results above also reflect the basic ideological, environmental and practical foundations for the design and implementation of eco-oriented courses for beginning teachers of intellectual disability education in the mainland China. However, as a whole, the curriculum development has a late start, low level, and huge differences between different regions and schools. Therefore, for the cooperative teachers of this study, our course of action is still full of various variables and challenges.

## 3.2.2 Relevant researches on ecologism curriculum of intellectual disability education

The formal research and practice in this field in mainland China began at the beginning of this century. After nearly 20 years of development, the relevant research results mainly show the following characteristics:

### 3.2.2.1. Connotation of the ecologism curriculum

In the professional context of intellectual disability education in mainland China, "Ecologism Curriculum" is not a term with clear connotation so far. Different scholars, even the same scholars in different periods, the understanding and expression of it are not exactly the same. The common terms reflecting its connotation are: "Environment Ecology Assessment Curriculum", "Environment Ecology Curriculum", "Ecology-oriented Curriculum", "Environment Ecology Analysis Curriculum", "Ecology Curriculum". The differences in the use of these terms reflect the differences in the perspective and focus of scholars' understanding of the ecological curriculum. There are three common definitions:

"Environment ecology curriculum" means "placing children in a normal daily life (with emphasis on their family, school, community, occupation), according to their abilities levels and the present situation, and taking the future adaptation to the normal living environment as the guide, fully understanding the living environment, using the living environment, and providing the individualized educational curriculum suitable for their educational needs to promote development (Zhang, 2000). The definition emphasizes the dependence of the ecological curriculum on the environment, the student's dominant position in the curriculum, the future orientation of the curriculum, and the inheritance of such curriculum for developmental and individualized educational ideas.

"Ecology-oriented curriculum" is "the life of the students themselves; it is the amplification of everyday life that everyone is familiar with... It is the day in the student's life, is the innumerable daily life forms the student's ecology-oriented curriculum connotation... The course not only focuses on the direction of students' future life, but also on the students' feelings of instant life. It is the accumulation of day-to-day life that constitutes the impression of students' life at school, it is the practice of life year after year, and gradually leads to the vision of sustainable life (Li, 2003). The definition is a student-centered definition with natural ecology as the core.

It particularly emphasizes the naturalness and subjective experience of the curriculum, and ultimately leads to the students' true, rich, high-quality life and the harmonious development of individuals and environment.

"Ecological Course" is the result of the concrete concept of ecologism curriculum, ecologism curriculum concept is not only a curriculum concept, but also a curriculum implementation strategy. It is based on the ecological worldview, values, epistemology and methodology to think, explain and solve curriculum problems, and to develop curriculum theory and practice in an ecological way (Li, 2016). This definition emphasizes the ecological theory and knowledge base of eco-oriented curriculum, and regards curriculum as the unity of theory and practice.

The three typical definitions above emphasize different key points and subsequent implementation strategies. They represent different understandings of the environment center, student center, and knowledge center of the eco-oriented curriculum. Other scholars' understanding of such courses can be attributed to one or more of these three definitions.

**3.2.2.2 Theoretical background on the rise of ecologism curriculum**

The curriculum development of intellectual disability education has experienced zero curriculum, remedial curriculum, developmental curriculum and adaptive functional education curriculum. Each of these curriculums has its own characteristics and scope of application and the reflection on their advantages and disadvantages is one of the reasons for the rise of ecologism courses. The rise and development of ecological education curriculum and environmental education curriculum is also an important background of ecologism curriculum in intellectual disability education (zhang, 2000; li, 2003). The reform of general education in mainland China is in the ascendant, and the reform of special education curriculum is gradually advancing. And it also requires that the curriculum of intellectual education should be more reflective and innovative to better coordinate the relationship between curriculum and environment (zhang, 2014). In addition, with the rise of postmodernism, people gradually reflect on the characteristics and disadvantages of "modern special education ", which is mainly guided by "modern thinking ": objective-oriented curriculum development, atomistic approach to objective analysis, emphasis on specific observable performance, implementation of a series of tedious individualized education, and promotion of specialized services (Li, 2003) ... So the special educational thoughts and curriculum of ecologism come into being. And its

direct theoretical basis includes biology, ecological theory, environmental ethics, environmental ecology theory and postmodernism curriculum view (zhang, 2014).

From the theoretical background above, we can find that the emergence of ecologism curriculum of intellectual disability education in mainland China also has complex theoretical and practical motivation, which is the inevitable trend of the evolution of the whole social trend of thoughts and the internal transformation of special education.

**3.2.2.3 Characteristics of the ecologism curriculum**

Based on the different definitions of curriculum connotation, the ecologism curriculum in intellectual disability education presents the following main features:
Ecologism curriculum focuses on the detailed analysis of the family environment and community environment of children's individual life, so that the whole process of family education is placed in the real and normal life of children. It takes the environment ecology as the axis, covers each domain in the real life, it is more advantageous to the life adaptation formation. The authenticity and normality of the curriculum reduces the difficulty of the transfer of children with intelletual disability, and promotes the formation and development of the ability of the transfer. It helpful for the presentation of support aids and facilitates the establishment of natural support systems (zhang, 2000).

Ecology-oriented curriculum must be real, integrated, and contextual. Learning can’t be interrupted from the beginning. Learn in life and make the result of learning a part of life. Don’t distinguish between work, games and learning. Apply the concept of natural schedule. Use natural support, natural consequences. Let students construct their own ability. Emphasize on students' autonomous learning. Make students popular. A new in-service teacher training programme emphasizes the development of teachers with the ability to act and reflect (Li & Dai, 2003).

The ecologism curriculum is a tailor-made, individualized, formative, on-the-spot and intelligent curriculum, which is based on the outlook on life and values. It is an off-the-shelf self-guided course in discussion and choice, emphasizing the connection with family life and broad community and social life, creating, enriching, and engaging. It requires updating the teacher view, student view and building support system (zhang, 2014).

The ecologism curriculum pays attention to the unity of children's needs and social needs, and the continuous interaction between teachers, students, teaching

materials and environment. Peer interaction plays an important role in the course operation, and the relationship between teachers and students is democratic, equal. Situation is the internal symbol of ecological curriculum, and the situational nature of curriculum is embodied in learning environment, implementation model and curriculum evaluation. Individualization thought laid the foundation for the development of curriculum towards ecology (Li, 2016).

The four contents above represent the mainstream understanding of the characteristics of ecologism curriculum in the intellectual disability education circles in mainland China, and the results of other related studies are much the same or based on these expressions. All these researches follow the value orientation of ecologism and all of them focus on the curriculum ecosystem composed of teachers, students, teaching materials and teaching environment. However, the focus of different research is different, some emphasize the constraints of environment to curriculum design and implementation, and others attach importance to the central position of students, some pay attention to the learning of knowledge and skills.

**3.2.2.4 Models for the implementation of the ecologism curriculum**

Because of the different curriculum concept and implementation conditions and situations, the ecologism curriculum has different operation models. A variety of implementation models can be broadly grouped into three basic types:

Environment-based implementation model: This pattern is divided into more subtle subtypes because of the different nature of the implementing subjects, for example, implementation process based on educational rehabilitation centers for children with special needs: Establish the case→ analyze the living environment of the case→ present the interactive state of the case in a certain environment→ form teaching content and goals→ form a support system in the environment→ execute teaching; Implementation model based on special education schools: taking community-based teaching ideas as direct guidance, all aspects of curriculum design and implementation are fully "communized", such as curriculum concept, curriculum purpose, curriculum planning, curriculum implementation, selection and use of curriculum resources, and curriculum evaluation. The curriculum is designed and implemented in this method and process: environmental analysis→ overall experience→ local cognition→ integration of practice, system consolidation, individual revision→ the basic structure of application creation, and community experience→ classroom reproduction, re-entry into the community→ classroom

reinforcement, revision→ community application implementation process to carry out community-based, ecological teaching (Liu, 2011).

Knowledge or skills-based implementation models: for example, based on the national curriculum setting plan and curriculum standards, as well as the construction and operation of the localized curriculum community practice base, the "1 + 1 + N" curriculum implementation model is constructed as a guide for the school-community comprehensive practical activity. The specific curriculum activities are centered on the teaching theme of each month, combined with the school curriculum support office, adaptive behavior support office, teaching and research team, class chief teacher, family and community, students are organized according to one semester, one month, N times to carry out community comprehensive practical activity courses(Shuangliu Special Education School, 2018).

Implementation model based on students' needs, growth and experience: for example, on the basis of defining the connotation and core idea of ecologism curriculum, taking the philosophy view and curriculum view of post-modernism as the basic guidance, the course design and implementation are as follows: establish curriculum ideals→ curriculum indicators, individual and environmental assessments→ draw up individualized education plans→ activities teaching→ curriculum assessment (re-definition, recognition of curriculum ideals)→evaluation of the next stage→ formulation of the next stage of education plans... Repeatedly and spiraling upwards, it finally reached the "process of pursuing life aesthetics through the interpretive interactive dialogue with the environment during the growth of life individuals" (Li & Dai, 2003).

The three models above of implementation represent the typical operation model produced in the course of ecological course exploration of intellectual disability education in the mainland China so far. Each of them has its own curriculum philosophy and applicable field, in the specific teaching situation, often need to be applied comprehensively, in order to respond to the complexity and diversity of real education.

3.2.2.5 **Summary of literature researches**

On the whole, the researches and practice of the intellectual disability education curriculum in the mainland China with clear ecological concepts and theories starts late, only about 20 years, and is still in the stage of preliminary exploration. There are very few researchers in this field in universities and in basic

special education schools compared to other professional fields. The breadth and depth of the research need to be strengthened, the general theoretical system of the curriculum has not been constructed, and the fine practical researches are rare. From the basic concept to the design, and then to the implementation, many of the curriculum links still lack of in-depth discussion, and debated. In the existing researches, there is no literature specifically on the understanding and implementation of this kind of curriculum for beginning teachers.

## 3.3 Researches on the intellectual disability education teachers in Mainland China

In the 1980s, the formal researches on intellectual disability education teachers in the New China were initiated. In 1982, the Jiangsu Provincial Department of Education was commissioned by the Ministry of Education to start the preparation of the first training institution for secondary special education teachers "Nanjing Special Education Normal School". In 1985, the intellectual disability education was formally incorporated into the special education system as an independent branch. In 1986, the famous special education expert Piao Yongxin founded the first higher special education major in mainland China at Beijing Normal University (Zhu, 2011). From the point of view of professional knowledge and skills, professional sentiment, the main research situation is as follows:

### 3.3.1 Relevant researches on professional knowledge and skills of the teachers’

The results of the surveys on the information literacy status of teachers in intellectual disability education in Guizhou and Gansu provinces show that teachers’ information awareness is not strong, their information abilities are not high, and individual differences are large. The construction of informatization teaching environment needs to be improved. The lack of teaching resources is manifested in a small number, inferior quality and insufficient richness. Insufficient training related to informatization teaching, insufficient targeted demands, and insufficient implementation of informatization teaching, the effect of teaching is not good. To this end, we should improve the construction of special education informatization environment, build a special education informatization resource database, strengthen

the training of teachers, change the concept of awareness, enhance the teaching skills of informatization, formulate the development plan of training informatization of educational education, and improve the teaching of informatization Management Evaluation System (Li, 2007; Chen, 2016).

The research on teacher's teaching design abilities shows that the overall level of teacher's teaching design is good, the elements of teaching design are good, and the level of teaching design is different in different disciplines. However, this is the result of a study about an intellectual disability education school in a developed region and does not necessarily represent the real situation in the rest of the country (Liu, 2013). Teachers' ability is generally in the middle level to grasp teaching materials, use teaching methods, language expression, student behavior management, teacher-student interaction and teaching style in classroom teaching. Teachers' classroom teaching ability of grasping teaching materials, students' behavior management and teacher-student interaction is mainly good, and the ability of demonstration method application, non-verbal expression and humorous teaching style is lacking. Teachers' teaching ability in Chinese, mathematics and other courses is equal. The researchers suggest that we should pay more attention to cultivating teachers' classroom teaching ability, and start from the details. Improve the non-verbal expression ability of teachers in the school. Teachers' classroom teaching is encouraged to reflect the characteristics of the subject. Strengthen the application of multimedia in classroom teaching (Zhang, 2013).

A research on the teacher-student interaction between students with mild mental retardation in inclusive classes and another research on the current situation of teacher-student interaction in intellectual disability education schools show that the methods and skills of teacher-student interaction are also important skills that teachers in intellectual disability education must master (Jing, 2013; Wu, 2017). Teacher feedback, as a part of teaching, has an important influence on students' learning. At present, the main problems of teacher feedback are: no cycle mode of feedback established; lack of stent support; lack of detailed information provided. Combined with these problems and the evaluation criteria of teacher feedback quality in the UK class quality assessment scale, a teacher feedback evaluation standard system is proposed which composed of "emotional support","providing scaffold","establishing feedback cycle","providing detailed information", and "individualized feedback " (Gao, 2015). Through a detailed research on the comprehension ability, testing and

evaluation ability, teaching design ability, teaching implementation ability and evaluation and feedback ability of teachers in intellectual disability education, it is found that the ability of differential teaching comprehension is higher, teaching implementation and evaluation and feedback is lower, and differential testing and evaluation and teaching design is at the middle level. Teachers with bachelor's degree or above, normal professional background, special education professional background, and teachers as class teachers or low age have relatively high differential teaching ability. Many teachers can pay attention to observe the differences of each student at ordinary times, but the effect of transforming theory into practice in concrete implementation is not very ideal. So we should perfect the teacher training mechanism, implement the rotation system of the term class teacher, combine the collective class with the individual training, the teacher should improve the education and teaching accomplishment, study the evaluation tool related to the education and teaching (Bai, 2016).

Idea, knowledge and environment are the three basic factors that affect the formation of teachers' teaching reflection ability. The motive force of teaching reflection comes from internal self-control, consciousness and external driving force. The teachers reflect most on teaching methods, teaching contents and effects, second on teaching management and ethics, and not enough on teaching objectives; The level of reflection is mostly technical reflection, followed by understanding reflection, critical reflection is insufficient; The perspective of teaching reflection is mostly from the perspective of students and self, and the perspective of colleagues and theory is less. Teachers in different stages of survival, adaptation and maturity have different performance of teaching reflection performance. we can effectively improve the level of teaching reflection of teachers in intellectual education by accumulating reflective knowledge, expanding the elements of teaching reflection, cultivating reflective consciousness, changing the angle of thinking and changing the angle of teaching reflection, mastering scientific methods and enriching the way of teaching reflection (Li, 2016; Li, 2017).

There are some questions in teacher's classroom questions: the waiting time is short, the types of them tend to lower level questions, the language of affirmation and praise when students answer correctly is slightly single, the design of enlightening, challenging questions, single type of questions, lack of questioning closely, adequate presupposition but lack of generation, less reflection, lack of follow-up. Teachers'

professional development level, the purpose and way of classroom questioning will affect the quality of teachers' questioning. Ways to improve the efficiency of classroom questioning may include: Strengthen the support for special education and teachers, improve the treatment and welfare of special education teachers, prevent teachers from becoming burnout, strengthen the training of teachers, and actively grasp the latest educational methods and means. Teachers should always pay attention to their professional qualities and professional abilities, and use the concept of "effective questioning" to guide teaching work. Establish classroom questioning standards suitable for the school as soon as possible (Wei, 2016; Chen, 2017). A comparative analysis of the verbal response behavior of novice teachers and proficient teachers shows that the two types of teachers differ significantly in the frequency of response collective, and novice teachers use it more frequently. Both of them use positive and neutral responses more frequently, with significant differences in positive responses and more frequent used by experienced teachers. Teachers' speech response behaviors are influenced by their speech response concept, personality characteristics and teaching guidance ability (Li & Zhen, 2018).

The teacher's main classroom teaching behaviors include presentation, dialogue and guidance.

A research in the case school shows that the teachers' speech is accurate in presentation behavior, but there are problems of language flow interruption and language expression ambiguity. Teachers' awareness of pre-design blackboard writing needs to be improved, the use of multimedia frequency is low; the clarity of the question expression in the dialogue still needs to be improved, the waiting time needs to be further managed, the scope of the answer is limited, the way of rational answer is simple and negative, the inquiry is less, the repeated questions are more, some discussion behaviors are mere formality; in the guidance behavior, the teacher instructs the student too much, the opportunity grasps improperly, the opportunity distributes unevenly, does not establish the independent practice routine. As a result, we should strengthen the training of teachers' teaching skills, optimize the classroom behavior of accompanying parents, strengthen teachers' self-efficacy, strengthen professional identity, perfect the evaluation system of teachers' multidimensional ability, and establish teachers' classroom teaching behavior norms (Hou, 2018). The teachers' mastery of the technical methods of education rehabilitation training can solve the problems encountered in the teaching process more effectively and promote

the healthy development of children's body and mind. Through the implementation and participation of education, research, training and other ways teachers' skills in education and rehabilitation can be improved (Li & Yuan, 2019). A semi-structured interview is used to construct the evaluation system of individualized teaching, including teaching objectives, contents, resources, process and homework design (Li & Lian, 2019).

From a time point of view, the relevant researches on the knowledge and skills of teachers in intellectual disability education have mainly been concentrated in the past 20 years, which is closely related to the degree of importance and development planning of the country for special education. For the research subjects, most of the researchers are teachers or students majoring in higher special education, and the researches from the grass-roots teachers themselves are very few, which inevitably affects the quality of the research. For the research content, the research topics mainly focus on the discussions of many teaching links of the subject courses with the goals as the basic orientation, and pay little attention to the relevant knowledge and skills of the course, such as process model, situation model, and critical model and so on. From the field point of view, almost all of the researches focus on public schools or ordinary schools in which students with intellectual disabilities attend, and lack attention to a large number of private educational institutions.

### 3.3.2 Relevant researches on professional sentiment of the teachers’

These researches mainly involve the mental health status, job burnout, self-efficacy, job satisfaction, and job stress and so on:

A study of the mental health about special education teachers in Fujian Province shows that, at present, the mental health status of teachers is good, many mental health factor scores are significantly lower than the national norm. The female teachers are worse than that of male teachers; the problems of highly educated teachers are more prominent. The teachers in 5 years and 16~20 years of teaching age are less ideal, Showing the phenomenon of two ends heavy and middle light (Li, 2014). The psychological capitals of education teachers include altruism, resilience, tolerance, gratitude, emotional intelligence and so on. School support atmosphere, job burnout can significantly predict the level of psychological capital. By creating an atmosphere of school support, reducing teachers' job burnout and taking corresponding measures according to their demographic characteristics, teachers'

psychological capital level can be improved (Kong, 2018). The overall level of the design and implementation of ethical norms in the IEP of teachers' is on the high side, among which "privacy and confidentiality" is ideal, and "objective justice" needs to be strengthened. "Development and implementation of short-term and short-term goals" is ideal, and "provision of special education and related services" needs to be strengthened (Xin & Liu, 2017).

The reasons for teachers' job burnout include work, social, organizational and personal factors, such as: low social recognition, weak self-efficacy, low professional quality, lack of professional development motivation, complicated types of student disabilities cause overdraft of teachers' energy, lack of achievement in work, low social status and low salary, etc. The main characteristics of job burnout are that the difference between gender and job burnout is not significant. The difference between age and job burnout is significant, and teachers under 25 years old are relatively less prone to burnout. Married teachers scored significantly lower on personal achievement than unmarried teachers. The lower the teaching age, the less the teacher is prone to burnout. Class teachers, high-educated, special education professional background relative are not easy to burnout. Therefore, the following measures should be taken to improve teachers' job well-being and to overcome the negative effects of job burnout: create a high-quality campus culture, establish a harmonious management mechanism, provide effective professional guidance, build a rich feeling of teachers, provide teachers with more opportunities for continuing education, improve the treatment of school teachers of children with intellectual backwardness, respect their work, improve the operating mechanism and environment of the school, teachers themselves strengthen self-adjustment (Sun, 2007; Gao, 2013; Chen, 2015).

The professional stress for the intellectual disability teachers is real, they may come from the profession itself, life, students, parents and society. The pressure of management and teaching is relatively large, and the stress response is better. The stress of interpersonal relationship and career development is relatively small, but the stress response is poor. The main methods of teachers to deal with professional stress are to carry out targeted education for students with different disabilities, to formulate and implement class routine, to talk to people around the setbacks and troubles in the work and to plan their career. The measures to relieve teachers' professional pressure include strengthening the management of schools and educational administration departments, perfecting relevant laws and regulations, increasing social recognition

and improving teachers' own quality (Jiao, 2012; Xia, 2015). A research of school-based curriculum development for teachers in Guangdong province shows that it is better than harm for teachers, but the scientificalness needs to be improved. The positive experience of curriculum development is greater than the negative experience, but it needs to be further improved. The behavior tendency of teachers' curriculum development is more positive, but the initiative is not so high. Attitude towards curriculum development is generally positive but related to personal attributes (Su, 2012).

With the increase of age, the increase of special teaching age, the improvement of professional title and the decrease of turnover intention, the overall teaching efficacy of teachers in the school is improved. A teacher who is satisfied with self-assessment, his overall teaching efficacy is higher than the others. Social support and core self-evaluation are positively correlated with the sense of teaching efficacy, and they all have positive predictive effect on teaching efficacy. A research about teachers' behavioral intervention efficacy in intellectual education shows that, it will significantly affect the efficacy of student problem behavior intervention that teachers' age, special teaching age, professional title, academic qualifications, knowledge reserve, participation in training and job responsibilities; Gender and professional background have no effect on teachers' problem behavior intervention efficacy. Teacher's problem-behavioral intervention effectiveness is influenced by factors from students with special needs and their parents, school-related personnel and resources (Fang, 2019; Li, 2019).

Some factors will influence teacher's work achievement: for example, the personal gender, the age, the marital status, the education degree, the length of service, the title, whether holds the administrative position, the weekly class hours and so on. Their overall job satisfaction needs to be improved. Among them, young teachers who do not hold administrative posts but have high academic qualifications, low professional titles, and more class hours will have low job satisfaction. So we should strengthen the training of young and middle-aged, new teachers' professional ideal and professional ability to promote educational equity and support special education. The education departments should study and formulate and implement the specific principles and policies which conform to the special education law and have the special education characteristic then organizes and implementation. Schools should be humanistic, enrich the humanistic care for special education teachers. Teachers should

set reasonable teaching expectations and create internal conditions to improve teachers' job satisfaction (Chen, 2014, 2015, 2016).

### 3.3.3 Summary of literature researches

On the whole, the related researches on the professional knowledge, skills and affection of teachers in the Chinese mainland involve the main aspects of teachers' literacy. However, the subjects, content, methods, objects and application of the results are not perfect. For example, It is not until 2015 that the first comprehensive and general "*Special Education Teachers' Professional Standards (Trial Implementation)*" is promulgated after the founding of New China. For the first time, the "concept and ethics", "professional knowledge" and "professional ability" of special education teachers are clearly explained (Ministry of Education of the People's Republic of China, 2015). So far, however, there is a lack of independent national professional standards applicable to teachers in intellectual disability education. It is not until 2019 that the first *Special Education Professional Certification Standard* is promulgated at the national level. According to three different quality grades, it regulates the training of special education teachers in colleges and universities in terms of "training objectives", "graduation requirements", "curriculum and teaching", "cooperation and practice", "teaching staff", "supporting conditions", "quality assurance" and "student development" (Department of Teacher Work, Ministry of Education, 2019).

The existing researches on the beginning teachers of intellectual education is only scattered in the research results, and lack of independent, comprehensive and detailed researches. The researches on their design and implementation of ecologism curriculum are even rarer.

# Chapter 4 Investigations and analysis of the design and implementation of the ecologism curriculum for beginning teachers in intellectual disability education in Mainland China

## 4.1 Purposes of the investigation

Through the previous literature research, we have a relatively comprehensive and in-depth understanding about the ecological education thoughts and practice in the western special education field, and the design and implementation of it in mainland China, and the relevant researches on the teachers in the intellectual disability education. However, due to the late start and low level both in research and practice of the ecologism curriculum in intellectual disability education in mainland China, there is a lack of independent researches on beginning teachers' design and implement of such curriculum. The main objectives of the survey are:

Getting a comprehensive understanding of the curriculum and teaching status of the teachers' and their schools' in mainland China, it is an important background to design and implement ecologism curriculum.

Fully understanding the recognition, design and implementation status, difficulties and demands about the ecologism curriculum of the beginning teachers in mainland China, it is the direct aim of the investigation.

Through the two aspects of the survey above, we do our best to prepare the mentality, ideas and theories for our curriculum action research.

## 4.2 Development of the questionnaire

The development of the questionnaire has gone through a series of processes from the early preparation to the formation version, the main process is shown in the following Figure:

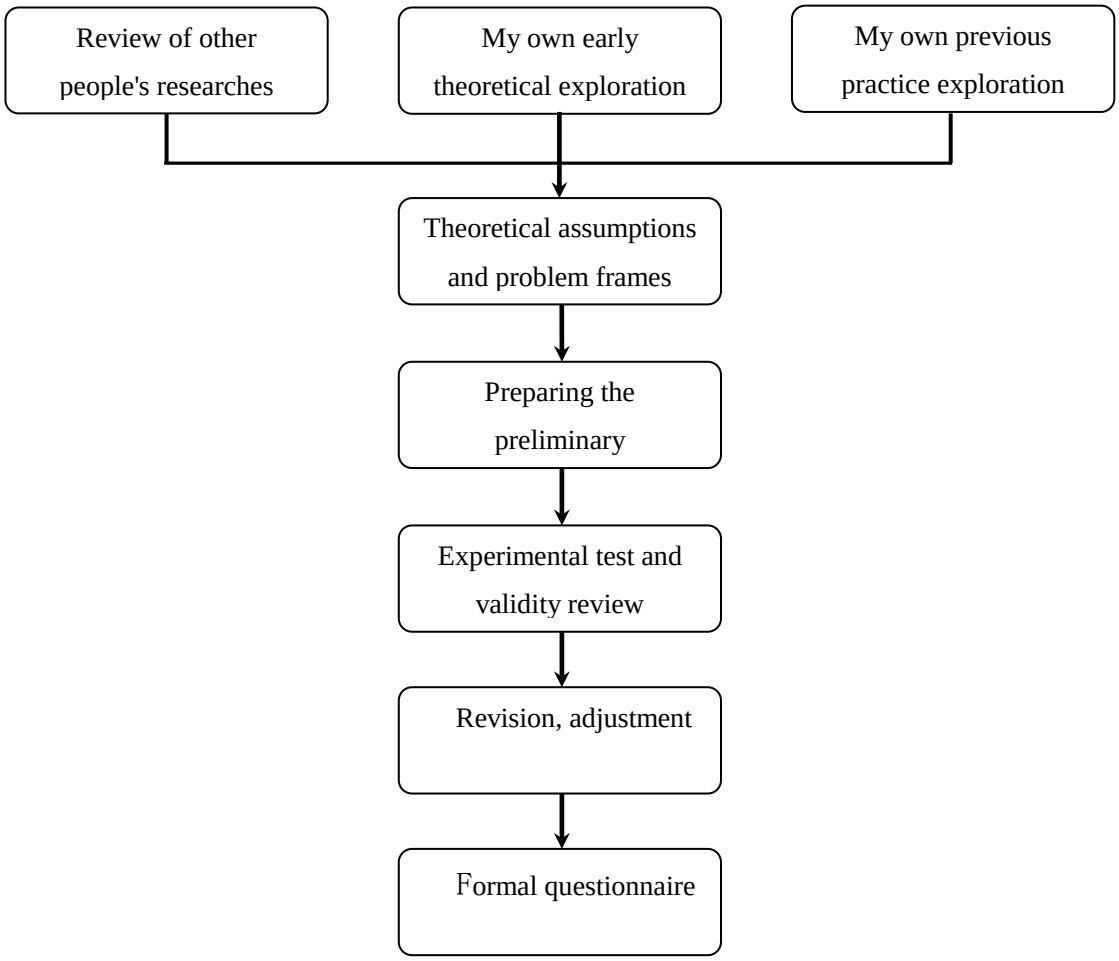



Figure 4-1 Development flow chart of the questionnaire

### 4.2.1 Preparation

As the Figure shown above, the preparation of the questionnaire consists of three aspects: systematically combs the theories of other scholars on general education curriculum and teaching, ecologism, special education curriculum, thinking method, action research, questionnaire compilation, etc.; collates, summarizes and sums up the related theoretical exploration results of the ecologicalism curriculum of intellectual disability education in my early stage; collates, summarizes and sums up the relevant practical exploration results of mine and my partners' in the early stage.

### 4.2.2 Constructing the theoretical hypothesis and problem framework

Based on the existing research results and my previous theoretical thinking and practical exploration, with ecology as the core theoretical foundation, a theoretical model for the operation of the class-based environment ecological analysis

curriculum is initially constructed. Based on this model, the following question framework is set up for the questionnaire:

Basic information of teachers and their schools: containing two parts, "Basic information of teachers" includes gender, teaching age, age, educational background, professional background: "Basic information of schools" includes the information set up by the school history, the history of the establishment of the ministry (classes)of intellectual disability education, the regional distribution of the nature of the school location, the existence form of special schools (classes), and the types of retardation for students.

Teacher's personal courses and teaching profile: including the tasks undertaken, daily workloads, the main undertaken courses, the mastery of theoretical knowledge, and the main situation of course design and implementation.

Overview of the curriculum and teaching of the school's intellectual disability department: including curriculum setting, seminars, development and use of teaching materials, and implementation status of ecologism courses.

Teachers' personal understanding and needs of the eco-courses of intellectual disability education: including the understanding of the importance and current status of the eco-courses, the understanding of the meaning and use of learning phase, the relationship between the ecological courses and other courses, the theoretical basis and implementation model of the ecologism curriculum, a series of processes of ecologism curriculum from diagnosis and evaluation to goal formulation to design and implementation of the teaching activity.

### 4.2.3 Preparation of initial questionnaires

The theoretical hypothesis and question system of the previous steps are direct guidance to further formulate specific questions and ultimately form the initial test questionnaire. Because the development of intellectual disability education's environment ecological analysis curriculum in mainland China is still very immature, teachers' understanding of many issues is difficult to predict. Therefore, this questionnaire uses a combination form of closed single items and multiple choices, and open questions question presentation.

### 4.2.4 Experimental test and validity review

Sixty-two beginning teachers in intellectual disability education in 10 provinces were selected and tested through the preliminary questionnaire. At the same time, “expert evaluation” method was used to examine the validity of the questionnaire: there were a total of 46 evaluation experts, including 5 academics on curriculum and teaching theory, 26 senior teachers and 15 teaching management personnel in special education schools. The basic design of the expert review was to set the four options of "reserve", "delete", "adjust" and "add" after the questionnaire’s title, guidance, filling instructions and each item. Then each reviewer made judging, and finally comprehensively evaluated the "content validity", "structural validity" and "overall validity" of the questionnaire, the results are as follows:

Table 4-1 Overall validity of the questionnaire

| Grades / Dimensions | Very high | High | Normal | Not so high | Not high |
|---|---|---|---|---|---|
| Content validity | 47.8% | 50% | 2.2% | 0 | 0 |
| Structural validity | 58.7% | 30.4% | 10.9% | 0 | 0 |
| Overall validity | 47.8% | 50% | 2.2% | 0 | 0 |

Overall, the reviewing experts gave a high evaluation of the content, structure and overall validity of the questionnaire.

### 4.2.5 Revise, adjust, and determine the formal questionnaire

Taking the research purpose and core theories as the basic guidance, comprehensively weighing the results of the test and validity review, using the specific methods of "reservation", "deletion", "adjustment", and "addition", each part of the questionnaire was carried out one by one. After revising and asking individual experts to review and confirm again, we finally got a formal questionnaire.

## 4.3 Objects of the investigation

According to the "purposive sampling" in "non-probability sampling", 180 beginning teachers of intellectual disability education in 12 provinces in mainland China were selected as the participants of the questionnaire survey. 160 questionnaires were recovered, of which 150 were valid. The recovery rate of the

questionnaire was 88.9%, and the effective rate was 93.8%. The basic information of the individuals and schools surveyed is shown in the following table:

Table 4-2 Basic personal information of teachers

| Items | Contents | Number of people（n） | Percentage（%） |
|---|---|---|---|
| Sex | Male | 20 | 13.3 |
| | Female | 130 | 86.7 |
| Seniority in intellectual disability education | ≤1year | 36 | 24 |
| | 1-2 years | 50 | 33.3 |
| | 2-3 years | 26 | 17.3 |
| | 3-4 years | 15 | 10 |
| | 4-5 years | 23 | 15.4 |
| Age | ≤25 years | 80 | 53.3 |
| | 26-30 years | 46 | 30.7 |
| | 31-35 years | 14 | 9.3 |
| | ≥36 years | 10 | 6.7 |
| Educational background | College degree | 36 | 24 |
| | Bachelor | 110 | 73.3 |
| | Master | 4 | 2.7 |
| Professional background | Special education or educational rehabilitation | 119 | 79.3 |
| | General pedagogy or psychology | 18 | 12 |
| | Arts or Sports | 3 | 2 |
| | Others | 10 | 6.7 |

As shown in the table above, in this survey the mainly respondents are female teachers, accounting for 86.7%. The teaching age of intellectual disability education is mainly within 3 years, accounting for 74.6%. Those aged 25 and under are the most, accounting for 53.3%. The most people with a bachelor's degree, accounting for 73.3%. The professional background is mainly special education or education and rehabilitation, accounting for 79.3%. This information is basically consistent with the overall status of the initial teachers of intellectual disability education in mainland China.

Table 4-3 Basic information of teachers' schools

| Items | Contents | Number of people (n) | Percentage (%) |
|---|---|---|---|
| History | ≤3 years | 5 | 3.3 |
| | 4-6 years | 9 | 6 |
| | 7-10 years | 36 | 24 |
| | ≥11 years | 100 | 66.7 |
| History of the intellectual disability education | ≤3 years | 10 | 6.7 |
| | 4-6 years | 32 | 21.3 |
| | 7-10 years | 57 | 38 |
| | ≥11 years | 51 | 34 |
| Distribution of administrative areas | Village or town | 27 | 18 |
| | District, county or county-level city | 76 | 50.7 |
| | City | 44 | 29.3 |
| | Provincial capital city | 3 | 2 |
| School (class) form | Independent | 143 | 95.3 |
| | Independent system attached to an ordinary primary or secondary school | 4 | 2.7 |
| | Belonged to an ordinary primary or secondary school | 3 | 2 |
| Numbers of students' disability categories※ | Two categories | 9 | 6 |
| | Three categories | 7 | 4.7 |
| | Four categories | 12 | 8 |
| | Five categories | 17 | 11.3 |
| | Six category and above | 105 | 70 |

※Alternative types of disabilities: A. Intellectual disability B. Autism C. Learning disorder D. Deaf E. Cerebral palsy F. Blindness G. Language disability H. Limb disorders I. Others

As shown in the table above, 66.7% of the schools where the teachers surveyed have an establishment history of more than or equal to 11 years, but the establishment history of the intellectual disability education departments (classes) of these schools more than or equal to 11 years are account for only 34%. It reflects the fact that in the special education system of mainland China, the history of the development of intellectual disability education is later than that of blind education or deaf education. The relatively short history of education means that the curriculum and teaching experience are relatively insufficient, which will indirectly affect the characteristics of environment ecological analysis curriculum. Judging from the distribution of the administrative regions where the schools are located in,

50.7% of the schools are located in districts, counties or county-level cities, and only 2% are located in provincial capital cities. This is generally consistent with the overall spatial distribution of special education schools in mainland China and can reflect the general situation in most schools. In addition, 95.3% of teachers come from independent special education schools, and the majority of schools have six or more categories of student disabilities, and the diversity of student disabilities is also a great challenge to curriculum design and implementation.

## 4.4 Results of the investigation

### 4.4.1 The general situation of teachers' curriculum and teaching

The present multi-characteristics of teacher's individual curriculum and teaching is the important background of their curriculum design and implementation.

#### 4.4.1.1 Numbers of tasks undertaken and weekly accountable workloads

In intellectual disability education schools or classes the main tasks include subject teaching, class teacher's work, school administrative affairs, off-campus social services, and other temporary and auxiliary work in Mainland China. Among them, subject teaching is the easiest to clearly calculate the workloads. It can be found from Figure 4-2 that 47.3% of teachers have undertaken only one of these tasks, and the main task is to only undertake subject teaching.

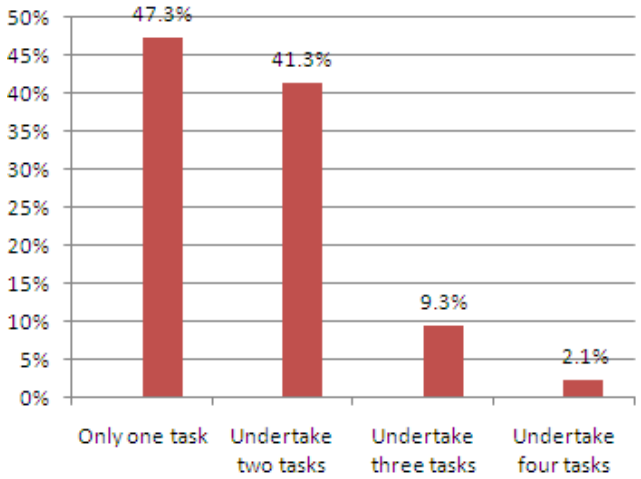



Figure 4-2 Numbers of work tasks undertaken by teachers

Figure 4-3 shows that in terms of the amount of work that can be clearly accounted for each week, only 8.7 percent of teachers are less than 10 hours, 82.6

percent of teachers are 11-20 hours, and no teachers are more than or equal to 31 hours, It seems to indicate that the workload of teachers is generally small. However, the statistics in Figure 4-2 show that the teachers who undertake 2-4 jobs total 52.7%. By comprehensively weighing the nature of different tasks and the time requirements, it can be inferred that at least half of the beginning teachers have a lot of work per week used in other activities than courses and teaching, and it is difficult to make clear calculations. This is obviously an unfavorable factor for the design and implementation of teachers' teaching activities.

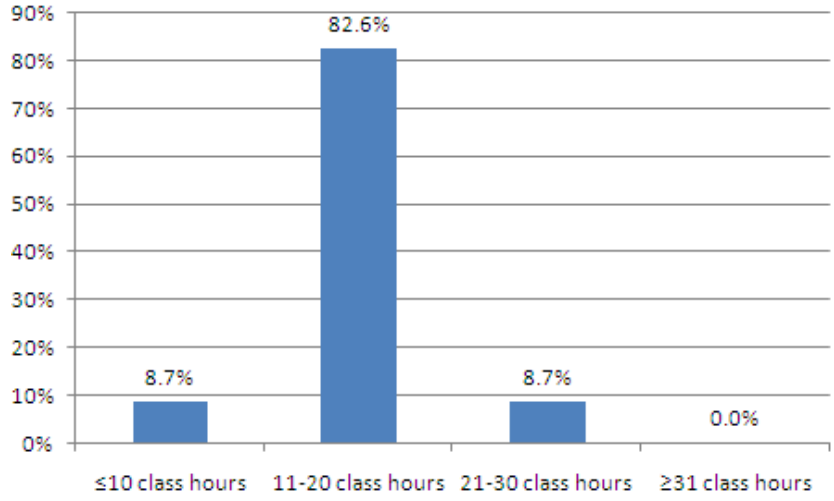



Figure 4-3 teachers' workloads that can clearly account for each week

#### 4.4.1.2 Teaching courses and other educational activities that are often involved

The curriculum of intellectual disability education in mainland China consists of national curriculum, local curriculum and school-based curriculum. The national curriculum includes seven general courses: life language, life mathematics, life adaptation, labor skills, singing and dancing, painting and handwork, sports and health care, and five selective courses: information technology, rehabilitation training, second language, art leisure, school-based courses. These courses are the basic reference for the design of local curriculum and school-based curriculum, and also the basic guidance for the school curriculum. In terms of curriculum commitment from Figure 4-4, 56.4% of teachers undertake 1-2 courses, 31.5% of teachers undertake 3-4 courses, but 12.1% of teachers undertake more than 5 courses. In addition to the courses above, some teachers also undertake class meetings, life safety; communication and communication; obedience to interaction; picture book reading

and other courses. This information reflects the great differences in teacher allocation, curriculum settings, teacher-student ratio, etc. between different schools. If the number of teaching subjects is too large, the basic teaching quality is difficult to guarantee, of course, it is even more difficult to conduct any course experiment.

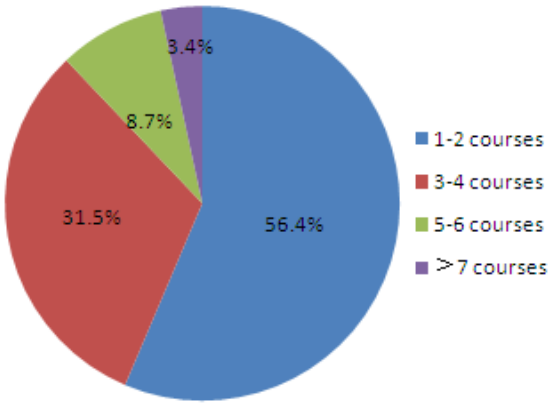



Figure 4-4 Numbers of courses undertaken by teachers

In addition to basic subject teaching, intellectual disability education teachers in mainland China often host or participate in other forms of educational teaching activities, such as: on-campus teaching and research activities, "home-school" or "class-school" cooperation activities, home-teaching services, community disability assistance activities, off-campus training, communication, and further training ... As shown in Figure 4-5, up to 54.7% of teachers are required to participate in at least 1-2 other educational activities and 35.3% of teachers participate in 3-4. The number of activities in which 10 percent of teachers regularly participate is 5-6. This also objectively reflects the fact that there are many extracurricular activities for teachers.

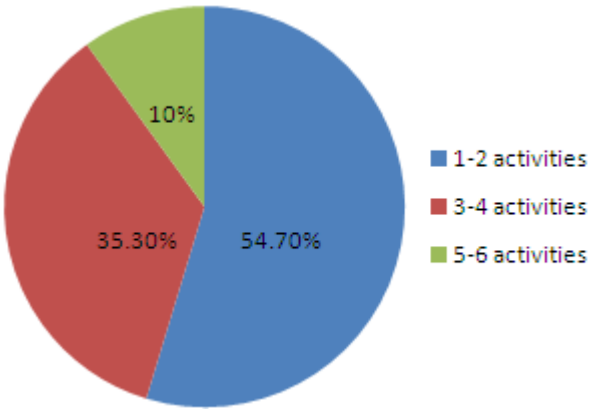



Figure 4-5 Numbers of other educational activities in which teachers frequently participate

#### 4.4.1.3 Main sources of theoretical knowledge or technology related to curriculum and teaching

The relevant theoretical knowledge or technology of curriculum and teaching is one of the core foundations of any curriculum experiment. There are five main sources: pre-service education, post-service school-based study, post-service self-study, post-service education for academic degree, post-service training and others. As shown in Figure 4-6, the survey results show that 23.3 percent of teachers have only one sources of theoretical knowledge or technology related to teaching; 32 per cent have two sources; 24.7 percent have three sources; 14.7 percent have four sources; and only 5.3 percent have all five sources.

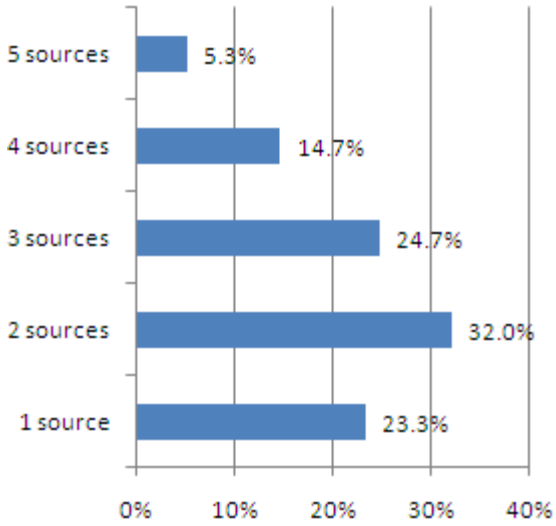



Figure 4-6 Numbers of major sources of theoretical knowledge or technology related to teacher's curriculum and teaching

As shown in Figure 4-7, among the teachers surveyed, up to 82.7 percent of the most important sources of theories or techniques related to their own curricula come from pre-vocational education; 11.3 percent came from school-based studies; followed by 4.7 percent from self-study; and only 1.4 percent from academic study and off-campus training. On one hand it reflects that the teaching and working experience of beginning teachers in education is still very limited, so the main knowledge or technology accumulation also comes from pre-service education. On the other hand, the fact that the proportion of school-based training is larger than that of self-study also shows to some extent that after entering the post, the learning of teachers' curriculum and teaching related knowledge or technology is mainly

dominated by the environment, and the consciousness and ability of self-reflection and self-learning need to be strengthened.

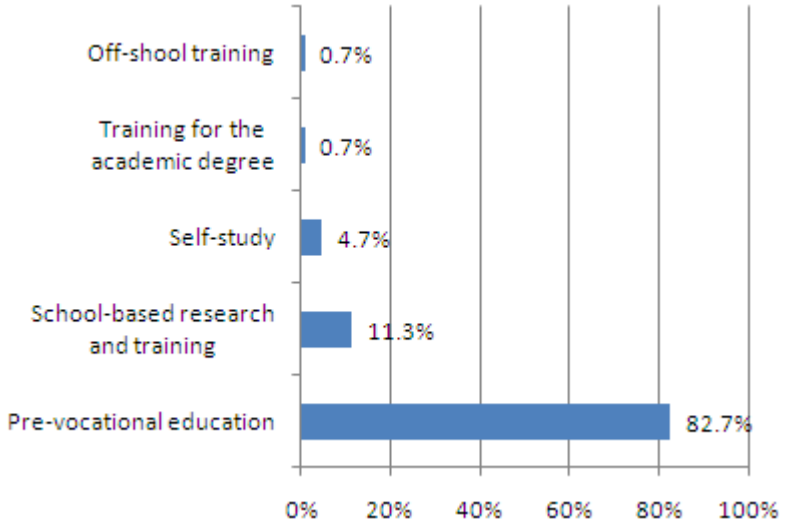



Figure 4-7 Main sources of theoretical knowledge or techniques related to teacher curriculum and teaching

#### 4.4.1.4 Characteristics of teachers' current curriculum and teaching theory

At present, the related curriculum and teaching knowledge of teachers in intellectual disability education in mainland China mainly consist of the following aspects: general curriculum and teaching theory; general curriculum and teaching theory in special education; curriculum and teaching theory of a subject or special field in special education; curriculum and teaching theory in educational rehabilitation; curriculum and teaching theory in other disciplines or fields represented by music, fine arts, physical education, etc. The survey found that 69.3% of teachers' curriculum and teaching theory knowledge composition is compound. Its main composition is as follows:

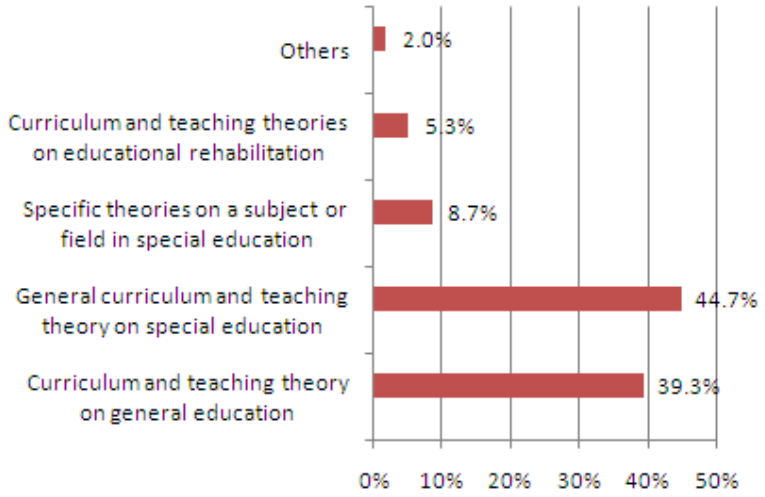



Figure 4-8 Principal component of teacher's curriculum and teaching theory

From the picture above, we can find that 44.7% of teachers' main component about curriculum and teaching theory is the general curriculum and teaching theory on special education. In addition to the special fields, 53.4% of teachers' most important component on curriculum and teaching theory is about special education curriculum and teaching. After the establishment of educational rehabilitation major in 2013, educational rehabilitation curriculum and teaching theory gradually developed. Therefore, it constitutes the most important component of 5.3% of teachers' knowledge about curriculum and teaching theory.

#### 4.4.1.5. Current curriculum and teaching resources that have been developed and used over time

All kinds of curriculum and teaching resources are one of the basic guarantees for the smooth development of education and teaching. In the field of intellectual disability education in mainland China, it mainly includes six kinds: teachers and students resources, teaching aids resources, parents resources, community resources, network information resources, other social or natural resources. The survey found that for 80% of teachers, the resources of teachers and students inside school are the most important teaching resources. 13.3% of teachers considered teaching aids in schools the most important. 4% of teachers consider network resources the most important. 0.6% of teachers considered that parents or community resources are the most important. However, the vast majority of teachers are comprehensive in the development and utilization of teaching resources, as shown in the following table:

Table 4-4 Distribution of the number of categories for the exploitation and utilization of teachers' teaching resources

| Number of teaching resources | Number of people（n） | Percentage（%） |
|---|---|---|
| 1 category | 31 | 20.7 |
| 2 categories | 46 | 30.7 |
| 3 categories | 44 | 29.3 |
| 4 categories | 16 | 10.7 |
| 5 categories | 9 | 6.0 |
| 6 categories | 4 | 2.6 |

It can be seen from the table above that 80.7% of teachers develop and utilize teaching resources in three categories and below, and only 19.3% of teachers develop and utilize four types and above. The design and implementation of environment ecological analysis curriculum in intellectual disability education involves all the six kinds of resources, but the survey results have shown that the number of teaching resources actually developed and utilized by teachers is small, which also indicates that the design and implementation of such curriculum will be difficult.

## 4.4.2 Curriculum and teaching profile of teacher's school (class)

The multifaceted status of the curriculum and teaching in the intellectual disability education department (class) of the school where the teacher located is an important background and basic support for his teaching, which often has an important impact on the motivation, methods, content, and processes of curriculum design and implementation.

### 4.4.2.1 Overview of course setting

As mentioned above (see 4.4.1.2), the national curriculum is authoritative and compulsory in the curriculum system of intellectual disability education in mainland China, so the curriculum of each school is directly or indirectly included in the various subjects of it. In addition, individual schools offer school-based courses in cooking, handwork, acting, life and safety, moral character, class activities, calligraphy, gardening, pre-service preparation, picture book reading, etc.

### 4.4.2.2 Frequency of discussion on issues related to curriculum and teaching

The good development of curriculum and teaching cannot be separated from teachers' personal exploration, extraction, summary and reflection of problems, but also needs collective communication and discussion, in which the frequency of discussion is an important indicator to reflect its quality. In the survey, the frequency

of discussions on the issues related to the curriculum and teaching in the intellectual disability education department (class) of the teacher's school shows the following characteristics:

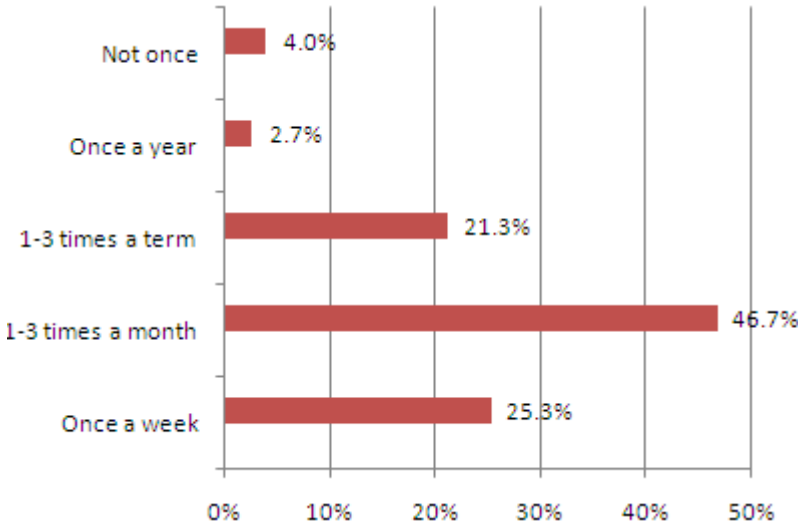



Figure 4-9 Discussion frequency of school curriculum and teaching related issues

From the figure above, 46.7% of teachers' schools conduct seminars 1-3 times a month. 4% of teachers' schools don't have any seminars. Only in 25.3% of the teachers' schools seminars are conducted once a week. Generally speaking, the amount of discussion on the curriculum or teaching issues in the intellectual disability schools (classes) in mainland China is far from enough. The lack of quantity will also affect the quality of the promotion, and ultimately reflected in the multiple links of curriculum design and implementation.

**4.4.2.3. Main types and ways of developing textbooks**

The types of textbooks and the way of their creation are one of the core issues in the teaching of intellectual disability education. It is an important representation of the school's educational philosophy, educational goals and professional level. There are three main types of teaching materials: national textbook, local textbook and school-based textbook. The survey found that 57.3 % of schools used a single type of teaching material. 40.7% of schools use two or more types. And 2% of schools don't have clear textbooks, and the curriculum and teaching are loose. For different schools, the main type of curriculum is that 74.7% of schools (classes) are mainly dominated by textbooks issued by the state. 21.3% of the schools are mainly local textbooks. Only 1.3% of schools are mainly self-compiled, as shown below:

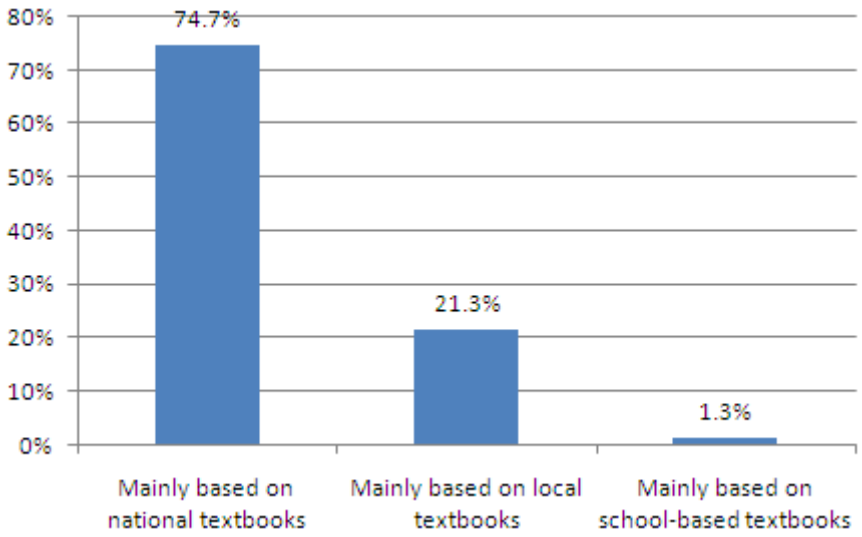



Figure 4-10 Main course types of school (class)

Because of the diversity and complexity of the educational objects and educational situations of intellectual disability education, there is only one set of textbooks promulgated by the state, which is difficult to meet the needs of specific education and teaching scenarios, but schools that adopt it as the main type of textbooks account for the vast majority. Therefore, there is still a long way to go in the reform of curriculum in intellectual disability education in mainland China. Otherwise, the design and implementation of the local and highly contextual curriculum represented by ecological courses will be difficult.

From the way of textbook creation, there are three main ways: following, adapting and self-developing. In relation to the main types of textbooks used, 61.3% of the teachers used a single textbook creation method, and 79.3% of the teachers only take the "following" method. Moreover, 6% of the teachers' schools have no clear and definite ways to create teaching materials, and they are in a state of loose or even blindness. The main method of creating the textbook is shown in the figure below:

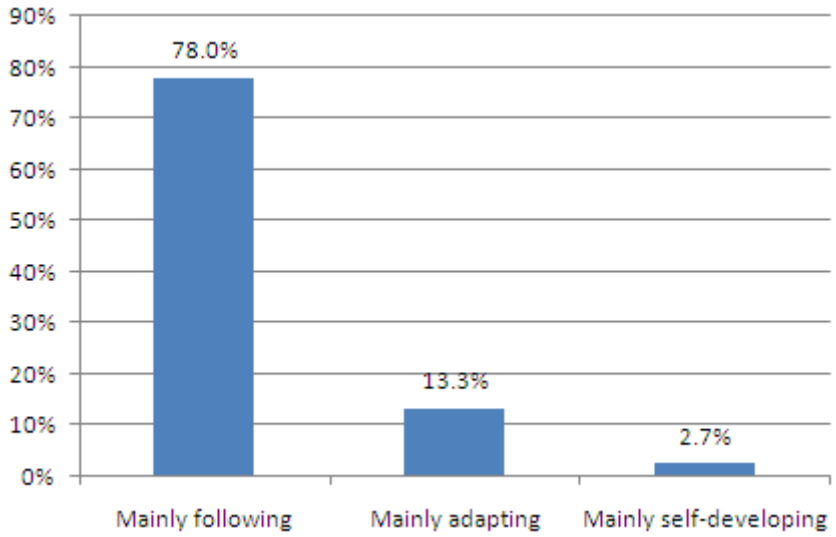



Figure 4-11 Main ways of creating school textbooks

It can be found from the figure above that up to 78% of teachers' schools (classes) use "following" as the main strategy. Only 2.7% of them are mainly self-edited. This situation simply cannot meet the needs of ecologism curriculum for specific situations and individual attention of specific students.

#### 4.4.2.4 Current situation and prospect of school ecologism curriculum

In view of the present situation and future development attitude of ecologism curriculum, we can directly understand the current status and possible future development trend of this kind of curriculum in the school under investigation. It is very important for the subsequent design and implementation of the curriculum. As shown in Table 4-5, the survey found that 50% of teachers' schools have never implemented such curriculum. 9.3% have implemented, but have been interrupted, and there are many reasons for the interruption, for example: stress on the work of teachers; lack of teachers; difficulties in matching subjects; limitations from existing curriculum standards. 40.7% of teachers' schools have been implemented and continue. Their so-called "situational, life-oriented, community-based courses" mainly include: cooking; supermarket shopping; social practice; life adaptation; labor skills; art leisure and so on.

Table 4-5 Implementation of ecologism curriculum in schools in the past

| Implementation status | Number of people（n） | Percentage（%） |
|---|---|---|
| Never implemented | 75 | 50 |
| Interrupted | 14 | 9.3 |
| Continue | 61 | 40.7 |

Looking forward to the future implementation of the ecologism curriculum, as shown in Table 4-6, 25.3% of teachers think that the school will only advocate in concept, but will not really implement. 70.7% of teachers believe that the school will both advocate on the concept and will actually implement. And 4% of teachers think schools don't pay any attention to such curriculum, possible reasons are: collective management; poor coordination of parents; far away from the city; not close contact with parents; vehicles, dangerous on the way; out of touch with real life; not yet independent, the school don't pay attention; teachers are insufficient; lack of this concept and resources are limited.

Table 4-6 Outlooks on the future implementation of ecologism curriculum in schools

| Future implementation prospects | Number of people（n） | Percentage（%） |
|---|---|---|
| Conceptually advocated and will implement | 38 | 25.3 |
| Conceptually advocated but won’t implement | 106 | 70.7 |
| Will not pay attention at all | 6 | 4 |

### 4.4.3 Teachers' understanding and demand for ecologism curriculum

On the basis of a survey about the curriculum and teaching fundamentals of the teachers and their schools or classes, further in-depth analysis of the series of links in the design and implementation of this curriculum can provide richer background information for the course operation and enhance the suitability and scientificity of the curriculum development.

#### 4.4.3.1 Understanding about the importance and implementation status of ecologism curriculum

As shown in Table 4-7, 82% of teachers think that the ecological curriculum is "very important", 15.3% of teachers think it is "Important", 2.7% of teachers think it is "Normal", ones who think it is "Not so important" or "Not important at all" is zero. It shows that from the conceptual level, all the teachers don’t deny the importance of the ecologism curriculum.

Table 4-7 Teachers' awareness of the importance of ecologism curriculum

| Importance | Number of people（n） | Percentage（%） |
|---|---|---|
| Very important | 123 | 82 |
| Important | 23 | 15.3 |
| Normal | 4 | 2.7 |
| Not so important | 0 | 0 |
| Not important at all | 0 | 0 |

Judging from the current status of the implementation of the ecologism curriculum in the schools' intellectual disability departments (classes), as shown in Table 4-8, 71.4% of teachers think it’s "Normal" and above. 28.6% of teachers think "Not so good" or "bad". From the current situation of ecologism curriculum implementation in teachers’ classes, as shown in Table 4-9, teachers who think it’s "Normal" and above account for 68%. 32% of teachers think it’s "Not so good" or " bad". In general, teachers' evaluation of the current situation of school and class ecologicalism curriculum implementation is quite consistent.

Table 4-8 Implementation status of school ecologism curriculum

| Implementation status | Number of people（n） | Percentage（%） |
|---|---|---|
| Very good | 18 | 12 |
| Good | 34 | 22.7 |
| Normal | 55 | 36.7 |
| Not so good | 36 | 24 |
| Bad | 7 | 4.6 |

Table 4-9 Implementation status of class ecologism curriculum

| Implementation status | Number of people（n） | Percentage（%） |
|---|---|---|
| Very good | 9 | 6 |
| Good | 38 | 25.3 |
| Normal | 55 | 36.7 |
| Not so good | 45 | 30 |
| Bad | 3 | 2 |

As shown in Table 4-10, up to 94.7 teachers have eco-curricular related concepts. However, from the actual implementation situation, the total number of non-implementers is 32.6%, 61.4% of teachers only partially implement, and only 6% of teachers themselves are considered fully implement.

Table 4-10 Implementation status of individual ecologism curriculum

| Implementation status | Number of people（n） | Percentage（%） |
|---|---|---|
| No relevant ideas, not implemented | 8 | 5.3 |
| Have relevant ideas, not implemented | 41 | 27.3 |
| Have relevant ideas, partly implemented | 92 | 61.4 |
| Have relevant ideas, fully implement | 9 | 6 |

#### 4.4.3.2 The main features and appropriate learning stages of the ecologism curriculum

From the point of view of the nature and characteristics of the curriculum, the main features of the ecologism curriculum may be as follows: a curriculum concept, a curriculum practice, a specific course type, a curriculum model, a series of courses synthesis. As shown in Figure 4-12, the survey find that the main features of the ecologism curriculum as understood by the beginning teachers are as follows:

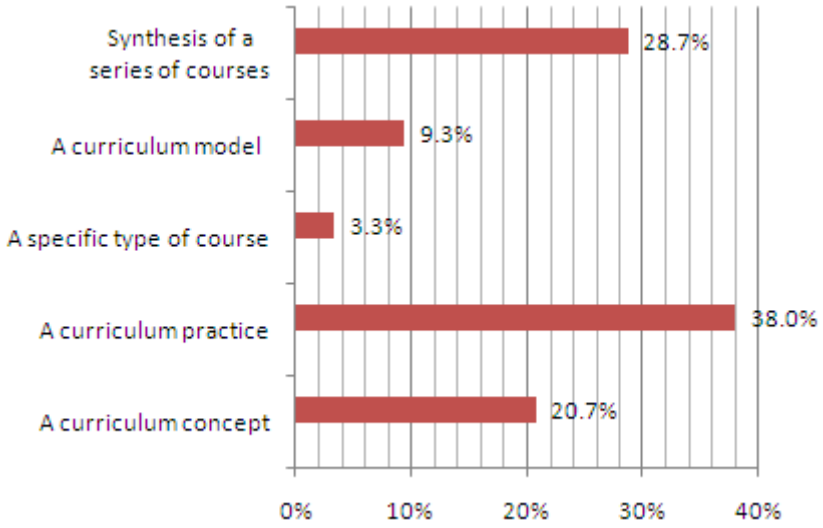



Figure 4-12 The main features of the ecologism curriculum

As shown in Figure 4-12, 38% of teachers believe that ecologism curriculum is mainly a course practice, 28.7% of teachers regard it as the synthesis of a series of courses, and 20.7% of teachers regard it as a course concept. These three understandings represent the most important ones, accounting for 87.4%.

The possible learning stages of ecologism curriculum in mainland China include: Pre-school, first half of primary school, second half of primary school, junior high school, general high or vocational high school, adult education, all school

sections. The appropriate learning stages of the ecologism curriculum that understood by beginning teachers are shown in Figure 4-13 below:

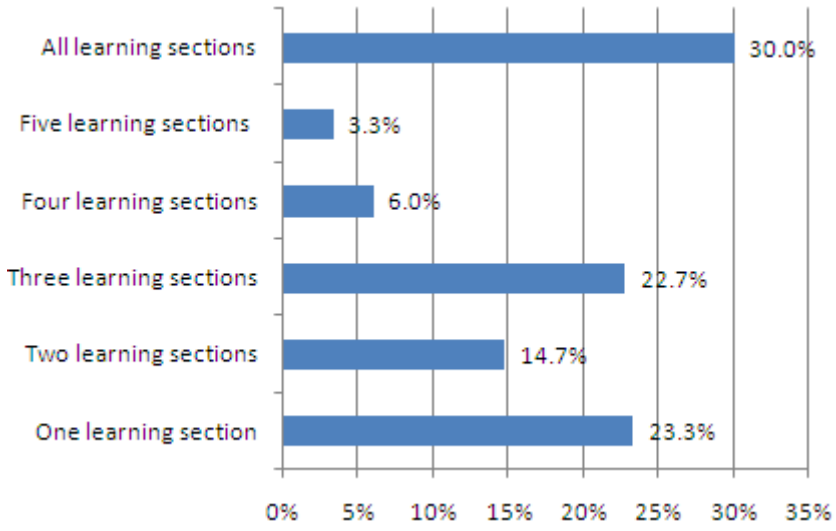



Figure 4-13 Applicable segments of the ecologism curriculum

From the figure above, 30% of teachers believe that the ecologism curriculum is applies to all of the learning stages above. However, 23% of teachers still think it only applies to one learning stage, and other teachers also have different understandings. This status reflects the differences of teachers' understanding about the connotation of ecologism curriculum, and different teaching conditions between schools.

#### 4.4.3.3 Comparison of the connotation of ecologism curriculum with other curricula

An accurate understanding of the connotation of ecologism curriculum is the logical starting point for designing and implementing. In the field of intellectual disability education in mainland China, subject curriculum, developmental curriculum and adaptive functional education curriculum are well-known and frequently operated. Therefore, comparing the similar or different connotation between the ecologism curriculum and these three kinds of curriculums is more helpful for teachers to understand the connotation of ecological curriculum. The results of the survey are as follows:

Table 4-11 Comparison of the connotation of ecologism curriculum and subject curriculum

| Consistency | Number of people（n） | Percentage（%） |
|---|---|---|
| Completely the same | 5 | 3.3 |
| Mostly the same | 55 | 36.7 |
| Basically the same | 64 | 42.7 |
| Few the same | 26 | 17.3 |
| Uncorrelated | 0 | 0 |

From the table above, it can be found that 3.3% of the teachers think that the two are completely the same. They obviously misunderstand the important differences of the connotation and ideological background between them. As many as 79.4% of teachers believe that the connotation of them "Mostly the same" or "Basically the same", this may mean that teachers use the logic, design, and implementation of their best known subject curriculums to understand the ecologism curriculum. If so, of course, it is not conducive to the full development of such curriculum. All the teachers think that the connotation of the two is consistent.

Table 4-12 Comparison of the connotation of ecologism curriculum and developmental curriculum

| Consistency | Number of people（n） | Percentage（%） |
|---|---|---|
| Completely the same | 13 | 8.7 |
| Mostly the same | 65 | 43.3 |
| Basically the same | 66 | 44 |
| Few the same | 5 | 3.3 |
| Uncorrelated | 1 | 0.7 |

As shown in the table above, the proportion that ecologicalism curriculum and developmental curriculum connotation "Completely the same" has further increased to 8.7%, and there is only one person thinks they are "Uncorrelated", these are all misunderstandings about the connotation of the two types of curriculums. 87.3% of teachers think that the connotation between the two is "Mostly the same" or "Basically the same", this view recognizes the similarities between the two connotations, but also ignores the differences between each other.

Table 4-13 Comparison of the connotation of ecologism Curriculum and adaptive function Curriculum

| Consistency | Number of people（n） | Percentage（%） |
|---|---|---|
| Completely the same | 22 | 14.7 |
| Mostly the same | 74 | 49.3 |
| Basically the same | 45 | 30 |
| Few the same | 9 | 6 |
| Uncorrelated | 0 | 0 |

As shown in the table 4-13, the proportion that the connotation of ecologicalism curriculum and adaptive function education curriculum is "completely the same" exceeds that of the first two curriculums, reaching 14.7%. There were 79.3% of teachers who think they were "Mostly the same" or "Basically the same". Although these understandings further approach the nature of the ecologism curriculum, they are also partial recognition.

The survey results presented in the three tables above generally reflect that teachers of intellectual disability education in mainland China still have a large deviation in their understanding of the connotation of ecologism curriculum. Many of the "ecological courses" (see tables 4-8 to 4-10) that the schools, classes, or teachers mentioned above personally believe have been partially implemented or even fully implemented, are likely to also operate in vague concepts.

**4.4.3.4 Theoretical basis and development model of ecologism curriculum**

The theoretical basis and development mode of ecologism curriculum are two core issues in the design and implementation of this kind of curriculum. On the theoretical basis, I have six presuppositions: ecologism theory, life education theory, situation education theory, individualized education and teaching theory, general thinking ability development theory, others, the results of the survey are shown in Figure 4-14 and Figure 4-15 below:

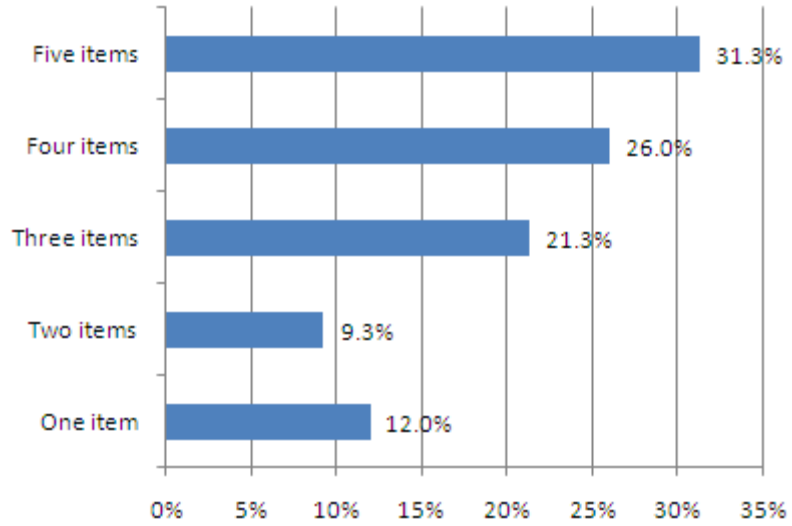



Figure 4-14 The number of theoretical source items of the ecologism curriculum

As shown above, in the six possible theoretical basis enumerated , 31.3% of teachers believe that the theoretical basis of the ecologism curriculum included five items of them, 26% of teachers think that four of them are included, 21.3% believe three of them are included, but 12% think there is only one theoretical basis.

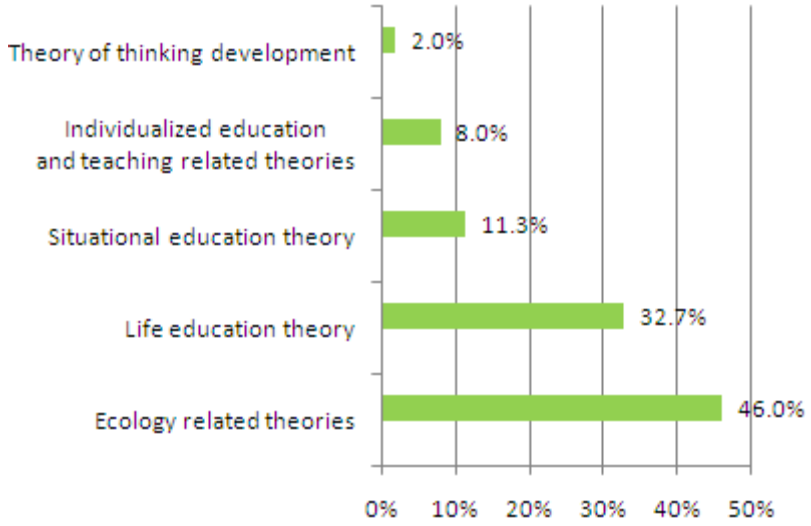



Figure 4-15 The main theoretical basis of the ecologism curriculum

As shown above, 46% of teachers believe that the main theoretical basis of the ecologism curriculum is ecology related theory, followed by life education theory (32.7%), then the situational education theory (11.3%), individualized education and teaching related theory (8%), and finally the thinking ability development theory (2%).

In general, teachers have different understanding about the theoretical basis of ecologism curriculum, but it is generally believed that the relevant theories of ecology

and life education are the most important, and the theoretical basis is generally considered to be pluralistic.

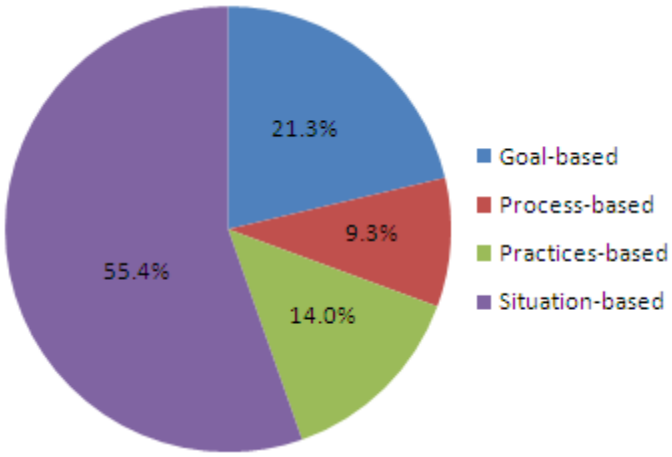



Figure 4-16 The development model of the ecologism curriculum

As shown above, more than half of the teachers (55.4%) think that the ecologism curriculum should be situation-oriented, the target-oriented is the second (21.3%), and the practice-oriented is following (14%), and only 9.3% of the teachers think that process-oriented should be basic. On the one hand, it reflects that at least on the conceptual level, most teachers realize the importance of the situation to the ecological curriculum; on the other hand, the influence of traditional goal-based teaching is also deep, and teachers are relatively unfamiliar with the process model and practice model.

#### 4.4.3.5 Objects of diagnostic evaluation of ecologism curriculum

Ecologism curriculum involves multiple and complex ecological factors: teachers, students, teaching materials, classes, schools, families, communities, natural environment... The survey finds that the number of diagnostic evaluation objects of the ecologism curriculum understood by the beginning teachers in intellectual disability education showed the following characteristics:

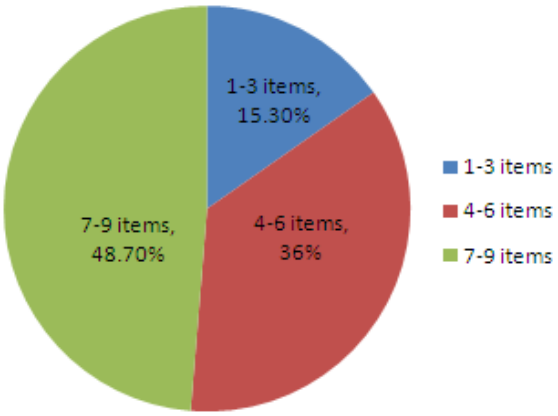



Figure 4-17 The number of items for the diagnostic evaluation of the ecologism curriculum

Among the alternative assessment objects, 48.7% of the teachers consider the assessment items to be 7-9 of them; the selection of 4-6 items is 36%; only 15.3% of the teachers consider only 1-3 items. According to the data distribution, most teachers recognize the diversity of ecological curriculum situational factors, so they choose a large number of evaluation objects.

**4.4.3.6 Main types and sources of the objectives of the ecologism curriculum**

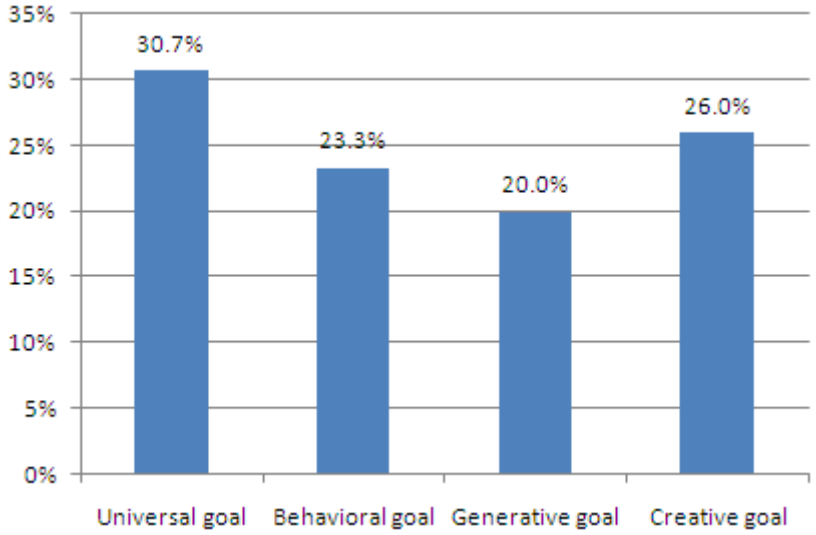



Figure 4-18 The main types of ecologism curriculum objectives

Curriculum objectives can be roughly divided into universal objectives, behavioral objectives, generative objectives and creative objectives (Zhang, 2000). From the survey results, as shown in Figure 4-18, 30.7% of teachers believe that the objectives of ecologism curriculum are mainly universal objectives, followed by creative objectives (26%), behavioral objectives (23.3%), and finally generative objectives (20%). Overall, the data above are evenly distributed. This also reflects that

in the real teaching scene, the curriculum objective composition of ecologism is diversified, and it is often necessary to synthesize the four types of objectives above, and the main type is different in different specific scenarios.

The survey found that 86% of teachers believe that the sources of eco-oriented curriculum objectives are diverse and the most important source is recognized as follows:

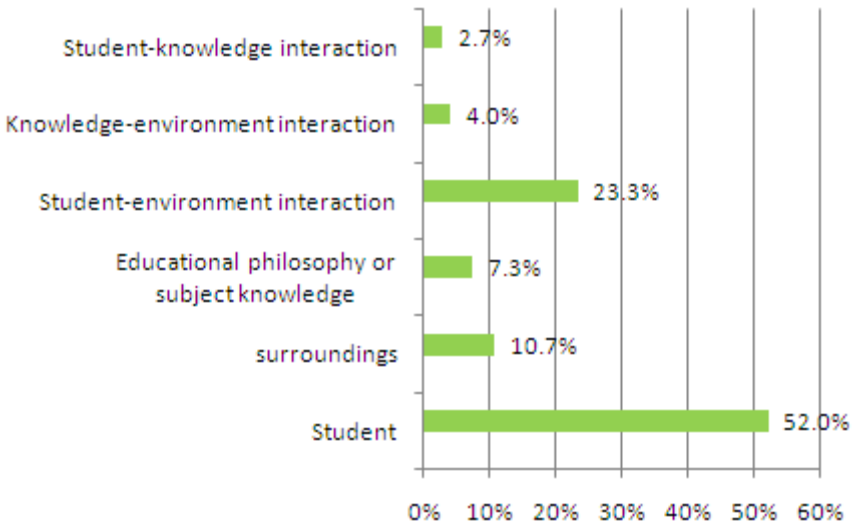



Figure 4-19 The main source of the ecologism curriculum objectives

Most of the teachers (52%) think that "student" are the most important source of eco-oriented curriculum objectives, followed by emphasis on interaction between students and the environment (23.3%), then 10.7% of the teachers take ”surroundings” as the main source . These three views account for 86% of the total. It reflects that teachers attach the importance to the relationship of "students", " environment" and their interaction.

**4.4.3.7 Comparison of the connotation and design ideas of ecological IEP and traditional IEP**

As shown in table 4-14, in terms of connotation and design ideas, ecologism curriculum IEP compared with traditional IEP, 4% of teachers think they are completely the same, and 1.3% of teachers think they are irrelevant. The former view only sees the similarities between the two and ignores the differences of them, while the latter view is opposite. In addition, 94.7% of teachers believe that the two are consistent, but the degree varies from most consistent to a few consistent. This is the

expression of their understanding of the essential characteristics of ecologism curriculum.

Table 4-14 Comparison the conformity of connotation between ecologism curriculum IEP and traditional IEP

| Consistency | Number of people（n） | Percentage（%） |
|---|---|---|
| Completely the same | 6 | 4 |
| Mostly the same | 60 | 40 |
| Basically the same | 55 | 36.7 |
| Few the same | 27 | 18 |
| Uncorrelated | 2 | 1.3 |

The understanding of the connotation of IEP will directly affect its design ideas. Therefore, the difference between the two design ideas revealed in Table 4-15 is similar to the different understanding of connotation above.

Table 4-15 Comparison the conformity of design ideas between ecologism curriculum IEP and traditional IEP

| Consistency | Number of people（n） | Percentage（%） |
|---|---|---|
| Completely the same | 3 | 2 |
| Mostly the same | 58 | 38.7 |
| Basically the same | 65 | 43.3 |
| Few the same | 23 | 15.3 |
| Uncorrelated | 1 | 0.7 |

#### 4.4.3.8 Source of content of the ecologism course

The survey found that 87.3% of teachers believe that the sources of the content of the ecologism curriculum are diverse and that the most important sources are:

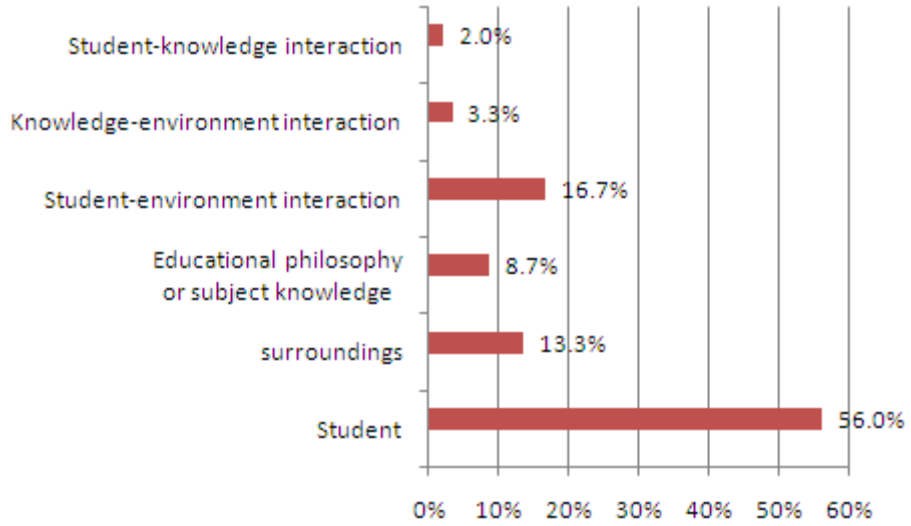



Figure 4-20 The main source of the content of the ecologism curriculum

It can be seen from the figure above that most teachers (56%) believe that “student” are the most important source of the content of ecologicalism curriculum. Secondly, they value the interaction between students and the environment (16.7%). Once again, the environment is the main source, accounting for 13.3%. These three views account for 86% of the total, reflecting the importance teachers attach to "students", "environment" and their interaction in the content of the curriculum. This is highly consistent with the findings revealed in Figure 4-19 on the most important sources of ecologism curriculum objectives.

**4.4.3.9 Teaching mode and teaching organization form of ecologism curriculum**

The common teaching modes of intellectual disability education in mainland China are "subject teaching", "life field teaching", "unit theme teaching" and "activity teaching". As shown in Table 4-16, 44% of teachers believe that ecologism courses are the most suitable for unit theme teaching, followed by life field teaching (36.7%), and only 8.6% of teachers believe that the most suitable subject-based teaching model is the best. This reflects the influence on the understanding of the problems related to the ecologism curriculum of intellectual disability education from the concepts of life-oriented, functionalization, situational teaching and so on. For the definition of the connotation of ecologism curriculum and the different educational environment, then the teaching mode adopted may be different. But from its core characteristics, the most suitable teaching mode of this kind of curriculum must be inclined to the situation, ecology and the whole teaching system.

Table 4-16 Optimal teaching modes for ecologism curriculum

| Teaching model | Number of people（n） | Percentage（%） |
|---|---|---|
| Subject teaching | 13 | 8.6 |
| Teaching in the field of life | 55 | 36.7 |
| Unit theme teaching | 66 | 44 |
| Activity teaching | 16 | 10.7 |

From the point of view of the most suitable form of teaching organization, up to 68.7% of teachers choose the three forms of collective teaching, group teaching or individual teaching, and only 31.3% of teachers think that the comprehensive form should be best. To some extent, it also reflects the current general teaching situation of intellectual disability education in mainland China: The ratio of teachers to students is low, the workload of teachers is large, the collective teaching is the main organization form, and the various forms of teaching organization are difficult to fully coordinate.

Table 4-17 The most appropriate form of teaching organization for ecologism curriculum

| Teaching Organization Form | Number of people（n） | Percentage（%） |
|---|---|---|
| Collective teaching | 18 | 12 |
| Group teaching | 69 | 46 |
| Individual teaching | 16 | 10.7 |
| Comprehensive form | 47 | 31.3 |

#### 4.4.3.10 Teaching environment and teaching methods of ecologism curriculum

The possible teaching environments for ecologism courses are: classrooms, entire campuses, families, communities and other social life scenes. As shown in Figure 4-21, 98.7% of teachers believe that the teaching environment for such courses should be comprehensive and diverse. For the most important teaching environment of ecologism curriculum, 38% of teachers choose the whole campus, 32% of teachers think it is the classroom, while the family, community, social life scene is only 30% in total. In terms of the essential characteristics of the ecologism curriculum, special emphasis is placed on the ecology, pluralism, connection and complexity of the curriculum. Therefore, the "campus" field within the wall is not the best teaching environment for such curriculum.

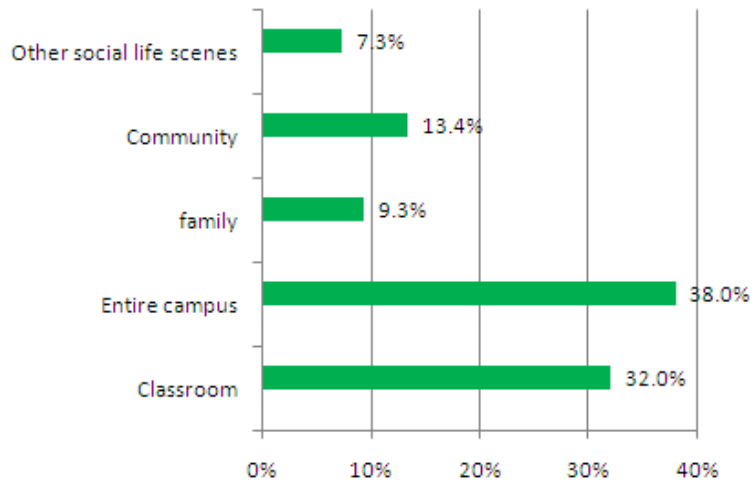



Figure 4-21 The most important teaching environment of the ecologism curriculum

As shown in Figure 4-22, for the most suitable teaching method of ecologism curriculum, 51.4% of teachers think that teachers and students should adopt the method of solving problems together, followed by comprehensive type (30%), and again students' autonomous learning type (11.3%), and only 7.3% of teachers choose teacher prompt as the main type. It can be seen that, at least the concept level, for the implementation of the ecologism curriculum, teachers still strongly agree with the main position of students or teacher-student interaction in teaching.

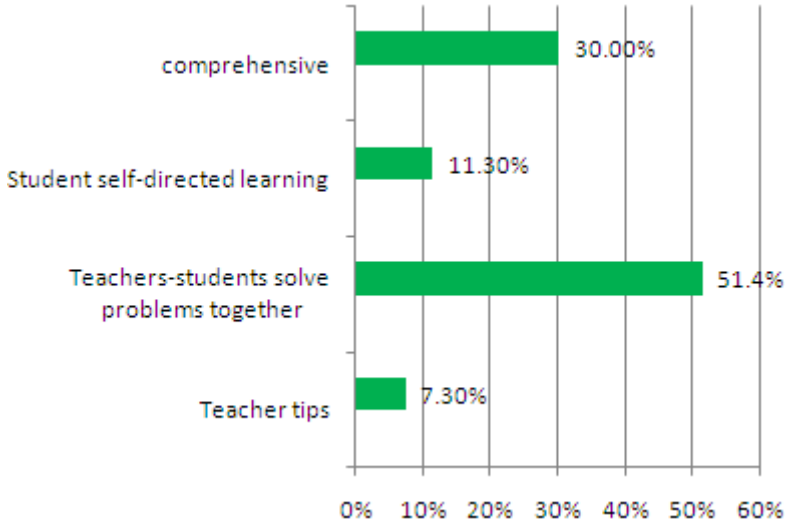



Figure 4-22 The most suitable teaching method for the ecologism curriculum

#### 4.4.3.11 Evaluation objects and model of ecologism curriculum

Similar to the objects of diagnostic evaluation prior to the development of ecologism course, the objects that may be involved in the course summary evaluation stage are also teachers, students, teaching materials, classes, schools, families, communities, natural environment ... The survey finds that only 2% of the beginning teachers think that the evaluation object is only students, 98% of the teachers think that the evaluation object is diversified. The number of items they understand in the ecological curriculum shows the following characteristics:

Table 4-18 Numbers of object items evaluated in ecologism curriculum

| Number of items evaluated | Number of people（n） | Percentage（%） |
|---|---|---|
| 1-3 items | 46 | 30.7 |
| 4-6 items | 59 | 39.3 |
| 7-9 items | 45 | 30 |

Among the alternatives, 30% of teachers consider the evaluation items to be 7-9 of them, 39.3 % select 4-6 items, and only 30.7% considered 1-3 items. From the data distribution, we can see that most teachers recognize the diversity of ecological curriculum situational factors, so they choose a large number of evaluation objects.

Table 4-19 Evaluation model of ecologism curriculum

| Evaluation model | Number of people（n） | Percentage（%） |
|---|---|---|
| Target model | 36 | 24 |
| Appearance model | 60 | 40 |
| Process model | 50 | 33.3 |
| Defense model | 4 | 2.7 |

As shown in the table above, 73.3% of teachers think that the evaluation mode of ecologism curriculum should be the appearance model or process model that attaches importance to the characteristics of process, situation, description, etc., followed by the target model (24%), and only 2.7% of the selection is defense model. This is consistent with the teachers' choice of ecological curriculum development model in "Figure 4.4.3.4".

#### 4.4.3.12 Support needed in the design and implementation of ecologism curriculum

The necessary support for the design and implementation of ecologism curriculum can be analyzed from three angles: school, class and individual teacher. At the school level, the support that may be required are: concept of education and teaching, specific methods and techniques of education, funds, government policies, special education professionals, education and rehabilitation professionals, parents, general social volunteers, local communities and others. The survey finds that 90% of teachers believe that their schools have the most urgent needs for the "concept of education and teaching", " specific methods and techniques of education" and "funds ". The overall number of demands items is shown in the table below:

Table 4-20 Numbers of items required to support the development of school ecologism curriculum

| Number of required support items | Number of people（n） | Percentage（%） |
|---|---|---|
| 1-3 items | 30 | 20 |
| 4-6 items | 62 | 41.3 |
| 7-9 items | 51 | 34 |
| ＞9 items | 7 | 4.7 |

From the table above, up to 80% of teachers think that when design and implement ecological courses in their schools in the future, the number of items required in the listed supporting projects is four or more, of which 4.7% even reach more than nine. This is highly consistent with the situation presented in Table 4-8 on the implementation of the school ecologicalism curriculum.

Table 4-21 Numbers of items required to support the development of class ecologism curriculum

| Number of required support items | Number of people（n） | Percentage（%） |
|---|---|---|
| 1-3 items | 38 | 25.3 |
| 4-6 items | 56 | 37.3 |
| 7-9 items | 35 | 23.4 |
| ＞9 items | 21 | 14 |

The survey finds that 89.3% of teachers think their classes have the most urgent needs for the three items: "the concept of education and teaching", "the specific methods and techniques of education", "the hardware facilities and material security from the school". In addition, the table above shows the number of projects required

in the listed supporting projects when the class designs and implements the ecologism curriculum. Taken together, as many as 74.7% of teachers believe that their classes need four or more items and 14% of them even reach more than nine. This is consistent with the result of "Table 4-9 Class Ecology Curriculum Implementation Status" that revealed up to 68.7% of teachers believe that the implementation of such curriculum in their own class is not so good.

Table 4-22 Numbers of items to support the development of individual ecologism curriculum for teachers

| Number of required support items | Number of people（n） | Percentage（%） |
|---|---|---|
| 1-3 items | 22 | 14.7 |
| 4-6 items | 60 | 40 |
| 7-9 items | 35 | 23.3 |
| ＞9 items | 33 | 22 |

The survey finds that 94% of teachers think they have the most urgent needs for "the concept of education and teaching", "the specific methods and techniques of education", "the hardware facilities and material security from schools and classes". In addition, the table above shows the number of items required in the listed supporting projects when individuals design and implement ecologics courses. Overall, up to 85.3% of teachers think they need four or more items, and 14.7% even reach more than nine items. This also verifies the relevant research results of "Table 4-10 Personal Ecologism course implementation status". On the whole, teachers' personal design and implementation of ecologism curriculum is facing great environmental pressure, which needs many aspects of support before it can be fully implemented.

**4.4.3.13 Other views or suggestions on the design and implementation of the ecologism curriculum**

In addition to the information above, the main comments or suggestions of the teachers on the design and implementation of ecologism curriculum are (excerpt only): The state should popularize the concept of ecological curriculum more deeply, let more special teachers understand and practice deeply, but it is difficult to implement it; the joint efforts of the whole society; the ecological curriculum is integrated into life, and the traditional teaching mode is out; to ensure the basis of ecological curriculum, so that students can truly rely on the curriculum into social life, to adapt to life; the

ecological curriculum emphasizes the organic unity of nature, society and people in the curriculum system. Teachers and students are not only the implementers of the curriculum, but also the developers and designers; in view of the present situation of special education schools in China, the development of ecological courses will be very difficult. Regional policies, funds, teachers' ideas, parents' cooperation, professionals to assist all aspects are problems; it is hoped that the design of ecological curriculum can be more close to the real life of students, and the effect can be achieved in accordance with the requirements of the social background, so that the students can truly integrated into the society; the implementation is very complex, needs the school, the family, the society all aspects' support, needs the promotion unceasingly...

# Chapter 5 The Myth and Possible Understanding of Ecological Curriculum in Education for Children with Intellectual disabilities: The Construction of Curriculum Action Theory

Action research is a research and practice process in which theory and practice are closely integrated. Action and reflection are fully integrated. The guiding concept or theory of action is one of the core elements. Since the basic concepts, design methods, implementation strategies, and other aspects of the ecological curriculum in intellectual disability education in mainland China are far from reaching consensus, it is necessary to make in-depth and detailed analysis and clarification of the main confusion and myths. Based on this, it is possible to better design and implements the Environment ecological analysis curriculum (EEAC) that is one of the specific aspects of the ecological curriculum.

## 5.1 Controversy and determination of the connotation of ecological curriculum

As mentioned above (see "3.2.2.1 Connotation of the Ecological Curriculum"), the relevant concepts of the ecology curriculum in intellectual disability education in mainland China include "Environmental Ecological Assessment Curriculum", "Environmental Ecological Curriculum", "Ecology-oriented Curriculum", "Environment ecological analysis curriculum", "Ecological Curriculum", "Quasi-ecological Curriculum", "Imitation Ecological Curriculum" ...The variety of terms used reflects people's different perspectives and values on the understanding of the connotation and implementation of the ecological curriculum.

### 5.1.1 From biocenology to ecological curriculum in intellectual disability education

In order to accurately understand the connotation of the ecological curriculum, we need to return to the source, and seek clues for understanding from the perspective of "ecology" and its development context as the core guiding ideology and theoretical

basis of such curriculum. The word "Ecology" is derived from the Greek "Oikos" and "Logos". The former means residence and habitat, and the latter means subject and research. Therefore, the original meaning of ecology is to study the science of biological habitat. In 1866, German biologist E.H. Haeckel first defined ecology as the science that studies the relationship between biological organisms and their surroundings. This definition has a groundbreaking and wide-ranging impact, and it is still widely used today. In 1927, British ecologist C. Elton defined ecology as the science that studies the relationship between animals & plants and their behaviors & habits. In 1935, the British ecologist A.G. Tansley introduced the concept of system into ecology and proposed the concept of ecosystem for the first time. He believed that the ecosystem includes both organic complexes and physical factors, and has its own unique structure and function.（Zhang & Li, 2018）Since then, the influence of ecology-related thoughts has gradually surpassed the scope of biology and natural sciences, and has penetrated into a wide range of fields such as philosophy, sociology, and education.

The first to apply the principles and methods of ecology to the study of human social problems was the Chicago School in the United States. In 1921, Parker and Burgess first proposed the concept of "human ecology" in the book "Introduction to Social Sciences" (Park & Brugess, 1921).The formal use of "ecology" in educational research began in 1932 by the American educational scholar Waller, W., who first proposed the concept of "classroom ecology" in his book "Teaching Sociology". In 1966, British scholar Ashby, E. put forward the concept of "higher education ecology" in a comparative study of British, Indian and African universities (Ashby, 1966). Since the 1970s, various studies on educational ecology have gradually flourished, and eventually spread to the fields of curriculum and pedagogy. It can be seen that the "ecological curriculum" in the field of intellectual disability education is deeply affected by the historical development of ecology. In terms of the origin of thought development, it has roughly experienced biological ecology→ human ecology→ social ecology→ educational ecology→ curriculum ecology→ ecological course in intellectual disability education and other ideas transmission process. But no matter how the perspectives evolve and refine, they all uphold the core of ecology, that is, they all adhere to the basic concepts of ecology, such as the system, balance, connection, and development. (Fan, 2000; Wang, 2005)

### 5.1.2 The definition method, connotation and characteristics of ecological curriculum in intellectual disability education

There are roughly three ways to define a course. (Scheffler, 1960) Firstly, descriptive definition, that is, enumerating a representative definition of a concept, and analyzing and judging the characteristics of this definition. This type of definition focuses on stating the phenomenon and external characteristics of the concept, and maintains the value neutrality in concept judgment. Secondly, conventional definition is to use a certain theory as the basis and premise of the definition, to explore the nature of a concept, and to clarify the meaning or function of the concept from the perspective of value analysis. This type of definition builds on the understanding of concepts on the basis of theoretical assumptions with obvious individual or school tendencies. Thirdly, planning definition, that is, explain the meaning of a concept, and predict the results of a concept with a specific meaning in a specific situation. This kind of definition clarifies the function and value of the concept in a general sense with clear goal orientation.

From a lexical point of view, the phrase "ecological curriculum" itself is a partial phrase. The word "ecological" in the front is used to modify and limit the central word "curriculum" in the back. It has defined the most critical characteristics and the most authentic connotations of such curriculum, so the further away from the core characteristics and connotations, the curriculum is farther away from the real "ecological curriculum". Combined with the previous review of the historical background of the development of the ecological curriculum thought and the analysis of the characteristics of different definitions, it is appropriate to adopt a conventional definition in the ecological curriculum in intellectual disability education, so as to faithfully implement its core of "ecologicalism" as the most critical guiding ideology.

Based on the analysis above, this study defines the "ecological curriculum in intellectual disability education" as a curriculum concept which is to observe, think, explain and summarize the phenomena and laws of the ecological curriculum in intellectual disability education on the basis of the ecological worldview, values, ethics, epistemology and methodology, and to carry out curriculum practice with the core idea of ecology. It upholds the ecological ideas of system, holistic, connection, harmony, balance, etc. and it is an educational curriculum model that fully reflects

and uses ecological wisdom. It is both a curriculum concept and a curriculum implementation model.

"Environment ecological analysis curriculum in intellectual disability education" is a specific and insufficient performance type of “ecological curriculum in intellectual disability education”. Under the condition of being faithful to the core ideas of the ecological curriculum, it focuses on the analysis of several curriculum factors and their interaction in the teaching environment system of intellectual disability education, and strives to integrate the rich environmental factors and their relationships into the real teaching process. But overall, it still retains many ideas and operating methods of the goal-oriented curriculum model of modernism.

For the vast number of professionals in intellectual disability education in mainland China, the most familiar and most widely used curriculum is subject curriculum, while for ecological courses; previous survey has shown that they are relatively unfamiliar. Therefore, in comparison with the traditional curriculum represented by the subject curriculum, it can best reflect and understand the multi-faceted features of the ecological curriculum, as shown in the following table:

Table 5-1 The characteristics of ecological curriculum: based on comparison with traditional curriculum

| Curriculum / Characteristics | Traditional curriculum (Represented by subject curriculum) | Ecological curriculum |
|---|---|---|
| Philosophy view | pay attention to scientific, rational and logical methods;<br>scientism, science first;<br>modernism; technical rationality;<br>closed system view; emphasize control;<br>mechanical formalism; linearity, sequence, quantification;<br>process-result, subjective-objective separation ... | Universal connection;<br>postmodernism;<br>process thinking; open system, self-organization;<br>constructivism and empiricism;<br>practical reason and emancipator reason;<br>complex, diverse and unpredictable systems and networks;<br>ecologicalism, humanism ... |
| Knowledge view | learners are bystanders;<br>rational and definite cognition;<br>causal predictability, linear sequence;<br>objective, closed; simplified, | learners are constructors;<br>complex, uncertain, and changeable;<br>practicality; vagueness, chaos;<br>empirical, reflective; relative truth;<br>dynamic, negotiation and creation; |

| | | |
|---|---|---|
| | classified;<br>absolute truth; a copy of reality<br>the certainty of positivism ... | construction of individual and environment ... |
| Education view | universal education law;<br>progressiveness and cumulativeness of improvements;<br>static, linear, sequential;<br>education is a tool ... | the educational significance of contextualization and personalization;<br>complexity and qualitative transformation;<br>reflection, reorganization, interaction;<br>continuous restructuring of experience ... |
| View on school | workplace to cultivate knowledge and skills;<br>a place to implement ideological and moral education;<br>the place that shapes the soul;<br>the pure land of the spirit ... | complexity;<br>an ecological network;<br>an organic composition of society;<br>a place to live and experience together ... |
| View on family | child care site;<br>the student's first educational place;<br>extension of school education;<br>supporters of school education;<br>a bridge for students to socialize ... | an ecological composition of the social system;<br>an ecological place for teaching and raising students;<br>components of curriculum's ecosystem;<br>communicator and collaborator of the school ecosystem;<br>a potential treasure trove of educational ecological resources ... |
| "Home-school" concept | independent of each other;<br>cooperate with each other;<br>effectiveness cancels out ... | communication and dialogue;<br>complementary advantages;<br>mutual adaptation ... |
| View on students | recipient; saver;<br>bystander;<br>obedient; container… | subject of learning; self-organizer;<br>Constructor; participant;<br>experiencer... |
| View on teacher | the transmitter of knowledge;<br>skill trainers;<br>the executor of mainstream social concepts;<br>Instructor; authority; controller.. | free reflector; irony; coordinator;<br>learning partner; interpreter<br>investigator; experiencer ... |
| "Teacher-Student" or "student-student" relationship | active and passive;<br>dominate and obey;<br>Presupposition; interaction efficiency;<br>knower and known; separation of self and others ... | recognize and respect "others' otherness";dialogue and communication; reflection, interaction; situational, experiential;<br>interpersonal negotiation ... |
| Teaching environment | unity; closeness;<br>external control; hysteresis; static ... | richness; openness;<br>creation, germination; variability;<br>ecological ... |
| Educational diagnosis and evaluation | orderly, rational, linear and scientific;<br>the means are single and attached to the purpose; value results; evaluation; measurability; clear definition, simplified methodology, careful concerned about the degree of deviation or reaching the norms | flexibility, generation, and common judgment; integration of process and purpose; multiple evaluation; difficult to measure; inspiring; emphasis on the experience and growth of teachers and students; pay attention to creation, process ... |

| | | |
|---|---|---|
| | and standards ... | |
| Curriculum view | curriculum development; goal-oriented;<br>closed; implemented;<br>scientific and rational;<br>sequence, procedural ... | curriculum practice and understanding;<br>multi-text; process-oriented; richness, regression, relevance, rigor; openness, interaction, dialogue; explanatory, situational; diversity, interrogative, enlightening ... |
| Curriculum objectives | accurate and quantitative; preset;<br>trivial and specific;<br>prioritize implementation and evaluation;<br>value results ... | general; generative;<br>creative; interactive;<br>focus on results and processes ... |
| Teaching model | subject-oriented; knowledge-oriented;<br>rationalism; the separation between theory and practice; isolated, closed, even sloppy ... | advocate nature; respect ecology;<br>practice orientation;<br>integrate theory, practice and reflection; diverse, open, interactive ... |
| Teaching material | pre-defined; authority-led<br>knowledge-oriented; dull content;<br>out of life ... | combination of pre-formation and generation; multi-agent participation;<br>formulation based on consultation;<br>rich content; respect and absorb the ecological content and rules ... |
| Class schedule | precise; commonality;<br>simplification; strict implementation;<br>teacher establishment; stress on science and law ... | flexibility; individualization;<br>richness; dynamic adjustment;<br>formulation based on consultation;<br>advocate ecology ... |
| Classroom organization | assembly line model; isolated, closed system;<br>circulation, transmission, transfer;<br>the unity of form and content ... | multiple functions and multiple levels;<br>open system; transformation;<br>connectivity, ecology... |
| Teaching method | rare; goal-oriented;<br>separated from content;<br>poor adjustability and adaptability;<br>rationalism; technicalism ... | rich; flexible and variable;<br>the content and form are unified;<br>situation and subject orientation;<br>advocate nature; Eco-oriented ... |

| | | |
|---|---|---|
| Teaching process | mechanized operation; planning and goal-oriented; teaching, guidance; assembly line;; try to eliminate the problem; split and isolate; schedule, logic design, serialization steps ... | reflective practice; dialogue, talks; Process, situation, connection and interaction; the process of joint inquiry; support, help, motivate, challenge; Pay attention to the construction of problems and interference; reflective action, interaction, consultation and communication ... |
| Curriculum evaluation | pay attention to the degree of deviation or reaching the norms and standards; measurability and focus on results; means are attached to purpose; clear definition, simplified methodology, and careful evaluation; orderly, rational, linear, scientific ... | inspiring; not easy to measure; emphasis on creation and process; multiple evaluation; emphasis on the experience and growth of teachers and students; integration of process and goal; flexibility, generation, common judgment ... |

☆Notes:

1. The above comparisons are only analyzed from the perspective of universality and generality. In the real education and teaching process, the relationship between the two is intertwined, which is not only interesting but also interconnected.

2.The content of all the above-mentioned aspects has a lot of potential analysis dimensions, such as: "time", "space", "situation", "subject", "object", "should", "actual" ... with different angles, the results of the analysis will be different.

3. Understanding the relevant content of this table is an important basis for implementing ecological curriculum. We need to deepen our understanding of similar issues in the process of frequent interaction with theory and practice.

## 5.2 Environment ecological analysis curriculum in the curriculum System

With the continuous development of intellectual disability education, the corresponding curriculum system has gradually improved. In the curriculum system of intellectual disability education in mainland China, the main curriculums are subject curriculum, compensatory curriculum, development curriculum, adaptive curriculum, functional curriculum, and ecological curriculum. In addition, some scholars also mentioned supportive curriculum and quality of life curriculum, but they have not been widely recognized and promoted. The "Environment ecological analysis curriculum" that focused on by this research is a specific category of the

ecologism curriculum. Of course, it is also in this curriculum system, and it is deeply affected by other curriculums in the entire curriculum system and their interactions.

### 5.2.1 The ecological chain of curriculum in intellectual disability education

From an ecological perspective, each category of curriculum has its own value and significance in the entire curriculum system. According to the ecological degree from weak to strong, they are in different positions in the curriculum chain of intellectual disability education in mainland China, as shown in the following figure:

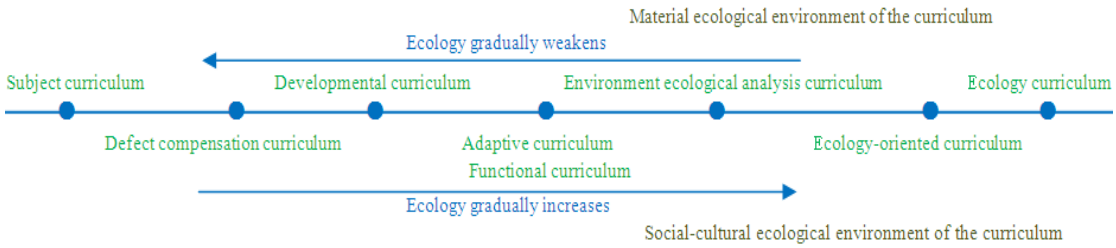



Figure5-1 A schematic diagram of the ecological level of common curriculum types of intellectual disability education in mainland China

As shown in the figure above, in the curriculum chain, from the subject curriculum to the ecological curriculum, the ecological nature of the curriculum gradually increases; from the ecological curriculum to the subject curriculum, the ecological nature gradually weakens. Between the specific curriculum categories represented by each dot, there are several curriculums in the intermediate state, for example: between the "Eco-oriented curriculum" and "ecological curriculum", there are also curriculums in the form of "quasi-ecological" and "imitation of ecological" proposed by some scholars. However, "orientation", "simulation", "imitation", etc., are not "is" the "true body" of the thing after all. They are only infinitely close to the true nature of the thing, so it is difficult for scholars to claim that "What I designed and implemented is a real ecological curriculum!" ——the ecological curriculum in the full sense is only an ideal state of curriculum design and implementation. It can only be approached indefinitely and it can never be fully realized, because the richness, flexibility, and complexity of the real ecological situations are always better than artificial designs or interventions.

Strictly speaking, any form or any type of curriculum, the roots all come from the practical activities of human beings dealing with the relationships between

themselves and themselves, the environment and the environment, or the relationship between themselves and the environment. Any specific practical activities must be carried out in a specific natural and social ecological environment, so any type of curriculum inherently contains a number of ecological situation factors and their unique interaction. It is similar like that many curriculum scholars believe that "comprehensive curriculum" actually include a wide range of curriculum categories and forms such as related curriculum, integrated curriculum, wide-area curriculum, core curriculum, activity curriculum, etc. (You, 2002) The so-called "ecological curriculum" can also be understood as not only a specific type of curriculum with only one form of expression, but also a "curriculum family" or "curriculum community" that contains several curriculum theories and practices—"pan ecology curriculum", "ecology curriculum" or "ecology-oriented curriculum". Think from the angles of "the ecological degree of the curriculum", "the deductive methods and approaches of the ecological curriculum", "the performance of the ecological curriculum" and other angles. The ecological curriculum can be divided from different aspects, different layers and different levels into "elementary ecological curriculum" which only has some cores and characteristics of the "ecological ideas" of "ecological curriculum", and which are very incomplete and insufficient; "intermediate form of ecological curriculum", which has most of the cores and characteristics of "ecological ideas" of "ecological curriculum"; "advanced form of ecological curriculum" which fully deduct and interpret the connotation of "ecology". Different forms of ecological curriculum also correspond to different sections of the curriculum chain above.

The "Environment Ecology Analysis Curriculum" that this research focuses on is located in the middle right of the entire curriculum chain of intellectual disability education, because it is still deeply influenced by "adaptive curriculum", "functional curriculum", "developmental curriculum" and even "subject curriculum". And it has many elements of these curriculums, so it is just an intermediate form of ecological curriculum.

This curriculum chain built based on the ecological degree of the curriculum as the main standard, has outlined a clear flow chart for the design and implementation of the Environment ecological analysis curriculum in intellectual disability education. Curriculum workers can use this as a reference and by understanding the nature and characteristics of the main nodes in the curriculum

ecological chain, they can clarify the position of their current work in the curriculum chain, the relationship with other curriculums, and possible future development direction.

## 5.2.2 The theoretical framework of Environment ecological analysis curriculum in intellectual disability education

Compared with other types of curriculums, especially the modernism curriculum represented by the "Taylor Model", theEnvironment Ecological Analysis Curriculum in intellectual disability education has inheritance and similarity, but it also has its own distinctive characteristics as influenced by the core of its ecological thought. In the following part, by taking modernism curriculum theory as a basic point of reference, the basic theoretical framework of the Environment ecological analysis curriculum has been explained from the perspective of curriculum development model, curriculum objectives, curriculum content, curriculum organization, curriculum implementation, and curriculum evaluation and so on.

### 5.2.2.1 Development model of Environment ecological analysis curriculum

Curriculum development model is the operation mode of curriculum design practice under the guidance of a certain curriculum development theory value orientation. It is the unity of curriculum design theory and practice, structure and function, content and form. In the development process of world curriculum theory, the main curriculum design models include goal model, process model, practice model and situation model (Li & Huang, 1996). The development of Environment ecological analysis curriculum in intellectual disability education is also greatly affected by these models. From the perspective of its most basic values and operating methods, it is also the application of these models in different ways.

The goal model of curriculum design takes the goal as the core and foundation of the curriculum development. The whole process is centered on the establishment, specification, realization and evaluation of the goal, which is gradually carried out and deepened step by step. As the father of modern American curriculum theory, Ralph Taylor’s curriculum development model is the most typical representative of the goal model. The model revolves around four central questions: What educational goals should schools achieve? What educational experience should be provided to achieve these goals? How can these educational experiences be organized effectively? How

can we be sure that these goals are being achieved? The core ideas can be expressed by the following figure (Shi, 1994):

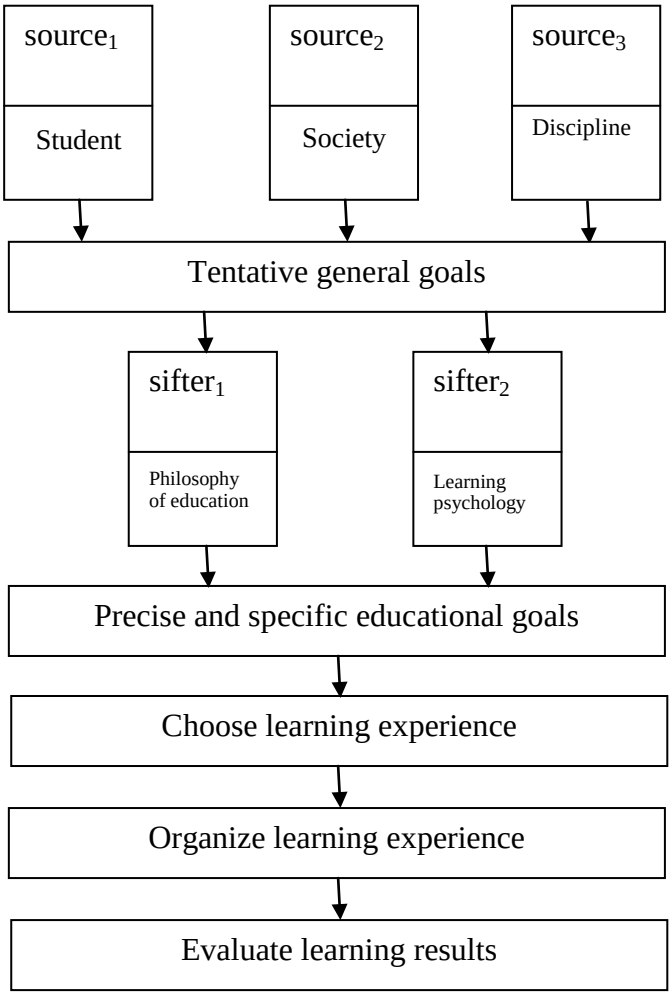



Figure5-2 Taylor's curriculum development goal model

The curriculum development goal model represented by "Taylor Principle" provides us with a concise, systematic, easy to operate, logical and universal curriculum development model. Although many scholars have criticized its shortcomings from its view of philosophy and values to knowledge and process, but most of the curriculum designs including special education curriculum have been deeply affected by it, and it is difficult to completely Replace it. The Environment Ecology Analysis Curriculum in intellectual disability education is a transitional curriculum between the ecological curriculum with full meaning and the subject curriculum with traditional meaning. From the perspective of its curriculum values, curriculum design, to the implementation and evaluation of the curriculum, it still has a strong modernism curriculum color, so the goal model is a curriculum design model

that cannot be avoided. The process model of curriculum design is systematically constructed by British curriculum theorist L. Stenhouse. This model believes that knowledge and education itself have intrinsic value, and there is no need to be stated or proved by other external objective standards, which is the core standard for the selection of course content. The main task of curriculum development is to select the content of activities, establish the process, concepts and standards of the subject, and provide the process principles for implementation. Students are active participants, activists, explorers, and collaborators, while teachers are researchers, reflectors, creators, learners. Teachers and students are in an interactive relationship in the curriculum development process (Stenhouse, 1975). The design and implementation of the Environment Ecological Analysis Curriculum in intellectual disability education attaches great importance to the value and significance of the curriculum ecosystem itself, as well as the evolution process of the contextual factors and their interactions within and outside the curriculum. Therefore, the process model is also an important basis for the design of Environment ecological analysis curriculum.

The practice model of curriculum design is a curriculum development model advocated by American curriculum theory expert Schwab. This model believes that the curriculum development based on the theoretical framework is not a comprehensive and accurate reflection of the curriculum. Curriculum development should be more thinking from the practical level, incorporating more practical elements, and carrying out through the course review. Teachers, students, textbooks, and environment are the four basic elements of the curriculum (Schwab, 1971). Although the practice model only provides a vague theoretical framework, its emphasis on "practice", "deliberation", and "particularity" is similar to the ideological core pursued by the Environmental Ecological Curriculum in intellectual disability education, so it can be absorbed and learned from by the latter.

The situation model of curriculum design advocates that curriculum development should comprehensively analyze social culture and clarify the relationship between social culture and curriculum development. There are two representative models of the situation model: Skilbeck's "Situation Analysis Model", which analyzes the situation $_1$→ formulates the goal→ designs the teaching plan→ implements the curriculum plan→ evaluates and identify→ analyzes the situation$_2$…(Skilbeck, 1984); Lawton's "Culture Analysis Model" determines cultural constants$_1$→ determines cultural variables→ classification of knowledge and

experience→ theoretical reference→ forms goals→ determines cultural constants $_2$…(Lawton, 1983). The situation model absorbs many advantages of the goal model, process model and practice model, focusing on the analysis of specific situations and enhancing the connection between curriculum elements. This is similar to the Environment ecological analysis curriculum in intellectual disability education which attaches importance to the interpretation and impact of the environment and the ecological position and evolution of curriculum elements in the entire curriculum system.

The above-mentioned models of curriculum development reflect the researchers' attention and application of different angles such as "goal", "process", "practice" and "situation" in the curriculum design and implementation process. Each kind of model is of great significance, and there is a significant complementary relationship between them. Combining with the previous analysis of the connotation and characteristics of the Environment ecological analysis curriculum in intellectual disability education, we know that it is an inclusive and systematic curriculum model. Therefore, the curriculum design of this study comprehensively uses the above four curriculum models: mainly based on the goal model and the situation model, while absorbing the ideological core of the practice model and the process model.

**5.2.2.2 Goals of Environment Ecology Analysis Curriculum**

Although different curriculum models and curriculum categories have different values, status and application methods in curriculum development, it is not possible to deny its important role in the entire curriculum system. Compared with other curriculums in the contemporary curriculum system, the Environment Ecological Analysis Curriculum in intellectual disability education has similarities, but because of its unique formation background and concept, it also has its own particularity. Therefore, its curriculum objective is the unity of universality and particularity.

From the perspective of source, modern curriculum theory generally believes that there are three major sources of curriculum objectives: the study of learners themselves, the study of contemporary off-campus life, and the recommendations of subject experts (Shi, 1994).

The ideological core of the Environmental Analysis Curriculum in intellectual disability education is the related theories of ecology. Therefore, under the guidance of the basic concepts of ecology system, in terms of balance, connection and

development, the vision of the sources of the curriculum objectives must exceed the scope of the above three sources. In the real environmental ecology of the curriculum, it involves teachers, students, teaching materials, central courses, other courses, family environment, school environment, community environment, natural environment, professional environment and other broad curriculum factors. These factors are centered on the central courses and have intricate interactions with each other. Under the guidance of specific curriculum values, these broad curriculum factors or the interaction between them can and should become the source of objectives of Environment ecological analysis curriculum.

From the perspective of basic value orientation and types, typical curriculum objectives mainly include (Schubert, 1986): "universal objectives", which take general educational purposes or principles as curriculum objectives, are with normative, vague and universal features; "behavior objectives", which state the curriculum objectives in the form of operational and concrete behavior expressions, to indicate the results of behavior changes that should occur after the end of teaching activities; "generational objectives" are curriculum objectives that develop with the development of teaching activities in a specific educational and teaching context. It emphasizes the process, context, practice, and significance of the curriculum objectives; "expressive objectives" refer to students' individualized and personalized realization and performance in the process of interacting with unique educational situations. It attaches importance to the subjectivity, difference, experience and situation of the curriculum objectives.

Due to the characteristics of complexity, richness, variability and even chaos of the Environment Ecological Analysis Curriculum system in intellectual disability education, it is difficult for any type of the above curriculum objectives to accurately and completely express its complete connotation.

Therefore, in the process of designing and implementing the Environment ecological analysis curriculum, these types of curriculum objectives should be used in a comprehensive manner: both emphasizing the presetness and generativeness of the objectives; emphasizing not only objectives in a broad sense, but also specific objectives; emphasizing not only the objectivity of the objectives, but also the subjective experience of the objectives. From the operational level, before the curriculum implementation, it is appropriate to formulate universal objectives with only macro-instructive significance. During the curriculum implementation, with the

development of the curriculum ecological situation, it is appropriate to use behavioral objectives as the basic reference, and at the same time to explore a large number of generative objectives and encourage expressive objectives. After the curriculum implementation, it is appropriate to evaluate the curriculum itself, the environment, and the interactive relationship between the curriculum and the environment from four different value orientations and goals.

From the expression and description of objectives, since the modernism curriculum design and implementation is mainly based on the goal model, the corresponding objective expression and description particularly emphasizes the specificity, consistency, accuracy, feasibility, function, importance and appropriateness of the curriculum results (Pratt, 1980). The written objectives generally include five parts: who wants to complete the desired behavior (the subject is generally a student); the performance of the actual behavior; the results of the behavior; the conditions or circumstances for completing the behavior; the criteria for the success of the behavior (Huang, 1987) Obviously, the traditional way of expressing and describing curriculum objectives is based on behavioral objectives. Based on the previous analysis of the nature and characteristics of the Environment Ecological Analysis Course, especially the source of the curriculum objectives and the basic value orientation, it is difficult to reflect the uniqueness of such curriculum. Therefore, the objective expression and narrative of the Environment ecological analysis curriculum must exceed the current mainstream expressions, and be more abundant and flexible in terms of relevant subjects, objects, situations, and results. For example, the subjects of the objectives can be teachers, parents, volunteers in the community, etc. in addition to students, because these subjects are in the corresponding ecological location during the implementation of the Environment ecological analysis curriculum, and also take the corresponding duties of the curriculum ecosystem.

**5.2.2.3 Contents of Environment ecological analysis curriculum**

Corresponding to the basic sources of curriculum objectives, modern curriculum theory generally believes that the basic orientation of curriculum content selection has the following types (Zhang, 2000): "Curriculum content" is the subject knowledge, and the basic concepts, basic principles and inquiry methods of the subject are taken as the core content of the curriculum. In the process of selecting content, the relationship to be dealt with includes the relationship between subject

knowledge and course content, the relationship between science, art and morality, the relationship between science and technology, the relationship between the knowledge of conceptual principles and the knowledge of process methods. "Curriculum content" refers to social life experience, taking current and future social life needs as the main source of curriculum content. When choosing content, it involves the debate between learners and society whether they are active, passive, or transcendental."Course content" is the learner's experience, which takes the learner's interests, needs, and experience as the main source of the course content, emphasizing that learners are creators of knowledge and culture, subjects and developers of curriculum, and creators of social life experience.

Environment Ecology Analysis Curriculum in intellectual disability education is a complex ecosystem composed of many course factors. This system contains knowledge, learners and many aspects of social life, but it is not limited to these. In addition, it also includes rich contextual factors such as the natural environment, educators, various teaching materials, and the frequent and multiple interactions among all curriculum factors are also prominent features of this system. Therefore, all factors in the system or their interrelationships may be the source of the curriculum content. When selecting the specific content of this type of curriculum, it is necessary to go beyond the limitations of the goal model, adhere to the basic principles of system, balance, connection, development, etc., and select content that meets the true characteristics of the curriculum ecological situation within and between the multi-dimensional systems of the curriculum ecology.

**5.2.2.4 Organization of Environment Ecology Analysis Curriculum**

"Curriculum organization" refers to the process of arranging, combining, and adjusting the position, order, or interaction methods of curriculum elements under the guidance of a certain curriculum objectives or values in accordance with specific laws and rules. There are two basic types of curriculum organization: vertical organization, which arranges the elements of the curriculum in the vertical development order and development stage; Horizontal organization, organized according to the horizontal correlation between curriculum elements. The basic principles of curriculum organization are: continuity, order, integrity, cohesion, scope and balance (Li, 1996).

The environment ecological analysis curriculum of intellectual disability education also needs to follow the basic types and principles of curriculum organization mentioned above. However, compared with the traditional goal-based

curriculum, the curriculum elements of the Environment Ecology Analysis Curriculum are more abundant, the curriculum system is more variable and ambiguous, and the relationships between curriculum elements, curriculum elements and curriculum system are more complicated. Therefore, in the course organization process, the complexity, flexibility, and difficulty of applying these organization types and principles are also greater. Everything needs to be based on the current conditions and limitations of the curriculum ecosystem as the basic trade-off criteria.

**5.2.2.5 Implementation of Environment ecological analysis curriculum**

"Curriculum implementation" is the actual process of curriculum promotion, reform and practice. Curriculum expert Goodland believes that curriculum implementation involves five levels of curriculum: concept level curriculum, social level curriculum, school level curriculum, teaching level curriculum, experience level curriculum (Goodlad & Su, 1992). The basic value orientation of curriculum implementation includes: "faithful orientation", faithfully practicing the established curriculum plan; "mutual adaptation orientation", in a specific educational context, adaptively implement the established curriculum plan;"creation orientation", the established curriculum plan is only a basic reference for communication and development between teachers and students, and more emphasis on the experience, creation and growth of teachers and students. (Synder &Bolin et al., 1992) The Environment ecological analysis curriculum is based on the ideological core of ecology, with special emphasis on the systematic, balanced, connected, situational and developmental nature of the curriculum implementation. Therefore, curriculum implementation involves curriculum at various levels such as conceptual, formal, adopted, understood, implemented, experienced, and evaluated. Taking "faithful execution" as the basic guide, and at the same time, individual phases also take into account the mutual adaptability and creativity. Only in this way can we follow the step-by-step development laws of the curriculum and better reflect the complexity and richness of the real curriculum ecosystem.

**5.2.2.6 Evaluation of Environment ecological analysis curriculum**

"Curriculum evaluation" refers to the collection and use of information to assist in the decision-making process of relevant educational programs or curriculum plans. The collection and use of information must be able to show the advantages and disadvantages of the curriculum scheme or curriculum plan, and serve as a reference for curriculum reform or innovation. The content of the curriculum evaluation is

influenced by the definition of the curriculum and the purpose is to help individuals' and curriculum decisions (Cronbach, 1963). Its functions include needs assessment, defect diagnosis, curriculum revision, curriculum comparison, choice of curriculum plan, determination of the achievement of objectives and performance judgment. The types of evaluation include: objective-based evaluation, formative evaluation and summary evaluation, result-based evaluation, process-based evaluation, test-based evaluation, unified evaluation, critical standard evaluation, authentic evaluation, and communicative evaluation, etc. Common evaluation modes include objective-based evaluation mode, gap mode, appearance mode, background-input-process-output mode, dialogue mode, etc. The value orientations of evaluation mainly contain social tradition orientation, student experience orientation, behavioral technology orientation, subject knowledge orientation, and education process orientation (Huang, 2015).

Corresponding to the previous analysis of the development model, curriculum objectives, curriculum content, curriculum organization and curriculum implementation of the Environment Ecological Analysis Curriculum of intellectual disability education, the evaluation content of such curriculum must point to a wide range of curriculum elements and their interactions in the curriculum context ecosystem. The purpose of the evaluation is to promote the manifestation of the life meaning of the learner, the sustainable development of the curriculum ecological environment, and the harmonious integration of the learner and the curriculum environment. The function of evaluation lies in the diagnosis, correction, comparison, prediction and establishment of the elements of the curriculum context ecosystem or the overall functions and relationships. The evaluation types mostly take the objective-based and result-based evaluation as the basic framework, and integrate the elements of formative, process-based, unified, authentic, and communicative evaluation, while the test-based and bureaucratic evaluation types are not suitable for use. In the practical implementation, the appearance model advocated by Stake (Stake, 1967) can be used to explain the theoretical basis, intention, observation, standards and judgments of the evaluation in detail, and make judgments of their prior factors, communication factors and results factors.

## 5.3 The Macro Model of Class-based Environment Ecology Analysis Curriculum Operation

By taking the normal class of children with intellectual disabilities as the basic unit, a certain subject actually taught by the cooperative teachers as the basic entry point, the real ecological environment in which the class teaching system is located as the basic background, and the relevant theories of ecology as the basic guidance, this study carries out relevant explorations of the Environment Ecology Analysis Curriculum. The core mechanism and macro model of curriculum operation are shown in the following figure:

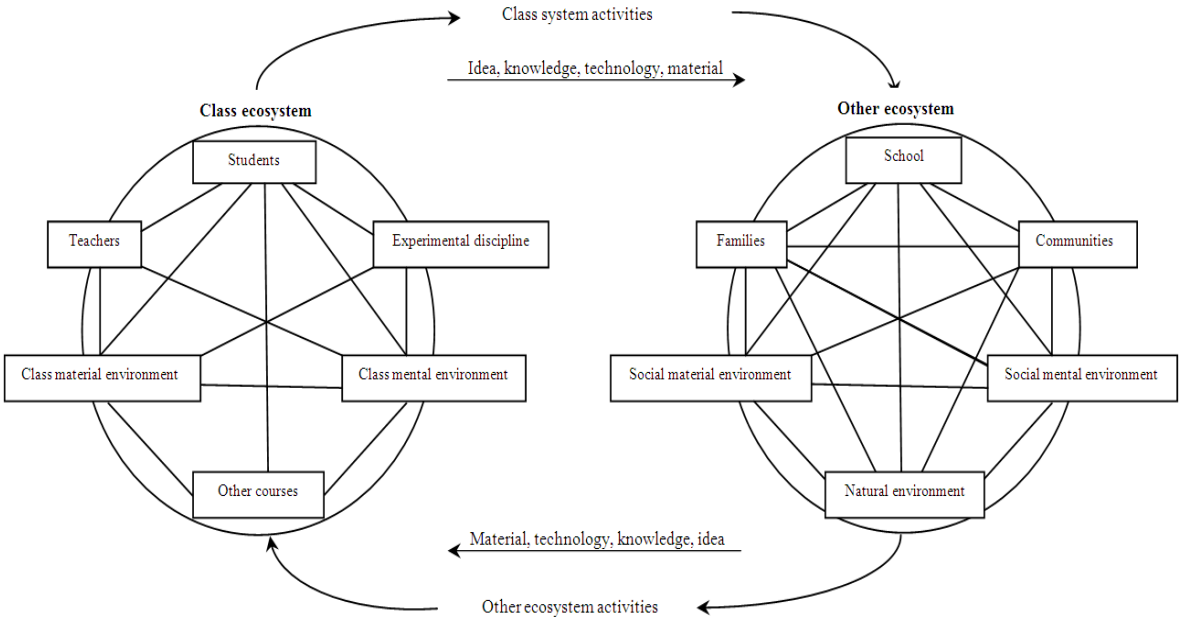



Figure 5-3 Macro model of class subject-based Environment ecological analysis curriculum operation

As shown in the figure above, the "class system" and "other ecosystems" form the entire ecosystem for curriculum design and implementation. Among them, the "class system" contains six contextual ecological sub-factors such as "teacher", "student", "experimental discipline", "class material environment", "class mental environment" and "other courses", which are interconnected and interacted with each other."Other ecosystem" is also composed of six contextual ecological sub-factors such as "school", "family", "community", "social material environment", "social

mental environment" and "natural environment", and these factors are also interrelated and interacted.

At the same time, there are also mechanisms for mutual connection, interaction and mutual transformation between the two systems: "class system" can provide ideas, knowledge, technology, or material support for "other ecosystem" through "class activities"; "other ecosystem" can also provide material, technical, knowledge, or idea feedback to the "class system" through their own activities. The two major ecosystems constitute the entire ecological context network of the Environment ecological analysis curriculum. All the ecological factors in the context have direct or indirect connections. One or some ecological factors and their interactions will directly or indirectly affect the presence state of the curriculum.

However, from the perspective of the entire curriculum ecological context system, all the factors or all relationships related to the Environment Ecological Analysis Curriculum are not self-evident in the real scene of curriculum design and implementation. On the contrary, many curriculum ecological factors and relationships are silent and potential. They require curriculum participants to fully coordinate, intervene, adjust, integrate, and optimize with a positive attitude, full motivation, and good methods in order to truly explore the entire curriculum ecosystem and then to promote the sustainable and harmonious development of learners and the environment. This is also the significance and core purpose of this study.

# Chapter 6 The first stage of curriculum action research: preliminary exploration in excitement and expectation

Based on the previous theoretical thinking, construction, and investigation survey, in order to maximize the scientificity and rationality of the curriculum exploration, the researcher again used written interviews to investigate the possibilities of implementation ecologism curriculum in intellectual disability education among relevant senior special education professionals in mainland China. The results details are as follows:

Interview questions: *"Many years ago, the Xiangyang Children's Development Center tried eco-oriented curriculum, and the community-based teaching at Damin Special Education School in Zhejiang province can also be regarded as an exploration of ecological curriculum. So, is it possible for ordinary intellectual disability education schools with average conditions to operate such curriculum? If not, why? If yes, do you have any suggestions? Thank you! "*

Interviewees: 4 principals of first-rate special education schools in different regions, 5 senior education experts in different universities, and 4 senior special education teachers in different schools. Overall, the opinions of these interviewees can well represent the general situation of the implementation of eco-oriented curriculum in mainland China.

Interview results: one principal of a special education school and an expert from a university believe that it is difficult for the intellectual disability education school with average conditions to operate ecological curriculum. The reason are: Ecological curriculum needs a complete community building as the foundation, but many special education schools are built in remote places, there are few community resources, and there are many problems in the integration of students; Teachers' understanding of the curriculum itself and how to integrate individualized education plans(IEP) and curriculum is a problem in itself. If the curriculum is designed, we should how to integrate the community's ecological resources and how to integrate them effectively are also crucial. Where these resources are? Who will integrate and how to integrate? All of these need support system.

The rest of the interviewees agreed that even if the school conditions are average, it is possible to implement eco-oriented curriculum. However, it is necessary to pay attention to the following details: the school should have the concept of ecological curriculum; the teaching content should be as close as possible to the lives of students, and restore life scenarios as much as possible; break the traditional classroom teaching model; need teachers to let go, leaders to insist, parent training and support, various special education rehabilitation training and professional integration in the school;

community acceptance and mutual assistance, the use of social resources, natural support and teaching; meet environmental requirements, suitable for students' ability needs; closely integrate life goals in teaching, teachers, parents, all parties in the community actively participate, family support; managers and teachers must have modern educational concepts of ecological curriculum. Curriculum construction should take student life as the core, respect the development and continuation of student life, the natural and ecological environment of life growth, and constantly improve and build a school-based curriculum system that meets national curriculum requirements and adapts to local conditions; curriculum and management mode need to be adjusted, which requires high professional ability of teachers and teachers need to really want to improve themselves at the professional level; focus on integration and solid progress on the basis of regional characteristics and the reality of the school, combining the spirit of the national curriculum standards, according to the development characteristics of children with intellectual disabilities; it can be gradually advanced from different levels and different aspects.

In general, senior scholars of special education generally believe that for special education schools and special education teachers with extremely common conditions, if they pay full attention to the details of curriculum design and implementation, they can try ecological curriculum. This also gave us the confidence and courage to explore the ecological curriculum, so in anticipation and excitement, we began the exploration of the first phase of curriculum action research.

# 6.1 Propaganda, mobilization and preliminary formation of curriculum research team

The basic model adopted in this study is an action research model in which special education teacher in university and teachers in special education schools at the grass-roots level cooperate and discuss with each other. Therefore, from the perspective of special education teacher in university, in addition to fully conceived the theories and action paths related to curriculum research, it is also needed to find suitable research partners. Besides fully explaining the basic research ideas to them, only on the basis of self-selection, mutual consultation, and mutual selection can a preliminary research team be formed. This step is a direct starting point of the operation part in the entire operational research practice, and will determine the composition of the research team and the early state of action, so it is very important.

## 6.1.1 Action background

Combined with my own study and work experience, through previous theoretical explorations and investigations, I have a relatively rich understanding of the theoretical background, development context, current research status and deficiencies, and subsequent development ideas of Environment ecological analysis curriculum in intellectual disability education. Then the most important work is to find reliable research partners, and carry out specific exploration of curriculum design and implementation with them. The beginning teachers in intellectual disability education are in their early stages of career development, facing the role transformation from students to teachers, adapting to the new working environment or their own love, marriage and other life issues, so they often lack work experience in all aspects. This is their disadvantages of participating in similar curriculum experiments. But also because they have been in-service not long time, compared with many experienced teachers, they still have a great sense of novelty and desire to explore. Many of the latest knowledge and skills learned during university studies are not outdated, which is just right and can be applied to actual education and teaching. Along with effective cooperation and proper guidance, they can also be very good collaborators.

In addition, as mentioned before, until now, there are inadequate researches about junior teachers in intellectual disability education in mainland China, so I chose this type of teacher as my research partners.

## 6.1.2 Action goals and plans

There are three main objectives of this action step: through full communication and two-way selection, initially looking for the junior teachers in intellectual disability education who are willing to explore the curriculum together. The number is not necessarily to be big, just 4-8 is enough; initially form a research team on the basis of full communication and consultation among members; through the joint learning and practice among members, the operation mechanism of the curriculum research team is initially explored, and the necessary theoretical and practical experience is accumulated for the subsequent stages of curriculum action research.

In order to better achieve the above objectives, before communicating with potential research partners, I systematically sorted out the relevant theories of the ecological curriculum in intellectual disability education and deeply thought about the significance and value of similar curriculum exploration for both parties. Besides, I initially conceived the operation mode of the curriculum group, and comprehensively considered the pros and cons of participating in this curriculum experiment for partner teachers, especially possible difficulties and challenges.

## 6.1.3 Implementation and exploration

After clarifying the goals and making related plans, I adopted the principle of "purpose sampling" in "non-probability sampling", and selected some junior teachers in intellectual disability education with working period less than 5years, but with different teaching age, geographical areas, teaching subjects, school history, school professional strength etc. as the initial communication objects. In the end, 7 teachers were willing to participate in the curriculum research team during the initial exploration period.

### 6.1.3.1 Basic procedures and steps of communication

The basic procedures and steps of communication are: introduce the background, motivation, purpose, meaning, challenges, activity methods and other contents of the curriculum exploration to the junior teachers in detail. If the teacher has no intention, stop the follow-up communication on this issue; if the teacher is

interested→ ask her/him to read the core literature related to ecological orientation, and think about the feasibility and necessity of participation through combining various factors in his real teaching environment→ if there is no intention, the follow-up communication on this issue is suspended→ if there is still any intention, the two sides interview again through video to confirm the motivation, environmental factors, feasibility, difficulties and challenges of participating in the course exploration→ if there is no intention, the follow-up communication on this issue is suspended→ If the teacher still has the intention, she/he was initially establish as a member of the curriculum research group and participated in all activities of the group. Through this two-way selection and communication process, seven teachers were willing to participate in the curriculum research.

#### 6.1.3.2 Participants' background and motivation

From the background or motivation of participation, the seven teachers have similarities, but the differences between them are also obvious. The relevant situation is as follows:

Teacher Wen: The school leaders don't know much about ecological curriculum, but they are very supportive for her trying new curriculum. Teacher Wen herself thinks that the overall atmosphere and teaching conditions of her school are not satisfying, and she is also very dissatisfied with her teaching status.“*The last semester I was really too decadent. If decadent again, I guess I will be useless.*”Therefore, she also hopes to take the opportunity of participating in the curriculum exploration to change her working state. In addition, she is in love period, which affects the quantity and quality of her teaching time and energy investment to a certain extent.

Teacher Gan: At the beginning, she was very concerned about the time limit for participation. After knowing various information related to the operation of the curriculum group, she finally decided to participate and promised to persist for at least three years.

Teacher Min: Affected by the resignation of a colleague, she also wants to leave her current school and doesn't like the school she worked at. *"It may be dislikes caused by being away from home, and then suppressed, and then a series of psychological problems!", "I feel like I have a lot of problems which I can't figure out. Then I live like a walking dead …"* But because she was interested in such curriculum

before graduation, after three days of serious consideration, she decided to participate in our curriculum team whether resign or not.

Teacher Ting: she was not satisfied with her current work and life and she was preparing for the examination of graduate students, but also really wanted to do something meaningful with us. So it was difficult for her to balance the relationship between the curriculum experiment and the postgraduate entrance examination. She was worrying that due to limited time and energy, neither is done well. She intended to systematically read eco-related literature after the exam and formulated detailed plans for curriculum practice, which would be implemented as soon as the new semester begins. So she finally decided to join our course team first. At the beginning, she mainly listened and participated fully after the exam.

Teacher Hui: "*I don't know what hardships I will face after I decide, but one semester of work experience gives me a more development-oriented heart. If I live according to my current life, it can be said to be very 'easy'. But this kind of life is not what I want", "Hey! I have truly experienced the school life on our side. When I see the teachers around me, their state is not what I want to see of myself "*…Obviously, the main motivation of Teacher Hui to participate is also dissatisfaction with the status of work and life. She hopes to take the opportunity of participating in our curriculum team to promote her growth and progress.

Teacher Ran: She did not know whether she was suitable to join the curriculum research team at the beginning. She thought that after she started to work, her professional development was slower. And at present, she is mainly concerned about her own survival issues, and professional development issues are hardly considered. So from an ideal point of view, she hopes to participate, but she is afraid of uncontrollable factors. After four days of consideration, she said, *"I hope I can have some professional growth, so I hope I can join your team".*

Teacher Wei: *"... Like joining the practice team in the rehabilitation center in sophomore year, it is a rare learning opportunity. Since I worked, I always felt that I was the most fulfilling in college time as I was always maintaining a state of learning. Joining this group gives me this state of learning, positive thinking, and allows me to return to the role of student. I also want to add a learning power to the tediousness of my work. Because our school is just at the starting stage, there are few opportunities for learning. I feel that I am engaged in special education work, but I am gradually away from my major. I hope I could have such a learning opportunity, studying with a*

*group of people who love learning and thinking, and maintaining my professionalism. ", "…I know there are many things to do during this period, and I also think I will make good arrangements. This just confirms the more time spent in which areas, it will let you gain as much. In learning, I never feel that it will consume time and energy, because it is worth it. At the same time, it is a rare opportunity for me to learn together with mentor and friends to help me progress and share good methods for learning and thinking. So, I will stick to my choice! "*

Judging from the participation background and motivation of the above seven teachers, the junior teachers in intellectual disability education often face the contradiction between the good dreams in pre-employment period and the relentless blows from post-employment real work or life. This psychological and developmental dilemma is very complicated. It involves many factors and relationships between teachers' pre-employment and post-employment, personal and environment, ideal and reality. In such a state, there are often the things they are most concerned about and the breakthroughs they most want to seek. This is the teacher's real personal background of the curriculum experiment. In this state and background, some factors are extremely beneficial to the curriculum experiment, while others are extremely harmful. They deeply affect various aspects of the performance of the curriculum participants.

### 6.1.4 Summary and reflection

Based on the efforts at this stage, we have initially established a team for curriculum exploration, which is an important starting point and foundation for subsequent research. However, the team members still lack a comprehensive and in-depth understanding of the ecological course, and their motivation for participation is also extremely complex. Therefore, there are inevitably unreasonable expectations for the upcoming curriculum exploration activities and estimations of difficulties and challenges are often inadequate. In addition, as the researcher has limited previous experience in curriculum operation, the judgment about what kind of teacher is really suitable for participating in the course experiment may not be accurate. This is an important reason why some teachers withdraw from the team later in the curriculum operation.

# 6.2 The initial exploration of the curriculum team

After the formation of the curriculum research team, we started the preliminary curriculum exploration, which is an important stage for accumulating experience in curriculum operation. The exploration in the early stage was rather confusing. After about half a semester, the various operating mechanisms of the group were initially formed, and the mutual assistance and cooperation between the team members gradually became better.

## 6.2.1 Action background

After the curriculum team is formed, the most urgent task is the construction and development of the curriculum group. In the early accumulation and communication process, the team members had a preliminary understanding of the Environment ecological analysis curriculum in intellectual disability education, but none of them have practiced it personally, only staying at the conceptual level. Besides this, their existing basic teaching frameworks are still very incomplete, which means the implementation of Environment ecological analysis curriculum still lacks a basic platform. Therefore our curriculum research needs to start from study of the most basic theories and completion of the most basic education framework system.

## 6.2.2 Action objectives and plans

### 6.2.2.1 Action objectives

The main action objectives of this stage are: to make necessary theoretical preparation for the curriculum research through systematical learning of the general theories of curriculums and teaching; comprehensively organize and study the related achievements of the ecological curriculum, through comparisons with the traditional curriculums, grasp the core characteristics of the ecological curriculum, and explore the design and implementation of the subsequent Environment ecological analysis curriculum; improve the existing teaching framework, especially the series of individualized education and teaching processes; Through the communication and interaction between all members, a communication and interaction mechanism for the group was initially formed.

### 6.2.2.2 Action plan

In order to achieve the above objectives, help team members to better understand the significance of curriculum exploration, and better coordinate the

relationship between experimental curriculum and existing curriculum, the relationship between individual teachers and their working environment, I combined the previous theoretical combing, communication with group members and reflection on the current working status of special education schools and proposed a plan for the initial exploration of the curriculum. This plan had been widely accepted by team members.

**(1) Reflect on your real educational life situation**

Curriculum, teaching, teacher-student interaction, school curriculum model, students' real life and learning state, team members' own real life and work state, other teachers' real life and work state ...

Without a profound or even "sorrowful" reflection on similar issues, it is not enough to accumulate the true motivation for innovation.

**(2) Theoretical learning**

General curriculum and teaching theory, research methods, philosophy, ecology...

The group members are mainly in practical situations. Without the necessary theoretical assistance, it is difficult to do really well of any work.$Theory_1$ (other's ideological achievements)-$Practice_1$-$Research_1$ (own ideological achievements)-$Theory_2$ (other's ideological achievements)-$Practice_2$ ...This is a cyclical reciprocating and spiraling process, but the three are actually the three sides of a problem, intertwined and integrated.

**(3) Deal with the relationship between the curriculum experiment and the school's established curriculums**

How to recognize and treat existing curriculums is a problem that any new curriculum implementation must objectively face and seriously solve. Combining with the actual situation of team members in many aspects, the heart needs to be firm at the beginning, but the scope and intensity of innovation can be smaller, otherwise it is easy to backfire.

**(4) Manage the relationship with other school staff**

The curiosity, incomprehension, watching the scene of bustle, indifference and even all kinds of "suppression" that many other people have at the beginning may be inevitable, because everyone does not want to fall into their life and work status, they have to bear such situations. If no one has ever shown "abnormality", how can a huge "sauce tank" expect a day of "shock"?

**(5) All important thinking or practice must be kept in related files**

Text, pictures, audio, video; lesson plans, teaching materials, diaries...

Without these files, there is less important material and support throughout the practice of sorting, summarizing, reflecting and improving.

**(6) Handle the relationship between curriculum exploration and other personal affairs**

The exploration of new curriculum will definitely take up more time and energy for everyone. But if the exploration is successful, these "sacrifices" are worthwhile by improving ourselves, fulfilling the students, and improving the school atmosphere. In addition, other areas of personal life need to be taken into consideration. Any truly excellent curriculum practitioner or course theorist (in fact, the two cannot be distinguished) must have a considerable breadth of life and depth of thinking about life. Otherwise it must be difficult to gain insight into the subtleties and details of any curriculum!

**(7) Combining curriculum exploration with individual professional development, thesis writing, scientific research project application, class or school characteristics creation**

This will enable the above affairs to promote each other and coordinate development.

**(8) Success = motivation + method + diligence + environment**

In this generalized "success formula", for individuals, the factors more in the forward are more important. Throughout the curriculum exploration, members need to pay attention to the "method" issue, because it is a factor that everyone has ignored and lacked as always.

**(9) At the beginning of the curriculum exploration, it is not appropriate to "knock and drum"(high-sounding words), otherwise it is easy to fall into an extremely passive and extremely utilitarian atmosphere.**

For some factors and structures in the environment, individuals are often powerless in the short term, but we can change ourselves, and only we are most likely to be changed.

**(10) Mode of interaction between team members**

Cooperation, communication, listening, assistance, rather than leading, passive waiting, etc.

No one is the creator and master of eternal truth. We need to produce more reasonable thinking and action strategies that belong to both the collective and the individual in dialogue, interpretation, communication and coordination.

**(11) Several steps of curriculum exploration**

Literature review and reflection and evaluation on the status quo of education→ preliminary Study→ formally implementation→ summary and reflection on effectiveness→ optimization, improvement, promotion...

In fact, these steps are intertwined, not a simple linear relationship. This semester focuses on the first two steps, especially the second step.

**(12) Try to find at least one cooperation partner on campus**

Any work requires an interlocutor. Whether you really want to explore together is the first trade-off criterion for choosing this partner. In addition, it is better to take into account factors such as academic background, gender, hobbies, and teaching subjects.

## 6.2.3 Implementation and exploration

In the preliminary exploration stage of the course, our main practice stages and their core contents are as follows:

**6.2.3.1Establish a multi-faceted communication and discussion mechanism**

Since the team members are separated from each other, on-site communication is very difficult, so at the beginning of the group operation, we established basic principles of team communication and an online communication group "Curriculum Exploration". These principles include a combination of individual communication and collective communication, video communication and other forms of comprehensive use, temporary communication and routine communication to assist, mainly professional communication. With the deepening of the curriculum discussion, we have formed a weekly communication system. Every time communication has a clear topic and is posted to the network communication group in advance. The main topics of the discussion are the completion of the planned work that week, the problems, suggestions or experience of the curriculum experiment and other problems. Before each discussion, all team members prepare by themselves and during the discussion and everyone takes turns as the moderator and meeting recorder. After the seminar, an communication reflection record form is formed and under deliberation by all members, it is uploaded to the on-line communication group for everyone to

archive and learn. The use of the communication reflection record form is used throughout our curriculum research. It records in detail the time, form, participants, seminar theme, seminar process, questions and reflection of our communication. Its content and structure are shown in the following table:

Table 6-1 Communication and reflection record case of the "Curriculum exploration" group

<table>
<tr><td colspan="2">Time</td><td colspan="2">13.08.2019 19:00-21:10</td></tr>
<tr><td colspan="2" rowspan="3">Form</td><td>Topic</td><td>1. Discussion on the contents of chapters 7-11 of “Research on the community practice in Damin school for children with intellectual disabilities”.</td></tr>
<tr><td>Theme lecture</td><td></td></tr>
<tr><td>Free communication</td><td></td></tr>
<tr><td colspan="2">Participants</td><td colspan="2">Xu, Gan, Wen</td></tr>
<tr><td colspan="2">Recorder</td><td colspan="2">Wen</td></tr>
<tr><td colspan="4">Discussion process record</td></tr>
<tr><td rowspan="3">Personal report</td><td>Reporter</td><td colspan="2">reporter's main point of view or personalized questions and answers</td></tr>
<tr><td>Gan</td><td colspan="2">1. The main contents include school system, support system, curriculum system, and teaching mode. Compared with the school she works, the Damin school has relatively complete system and other aspects. The personal idea is to start with yourself, for example, to develop class rules first, and then establish a management system.<br>2. The current problem: the general environment is not ideal, and it also feels chaotic.</td></tr>
<tr><td>Wen</td><td colspan="2">The main content is the school system, support system, curriculum system, "integration of knowledge and ability, unity of knowledge and action" model. The community teaching model has many inspirations for my class to solve similar problems. The specific contents are as follows.</td></tr>
</table>

| | |
|---|---|
| Questions and discussions | 1. Gan<br>Gan：Compared with my own school, I feel that my school is not as perfect as Damin.<br>Xu：What do you think how Damin gets the success today?<br>Gan：Attributable to the school leadership, it can still start from teachers themselves.<br>Xu：It is related to the personal management skills of headmaster Liu Jiafen. Liu is a management principal. Several current principals of our schools are neither management-oriented nor academic-oriented. When we can't decide the big environment, we can start from our own subject. Put forward your own ideas about specific strategies in the book, such as unit-level differentiation teaching. Survival education is also an attempt in community teaching. When we read a book, we should calm down and learn from other people's ideas to develop our own curriculum and teaching. This is a sign of measuring whether we understand the book.<br>Gan：The results described in Chapter 11 are advantages. Targeted practice is the greatest advantage, because comparing to ourselves, we may stop at action.<br>Wen：Indeed, our school leaders do not have the executive power of headmaster Liu。<br>Xu：The environment is like this. When we analyze problems, we do not need to struggle with schools and leaders, but return to "I" and walk out of our third path.<br>Gan：Limitations and deficiencies: In each stage of the curriculum research process, the logic of some stages is not clear enough, especially the module of curriculum evaluation, which is not detailed enough.<br>Xu：Personally, I think the macro and meso ideas are quite clear.<br>Gan：Our school does not integrate the teaching content like Damin, but only one subject involves another school intentionally or unintentionally. Hold the teaching stages steady first, and then go deep into life.<br>Xu：Make sure whether you are clear about the “unit theme” teaching method? There are different levels of integration: unit theme teaching within the discipline, interdisciplinary, and cross-age unit theme teaching |

| | |
|---|---|
| | 2. Wen<br>Wen：Chapter 7 is about the Education Collaborative Council.<br>Xu：From your own point of view, is it possible to build your own class support hub station?<br>Wen：The answer is yes. Participants can be some teachers, some parents, and my circle of friends. They can all be my teaching support.<br>Xu：Stop complaining about the school and start with yourself.<br>Wen：Regarding the mode of "integration of knowledge and ability, unity of knowledge and action", when I read it, I found that it is the same as the mode I use in my class, but I neglect to summarize and reflect.<br>Xu：Writing a diary is a good way to do summarization and reflection.<br>Wen：Take a positive attitude towards "community teaching". Ideals: Choose the subject of life Chinese for the unit theme teaching in the next semester, and make it close to life in teaching aids, teaching environment, and homework. Significance: The needed degree of support of a person with intellectual disability does not depend on the degree of the obstacle, but the degree of function; the classroom is not the only place for learning, but the main place; whether or not to do is a life attitude.<br>Xu：Most of the enlightenments are in macro and meso level, and lack of the detailed enlightenments to the micro level. |
| Seminar summary and reflection | |
| The world is like a mirror: frowning at it, it frowns at you; smiling at it, and smiling at you. (Samuel)<br>I can take anything from people, but there is one thing that doesn't work. This is the freedom to choose attitude towards life in a specific environment. (Frank)<br>To rest in the status quo, keep complaining, or stop complaining and do things seriously, the choice is yours. | |
| Expansion issues that need further attention | |
| How to enhance the motivation and method of reflection? | |

Notes:

1. The basic principles for filling in each of the above: sincere, accurate, comprehensive, meticulous and refined.
2. The content of each section of the form is not limited by the length of the page, and everything is subject to the content.
3. All the students participating in this group's activities will take turns for recording and records shall be uploaded to the "group file" before the end of next work day. The records will be finalized after review and revision by everyone.

#### 6.2.3.2 Learning general core theories

The research of the Environmental Analysis Ecological Curriculum in intellectual disability education is not only a practical process, but also a process of theoretical exploration. The study and application of relevant theories must be implemented throughout the research. In consideration of the fact that the theoretical basis of the team members is still very weak, but the tasks of the curriculum practice are very urgent, we have systematically planned the scope and steps of theoretical learning. The main clues are: First, read classic books in the field of curriculum and pedagogy, such as Taylor's “Basic Principles of Curriculum and Teaching”, which is hailed by many curriculum theorists as the "Bible" of modern curriculum theory; Dole's "Post-Modern Perspective on Curriculum", which marks the shift from modernism curriculum to postmodernism curriculum; Pinar's "Understanding Curriculum", which is hailed as "the bible of contemporary curriculum theory". Second, read general books on ecology, such as "Introduction to Ecology", "Human Ecology", and "General Ecology". Next, read books related to educational ecology, such as "Educational Ecology" and "Classroom Ecology". Third, read the literature on ecological education curriculums in special education, especially in the field of intellectual disability education, such as: "Ecological Journey-Creative Teaching Going Forward", "Practical Research on Damin's Practice in the Communityization of intellectual disability Education". Finally, combined with the exploration of the curriculum and members’ own interests, learn theories in a wider range of fields.

In order to strengthen the effect of learning and ultimately achieve the purpose of learning to apply, we agreed that each member of the curriculum team should read no less than 300 professional-related books each month, and fill out the “Reading Record Card” and share reading experience in group seminars. The specific content and format of the reading card are shown in the following table:

Table 6-2 "Curriculum Exploration" Group Reading Record Card Case

<table>
<tr><td colspan="2">Reader</td><td colspan="4">Ting</td></tr>
<tr><td colspan="2">Background or reason for choosing this book</td><td colspan="4">1. Have not read any professional books related to the curriculum. Reading this book can fill the gap.<br>2. Reading this book can help to compile a checklist of living Chinese in the first grade of intellectual disability education.<br>3. This book is recommended by Xu.</td></tr>
<tr><td colspan="2" rowspan="2">Information of the book</td><td>author</td><td>Ralph Taylor</td><td>title</td><td>"Basic Principles of Curriculum and Teaching"</td></tr>
<tr><td>publisher</td><td>people's education Press</td><td>Publish time</td><td>1990(Chinese version)</td></tr>
<tr><td colspan="2" rowspan="2">Information about reading</td><td>time</td><td>01.2019</td><td>place</td><td>Penglai Garden B</td></tr>
<tr><td>page range</td><td>1-100</td><td>methods</td><td>Sketch + comment</td></tr>
<tr><td rowspan="4">Reading reflection</td><td colspan="5">The core views of this book</td></tr>
<tr><td colspan="5">1. Teaching plan is an effective means of education<br>2. When selecting educational goals, you should comprehensively use knowledge and experience such as philosophy and learning psychology to think about the source of the learner's educational goals (learners, contemporary life outside the school, and recommendations from subject expert). Specific, general, and operational statements of educational goals include two aspects: behavior and content. Educational goals are the most critical principles that guide all activities of the curriculum compiler.<br>3. The learning experience is the interaction between the learner and the environment in which he lives. The choice of learning experience should be based on five principles: possibility of practice, sense of accomplishment, level of learner development and ability, same experience with multiple goals, and same experience with multiple results.<br>4. Three criteria for effective teaching organization: continuity, order, and integration.<br>5.The two-dimensional analysis used as the basis for designing learning experience is also used as the basis for the design of evaluation process</td></tr>
<tr><td colspan="5">Question, expansion and optimization of this book</td></tr>
<tr><td colspan="5">1. Taylor's theory is goal-oriented. Goal-oriented and process-oriented teaching should be combined in teaching, and neither side can be ignored.<br>2. After reading this book, it is needed to understand Broome’s goal stratification theory in detail.<br>3. Teachers' personal learning and life experience will also affect the selection of teaching objectives and the design of teaching activities. Therefore, when choosing a learning experience, students' learning experience and teachers' teaching experience should be fully</td></tr>
</table>

| | |
|---|---|
| | considered. |
| | The relationship between this book and actual work |
| | 1. After reading the selection of education goals, I realized that teachers should be very cautious in choosing students' individual education goals. When formulating the teaching plan for the semester, students' teaching goals should be clearly, objectively and concretely stated and comprehensive abilities such as philosophy, learning psychology, and learning experience should be made full use to screen the education goals.<br>2. My class is a low-level class of intellectual disability education. The students' life and learning experience are not rich. In the daily teaching activities, we should arrange more environments and construct situations to provide students with experience.<br>3. The basis for designing teaching experience can also be used as a basis for evaluation, which can check students' learning in time in actual work. |
| | Using strategies of this book in plan |
| | 1. Reference. Refer to the table on page 38 to revise the personal professional development goals.<br>2. Inspiration and thinking. In the literacy teaching part and life skills teaching part, teacher can widely collect the students' experiences in life, and use the method of creating situations to teach. |

Notes：
1. Basic principles for filling in each part: sincere, accurate, comprehensive, meticulous and refined.
2. Read no less than 300 pages professional-related books every month.
3. Each student will upload this form to the "group file" after completing the form carefully before the last day of the month.
4. "Page number range" refers to the range of actual reading; "reading reflection" is only for the content that has actually been read.

### 6.2.3.3 Improve the basic framework of curriculum and teaching

As mentioned above, comparing with the traditional subject curriculum or individualized education curriculum, the Environment ecological analysis curriculum in intellectual disability education has several differences, but the same or similarities also exist in large numbers. Therefore, the ability to proficiently operate traditional curriculums is the basic skill of designing and implementing Environment ecological analysis curriculum. Without a relatively complete curriculum and basic teaching framework, the implementation of Environment Ecology Analysis Curriculum lacks a basic platform. In terms of the curriculums actually operated by the team members, the stages of curriculum implementation are still very incomplete, for example: the

diagnostic assessment before teaching of the seven participants is either not available or extremely simple; there is a lack of school-based curriculums that truly meet the needs of students; lack of systematic summative assessment at the end of the period...

Based on the above thinking, in the initial exploration stage of the curriculum, by combining the real situation of their own teaching, all participants tried a series of processes including the improvement the basic framework of their curriculums and teaching, systematical operation from educational diagnosis and evaluation, to the formulation of individual education plan, and then to the curriculum design and implementation, and finally to for summative evaluation of the curriculum. Therefore, we have also specially designed the student's file box. During the whole teaching process, the core materials of each important stage are put into student file box. The main stages of our curriculum and teaching are shown in the following student file directory:

Table 6-3 Suggested student file directory in the ecological curriculum operation* Case

| Order | File name or category | Description |
|---|---|---|
| 1 | Student basic information record form | Contains basic information of the family and the student, growth history, medical history, educational history and other content. With family consent, also have a copy of the disability document if the student has. |
| 2 | Medical diagnosis and evaluation report | This item is optional. If it is available, please contact the parents directly to make a copy. If not, you can advise the parents to go to a regular hospital for relevant examinations |
| 3 | Major educational diagnostic evaluation | It includes four major sections: students' comprehensive physical and mental development ability, subject development ability, special field needs, and environment |
| 4 | Educational diagnostic report | Contains basic information of students (overview), basic information of evaluation, evaluation content, item, tool name, evaluation personnel, date list, summary of evaluation results, comprehensive analysis and judgment, evaluation and reflection. |
| 5 | Individualized education plan | Refer to the examples in the Shuangxi curriculum and other materials to form your own individualized education plan module; it includes two parts, the school version and the home version, and each part includes the corresponding support plan. |
| 6 | Curriculum planning and design report | Briefly introduce the teaching mode and basis selected for students, the basis and process of selecting or preparing teaching materials, the semester teaching plan, etc., focusing on summarizing the main content and design ideas; |
| 7 | Teaching activity plan | On the basis of extensive reference to the relevant theories and examples of writing lesson plans, form your own relatively fixed lesson plans template or improve the design of school lesson plans; select representative lesson plans to |

| | | |
|---|---|---|
| 8 | Representative photos and videos of teaching activities | Thinking dimensions: subject, student, teacher, teaching place, teaching period, teaching process ... |
| 9 | Teaching reflection | For series of questions such as content and writing methods, refer to the document in the group: "Teaching reflection and teaching experience summary" |
| 10 | Process assessment report | Refer to the content framework of the individualized education plan, or use other dimensions and tools to measure the teaching effectiveness. |
| 11 | Summative assessment report | Tools can be the same as diagnostic and process assessments; diversification: subjects, content, methods, processes, interpretation of results ... |
| 12 | Home-school cooperation record form | Design by teacher, for example: it can include students' performance at school, teachers' specific suggestions or recommended materials on the content and methods of family education; students' performance at home, parents' suggestions on school teaching or management, etc. Fill in once a week. |

∗Notes：

1. It is necessary to be familiar with all the books published by teacher Zhang Wenjing and Xiang Yang, and other relevant materials should also be referred.
2. Each student has a separate file folder, preferably a box-type, largest number.
3. While standardizing the entire teaching process, needs to think on each stage: how to be "ecological"?
4. No one has a lasting will or full ability to tell you how to effectively solve every specific problem! Only self-reflection and self-motivation can develop our own infinite potential!

### 6.2.3.4 Conduct personal professional development assessment and planning

Good operation of any curriculum is inseparable from course implementers' in-depth understanding and reflection on their many characteristics, the curriculum they implement and the multi-level environment system of education and teaching. From the actual situation of the seven participants, they are mainly engaged in daily routine teaching or management work, and rarely consciously and comprehensively reflect on the above content. Therefore, after a preliminary operating mechanism was formed in the curriculum team, all participants conducted a comprehensive summary and reflection on their professional development, and revised it once every semester. The main contents of personal professional development assessment and planning are as follows:

School environmental assessment, including the following:(1)basic information: full name of the school, the established time, basic situation of students,

basic situation of teachers, general situation of the physical environment; (2) the relevant situation of the curriculum and teaching: teaching mode, teaching materials, main management regulations, other conditions; (3) the spiritual characteristics and services of the school situation: core educational concepts, campus cultural characteristics, utilization of social resources, social services outside the school, and other conditions; (4) the impact of the school environment on personal professional development: positive factors and negative factors.

Class environment assessment, including the following: (1) basic information: only the classes the teacher teaches in, classes the teacher has teaching and daily management, basic conditions of students in the main class, basic conditions of teachers in the main class, overview of the physical environment of the class, other situations (2) curriculum and teaching related conditions of the main service class: educational diagnosis and evaluation, curriculum model, IEP preparation, curriculum plan preparation, textbook selection, teaching plan compilation, curriculum implementation, final evaluation at the end of semester, use of school resources, use of social resources, other situations; (3) overview of courses and teaching of other classes that the teacher only teaches; (4) impact of the class environment on personal professional development: positive impact, negative impact.

Other environmental assessments, including the following: (1) social environment: positive factors, negative factors; (2) family environment: positive factors, negative factors.

Personal related situations evaluation, mainly include: (1) core concepts: outlook on life, humanity, education, students, curriculum, teaching, and others; (2) personal psychological characteristics self-evaluation: cognitive characteristics, emotional characteristics, personality characteristics, personal tendency, and others; (3) self-evaluation of personal professional development status: advantages and disadvantages in professional knowledge, professional skills, professional sentiment, etc.

Personal professional development goals, mainly include: (1) overall career professional development goals: professional knowledge, professional skills, and professional sentiment, others; (2) personal professional development goals and implementation summary for the coming three years: professional theoretical reading, professional practice (including teaching, management, out-of-school services, etc.), professional research, and final assessment at the end of the period.

### 6.2.3.5 Formulate rules for the operation of curriculum research teams

Our curriculum research team is a place where curriculum and pedagogical researcher from university collaborate with grassroots special education teachers to jointly explore issues related to curriculum and teaching. It should be an open and dynamic development platform. In order to ensure the quality of team operation, certain operating rules must be emphasized, so that problems or contradictions in the operation can be resolved in a timely manner and the smoothly operation of the team can be promoted.

Based on the above thinking and combined with the operation situation of the curriculum team in the past four months, we have developed the course team's early operation rules after several collective consultations and revisions, which are as follows:

***Operation Rules of the "Curriculum Exploration" Group***

*1. Basic atmosphere*

*Democracy, harmony, knowledge and progress.*

*2. Basic goals*

*Self-renew, benefiting others and for public.*

*3. Basic guidelines*

*Combining theory with practice, combining practice with research*

*4. New member joining mechanism*

*Implement an "invite-recommend" system for team members, and recruit new members at the end of each semester, preferring a vacancy if not qualified.*

*5. Participation period*

*Once join, the member should follow the rules of the group. If it is not irresistible reasons ①, the member should be adhered to for at least two years, and then choose to go and stay voluntarily; if it is irresistible reasons①, once withdraw, the member will immediately leave this communication group, and will no longer accept applications for rejoining.*

*6. Focus on "method"*

*Combining the real problems in study, work and life, insist on the study, research and application of reflection and thinking methods.*

*7. Basic principles of group communication*

*Problem-centered, sincere and open-minded, speak freely, learn from each other, and fulfill each other.*

*8. Group communication Rules*

*① In addition to winter and summer vacations, a group seminar is held once a week, and the meeting recordings are taken in turn.*

*② Except for extremely personal and privacy issues, the remaining issues can be communicated in the group.*

*③ All team members [②], team member are required to be "prepared" for each seminar and are refused to participate in the "seating style".*

*④ Pay attention to the messages in the online group in time, actively raise own questions, and answer the questions of other team members.*

*⑤ All questions posted to the group should be questions that have been tested by the "three steps" and "three levels" thinking and action strategies. When communicating, team members should present their detailed process of problem solving.*

*⑥ Regardless of whether the issue is initiated by someone, team members are recommended to actively generate and communicate related issues and opinions in the communication process.*

*⑦ There are three basic forms of group communication, collective communication, and individua communication to solve the problems with commonality, groupness 0r individualization.*

*⑧ Every month [③] read no less than 300pages professional-related books, fill out the reading card, and upload to group files in that month.*

*⑨ Combined with members' real education and teaching, every semester at least write a small essay that has practical guidance for their work.*

*⑩ All public materials in the group are only used for pure purpose for learning and communication. Without the permission of the original creator, they cannot be uploaded to other networks or used for any other utilitarian purposes.*

*9. Communication outside the group*

*In addition to actively and effectively participating in all activities of the group, all team members should also actively communicate with relevant persons or groups outside the group, so as to better promote the development of themselves, the group and other team members: the professional sections of the group named "Friends of Shouping" from the Xiangyang Child Development Center, team members must select at least one for continuous tracking and learning; the rest of the communication persons and groups are free to choose by team members.*

*10. Establishment and revision of operating rules*

*This operating rule is established by the principle of "majority consent". Once confirmed, it is the common activity norm for all members of this group. Check and revise at the end of December every year.*

*Notes:*

*① "Irresistible reasons" only refer to four situations, including having children before the age of one year, team members' own health status (requires a formal and worthy public proof from the hospital), adjustment of school jobs or types of disabilities, and transfer to non-education job.*

*② "All team members" exclude two specially-invited teachers Zhang and other teachers that may join later.*

*③ "Every month", calculated as 12 months a year.*

### 6.2.4 Summary and reflection

Through preliminary exploration, we have formed a relatively complete and effective communication and discussion mechanism. We have more understanding of the theories closely related to curriculum research and further improved the curriculum and teaching framework. Based on comprehensive reflection, personal professional development plan was drawn up. The research of the curriculum team has gradually changed from early chaos and disorder to collaboration and order. These theoretical thinking and practical exploration have made the necessary foundation for later research of the curriculum team and is an important step in the whole curriculum research.

Since the exploration and implementation of any curriculum is a long and arduous process, which is a severe test for the motivation, perseverance, methods, knowledge reserve, and utilization of environmental resources of each member of the curriculum team. As a result, some members have been watching and slacking. This is a major hidden danger for the subsequent development of the curriculum team.

# Chapter 7 Curriculum Action Research Phase II: Continue to move forward through setbacks and difficulties

The exploration of the first phase of curriculum action research provides inspiration for the second phase of research in terms of ideas, theories, and operating methods. At the same time, new requirements and challenges have been raised in team building, curriculum design and development.

## 7.1 Changes and adjustments to the curriculum research team

The construction and development of the curriculum research team will directly affect the quality of curriculum design and implementation. As the curriculum research advances, the participants' understanding of the team, their experience of the curriculum experiment itself, and their thinking about the relationship between the curriculum experiment and their routine work or life will change. These changes subtly promote the changes and adjustments of the curriculum research team.

### 7.1.1 Action background

With the gradual deepening of the curriculum research, we are getting closer and closer to the real environment ecological analysis curriculum and the pressure and challenges are also increasing. The contradiction between the requirements of wisdom, time and energy of curriculum experiments and other work and life of participants is becoming more and more prominent. For example: Teacher Wen mentioned *"... because our workload is really heavy, we have to use one evening to do unfinished work, one evening to participate in the discussion of Xiangyang group, one evening for seminar discussion, one evening to do other materials for ecological curriculum. So only two or three nights we can use by ourselves ..."* In addition, the course experiment is difficult to bring them timely material rewards or an immediate professional growth. Therefore, after a semester of running-in, the four teachers Min, Ting, Wei and Hui voluntarily chose to withdraw from our curriculum research team. The reasons for their withdrawal are:

Teacher Min: *"Dear friends, our school is holding an academic annual conference these days, and we have been working overtime every day for the past two weeks. I will not be able to participate in the discussion tomorrow evening. I am very sorry for the delay. I will catch up as soon as possible after this busy time. You continue discussion tomorrow night! Sorry! "…"Teachers, after careful consideration, I decided to withdraw from the curriculum group. I feel sorry to everyone as I have affected everyone's progress. Quitting this group is not what I want, and I also don't want to see such a result. If I do not quit now, I will waste a lot of hard work from the teachers and will hinder everyone! Sorry!"* In addition, as mentioned before, Teacher Min also faced the problem of whether to quit the job.

Teacher Ting: *"Teachers, after many tangles and careful consideration of my work and physical condition, I decided to withdraw from the curriculum exploration group. Thanks to each teacher for your assistance during this time, I wish you all a smooth work, a happy study and good health"*. In addition, another important reason for Teacher Ting's withdrawal is that she failed to pass the entrance exam for graduate students last year. She wanted to go all out this year and got rid of the work atmosphere that made her feel depressed by continuing master study. After teacher Ting withdrew from our curriculum team, she was admitted to a master's degree this year. But for the previous course experiment, she said, *"There are many choices in life. When we are facing with choices, we often don't realize what is the most appropriate. At that time, ration yields to comfort and ease. Afterwards or longer, we will gradually realize we seem to have lost something ... I'm sorry to disappoint everyone! ... I'm also sorry for myself! ... It's a pity to miss it!"* Obviously, she has always been much entangled in whether to participate in our course team, and ultimately regrets her withdrawal.

Teacher Wei: *"Dear teachers, I have carefully considered my work and living arrangements. I decided to withdraw from the curriculum exploration group. Thanks to each teacher for your assistance during this time, and thanks also to this platform for giving me the opportunity to learn special education related knowledge as I did in university. I wish all teachers a smooth work, good health and a happy life. Thanks for your instruction and guidance!"* Other important reasons for Teacher Wei's withdrawal include her duties as a teacher in a class of children with intellectual disabilities and also the educational affairs director of her school. Her daily work is also very busy.

Teacher Hui: *"Along the way, thank you for your learning guidance. After thinking twice, I think that I have little time to do the curriculum experiment cases along with my current workload, so I choose to withdraw. I wish everyone's work is going well in the future, and life is sweeter and sweeter".*

The reason why the above four teachers withdrew from our curriculum research team really reflects the current life and work status of the junior teachers of intellectual disability education in mainland China: the teacher-student ratio is low, and the teaching burden is heavy; the experience of teaching and handling interpersonal relationships in the working environment is limited; it is easy to produce a sense of loss and depression in the real working environment; in addition to teaching, it is often necessary to undertake a lot of work such as class teacher work, office work or other management and auxiliary services. This also objectively consumes a lot of their time and energy, which affects their curriculum design and implementation. Besides, life problems such as love, marriage, and property purchase are often intertwined with career development issues, which further increase the complexity of teachers' personal curriculum design and implementation background.

I think any curriculum with real vitality must be accepted by the majority of teachers and they are willing to implement it. The partners with who to explore the experimental model of the curriculum should also be ordinary teachers who can represent the "beings of all beings", so that the curriculum will have a solid and mass foundation. Therefore, despite the frustration of the withdrawal of the team members, I am still willing to do my utmost to continue the advancement of our curriculum experiment with the teachers who choose to stay.

### 7.1.2 Action goal

The goal of the curriculum research team adjustment is to further clarify the important content of the team's nature, purpose and interaction between members by responding to the queries of individual members, so as to create a good team atmosphere for subsequent research and exploration.

### 7.1.3 Answer and clarification

The main concerns of the team members are: is it possible to compress the weekly collective discussion time and discuss closely around the topic; if it is possible not to participate in the weekly professional training activities from Xiangyang group (a professional communication network group established by the Chongqing Jiangjin

Xiangyang Child Development Center, which is a well-known special education institution in the mainland China);is it possible to post detailed ideas that need for completing the task every month; is it possible not to draw a picture of thinking mode practice. At the same time they also realized *"…reflecting on the previous activities on the ecological curriculum, our participation is indeed not high, and our enthusiasm is not enough. If the team accepts our suggestions, after we choose to stay, we will definitely be active in the best state. Participating in ecological curriculum can really improve our motivation to learn, and we also want to participate".*

My feedback on this is: the length of communication time in each seminar is affected by complex factors such as the difficulty of the communication theme, the size of the communication range, the communication rules, and the preparation of team members. None of these factors are determined by one person. Everyone can speak actively, and we must rely on the joint efforts of each other to better control the time; the boundary between "main topic" and "non-topic" in communication is difficult to clearly define; Xiangyang group is one of the most effective special education network communication groups in mainland China. If you feel that there is no gain in this group, at least any group in the mainland area, it is even more difficult to really gain something. And the host of this communication group, Li, has clearly told the group members many times that the communication of Xiangyang group only provides a guide for everyone, and not every time can provide an exact answer. So that is why she suggests members to propose cases actively and formally in the group and other group members can help with analysis, which makes it more detailed. No one can "post" the detailed tasks that need to be done each month, and each teacher's specific education and teaching situation is different, so different members of the curriculum team can only maintain unity at the macro or meso level.

In addition, everyone in the curriculum team is a "master", and all of the members are both teachers and students to each other. As for the thinking mode I am talking about, everyone is still far from the level of automatic application. Therefore, before mastering, a weekly exercise combined with your real study or work is necessary, and many pictures can also be reused. There is no lack of collaborators from both sides, and no matter whether any member continues to participate in the activities of our group or not, it does not affect personal friendship at all. When we do anything, we must try our best to find true “like-minded” people, because if the ambitions are different or the ethics are different, it is easy to be a torture for both

parties. If you want to participate, you really need to do something for yourself and your students that are based on the present and have a long-term perspective.

### 7.1.4 Summary and reflection

Through sincere communication with each other, the previous doubts and puzzles have been largely clarified. This also played a role in stabilizing people's mind and creating a good team atmosphere for the subsequent curriculum exploration. As Teacher Gan said, *"... since you choose to stay, do things sincerely and carefully. If there is a group of people who want to take a look at the sun washed in the spring rain, and want to hear the cicadas in the summer, want to hold the fruits of the autumn harvest together, and want to blow the cold winds of winter together, don't just think about it and experience it! Luckily, we have so much time to be 'wasted'! ".*

## 7.2 Further development of curriculum exploration

The entire process of exploration is like an interlocking, spiraling chain. Each stage is interlaced and connected with each other, and continuously extended. Based on the various steps of the above curriculum research, this stage focuses on expanding the breadth and depth of the theoretical learning of the curriculum, further improving the various links and processes of the curriculum and teaching using the student file directory as a clue, while paying attention to the learning of general thinking methods and its application in curriculum design and implementation.

### 7.2.1 Action background

Through early exploration, the members of the curriculum team have accumulated theoretical knowledge of general curriculums and teaching that are closely related to the curriculum experiment, but their understanding of ecological thought and its application in education is still superficial. Although a series of individualized education and teaching processes have been launched, they are not enough situational and ecological. For example: there is still a lack of systematic analysis of the real environment for curriculum design and implementation; when learning the theory or practical operation of others, there is more follow-up and imitating, less self-summarization and reflection. If these problems are not solved, it will definitely affect the subsequent development of curriculum research.

## 7.2.2 Action goals and plans

The main action goals of this stage are: to enhance the understanding of ecological ideas and their application methods, expressions and paths in human society, especially in the field of education among the participants of the curriculum research; enhance curriculum participants' ability to interpret "educational theories or modes of operation from others’"; enhance curriculum participants' ability to summarize and reflect, especially general thinking ability; improve the curriculum environment analysis ability of participants.

In order to successfully achieve the above goals, the curriculum research team jointly discussed and selected the books that need to be read first. I prepared the analysis and interpretation table in advance and carefully prepared the lecture notes and related exercise lists on diary writing and thinking patterns.

## 7.2.3 Implementation and exploration

The actions in this stage mainly involve reading of professional theories, writing diaries, construction of thinking patterns, utilization and combing of teaching resources, etc.

### 7.2.3.1 Expand the breadth and depth of professional theoretical reading

Linking to the previous learning plan for professional theories, this stage mainly conducts the study of related theories about general ecology and educational ecology, in order to make theoretical preparations for the subsequent implementation ofEnvironment Ecological Analysis Curriculum. At the same time, combined with the actual needs of work, team members can also read other books simultaneously. After the reading activity, team member also needs to fill out the “Reading Record Card” and upload it to the collective communication group to accept the review from other members. Meanwhile, in order to help participants better understand others’ theories and apply the others’ theories to their own practice, I have prepared a "table" based on the general knowledge content and characteristics of any theory. The table is named as "Analysis and Interpretation Table of Educational Theory or Operation Mode from Others", the following case is the application of this table:

Table 7-1 Analysis and interpretation table of "educational theories or operation modes from others" ☆ application case

| Analysis and interpretation dimension | Contents in detail |
|---|---|
| 1.The core problem to be solved | 1.Education community in intellectual disability education |
| 2.Multiple backgrounds in which this problem occurs | 1. The status quo and reflection of social support and integrated education.<br>2. The development of students with intellectual disabilities and the problems arising from the teaching activities of special education teachers.<br>3. School curriculum exploration and research. |
| 3.The core theoretical basis of the theory or model | 1.The theories foundation of Damin's practical research include Dewey's progressive education thought, life education theory from Tao Xingzhi, and living education theory from Chen Heqing.<br>2. To solve this problem, there are concepts such as contradiction view and connection view in philosophy as foundation, as well as guidance for practice in the specific education and teaching process, such as unit theme teaching, task analysis method, community life experience teaching method, and ecological situation teaching method. |
| 4.Main content or core ideas | 1. Their school first established a modern school system and conducted various meetings to ensure the implementation of school practice activities from three aspects: community, family, and school.<br>2. Subsequently, the school established a community teaching support system, analyzed and evaluated the community teaching environment, humanistic environment and objective environment, and clarified the security guarantee system for community education.<br>3. Then the school conducts four phases of school-based curriculum research: the first phase explores the combination of differentiation teaching and unit teaching, the second phase of social practice curriculum research, the third phase, the compilation of lifelong education materials, the fourth phase, and formation of a community-based curriculum system for life-long education.<br>4. In each stage, certain principles and certain teaching strategies and methods are followed to form a curriculum system that is closely related to student development and is conducive to improving teaching efficiency. In the process of the curriculum practice, a community teaching model of “integration of knowledge and ability, integration of knowledge and action” was formed, combining community teaching with subject teaching. |

| | |
|---|---|
| 5.Applicable conditions | 1. Has a large number of practical community resources. |
| 6.Features or advantages | 1. Taking question as an entry point, continuous development and progress in community practice. It promotes the teaching reconstruction of intellectual disability education school and builds a person-oriented community teaching system. Promote the growth of students and the development ethics and specialization of teachers. |
| 7.Limitation or deficiencies | 1. In each stage of the curriculum research process, the logic of some stages is not clear and orderly; especially the module of curriculum evaluation is not detailed enough. It is confusing. |
| 8.Core models or ideas for solving similar problems from other scholars or institutions' | 1. Design and implementation of education and teaching in the class.<br>2. Shuangliu mode<br>3. Kindergarten education and teaching |
| 9.Attitudes and ideas for solving similar problems in your class or school | 1. On the other hand, our school is in a very confused and chaotic stage in the curriculum practice and research. There are both differentiation teaching and unit theme teaching, as well as disciplined subject teaching and individualized education teaching, and occasionally carry out community teaching activities. There is no specific curriculum system as a support.<br>2. In class teaching, our class conducts unit theme teaching, but teachers in various subjects have not formed a good cooperative relationship. |
| 10.Enlightenment for solving related problems | 1. Solving the problem requires a certain idea of the overall situation, reflecting in practice, practicing in reflection, and recording changes at the same time. |

☆The basic principles for filling in the above contents: sincere, accurate, comprehensive, meticulous and refined.

Several levels of problem (text) interpretation:

Level 1: Do not understand, miss or even misinterpret;

Level 2: Only understand the literal meaning, and lack a deep understanding of its background and connotation;

Level 3: On the basis of full understanding, it can also be analyzed, judged and evaluated in many ways;

Level 4: Can further correct, improve and expand its deficiencies;

Level 5: Completely internalize it into your own knowledge system and form your own beliefs about it.

Note：This case is selected from an exercise by Teacher Gan.

In the reading process, you can analyze and interpret the theoretical or practical operation modes of others according to the basic dimensions listed in the above table, so as to continuously expand the reading breadth and depth, and improve the ability to understand and use.

### 7.2.3.2 Explanation and application of diary writing method

The diary contains personal observations, feelings, attitudes, understandings, reflections, assumptions, lengthy comments, and critical opinions. These contents are the communication between the person who keeps a diary and himself. This highly personal communication records the things that the author thinks are meaningful. (James, 2004).With the help of a personal diary, you can understand the course more personally and humanely (Jin, 2006) the diary is also an important means of self-reflection and tempering thinking, but few people can stick to long-term diary writing. In addition to the lack of motivation due to various factors, the lack of thinking about some details of diary writing and poor writing method itself are the important reasons.

Among the members who have participated in our curriculum research team, except for one teacher who has been writing a diary since high school, the rest have no habit of writing a diary. In order to better understand some of the essentials of diary writing, we agreed that after all participants wrote a diary for 20 consecutive days and sent it to me by taking pictures, I began to explain it purposefully.

Explanation of diary writing method, mainly including the following content: some personal backgrounds related to the theme of communication; the proper and actual understanding of the diary; the relationship between the diary and life; the basic functions of the diary; the common types of diaries; the basic dimensions of the diary theme selection; the core principles of the diary theme establishment; basic principles of diary writing; special principles of diary writing; basic style of diary macro framework; requirements of diary writing content; style of diary record materials; collation and utilization of diary.

After learning the theory of the diary writing method, all members of the curriculum research team applied it to the actual diary writing to varying degrees. However, due to the lack of a strong supervision mechanism, most members later failed to insist on writing a diary every day.

### 7.2.3.3 Teaching and application of thinking mode

Only by mastering correct thinking methods and developing the habits and abilities of independent thinking, good analysis, and problem solving can we apply the knowledge and skills learned to the transformation of the actual and objective

world of life (Qian, 1986). The cultivation of thinking ability and the training of thinking patterns are also important contents of the training of post-employment teachers. In the education tradition in mainland China, there is always a lack of teaching of pure thinking methods, and the teachers of our curriculum research team are also very unfamiliar to this topic. However, in view of the importance of this topic, plus I am an amateur on this topic and I have been paying attention to this for more than ten years. Therefore, in our curriculum action research activities, the discussion and application of thinking methods are actually throughout the whole process. There are analysis and application combining with specific cases and also independent lectures about thinking methods.

The mode of thinking we communicate is the "thinking mode of situational interpretation of problem". The main content includes the method and its importance; the meaning of "problem" and "situation" and its inspiration to problem solving; the "horizontal situation posture" interpretation method and application steps of the problem; the "vertical situation posture" interpretation method and application steps of the problem; the global situational solution strategy for interpreting and generating problems. This is a problem-centered thinking mode, based on a special understanding and interpretation of "problems", "situations", especially "complex interaction between problems and situations", which reflects a multi-dimensional, three-dimensional, dynamic thinking of human beings.

Compared with mainstream thinking methods such as mind maps and critical thinking, this kind of thinking mode is more directional and directly targets the real problems faced by problem solvers, so it is easy to learn, master and apply. However, judging from the general response of the team members, they need at least one year of continuous practice to be truly proficient and flexible of this thinking mode.

The learning and application of thinking methods emphasizes the combination of theory and practice. Therefore, while preparing theoretical learning materials, I also designed corresponding exercise sheets. Before the lecture began, the two parties clearly agreed:

(1) starting from the week when the lecture ends, within a four-month period, use this thinking mode to analyze at least one of the real learning, life or work problem every week; (2)fill in the "worksheet for ‘thinking mode of situational interpretation of problem’" and send it to my e-mail as an electronic version of word.

After my review, I give feedback immediately and we communicate again. The basic structure and main contents of the exercise sheet are as follows:

Table 7-2 worksheet for "thinking mode of situational interpretation of problem"

| |
|---|
| 1. Describe and interpret the difficult situation |
| 2. Description, interpretation, and definition |
| 3. A horizontal situation system that describes, interprets, and defines problems |
| 4.Interpretation and screening of internal and external contextual factors in the horizontal context system |
| 5. Interpretation and screening the influence of situational factors of the horizontal context system and their interactions to the problem |
| 6. Interpret and generate “strategies of horizontal situation posture” |
| 7. Draw the hierarchy diagram of vertical situation posture of the problem |
| 8. Interpret and generate “strategies of vertical situation posture” |
| 9. Draw a multi-dimensional situation posture diagram of the problem |
| 10. Interpret and generate multi-dimensional and situational strategies |
| 11. Interpret the situational problem-solving process |
| 12. Summarize and reflect on the whole process of problem-solving |
| 13. Opinions or suggestions on the subsequent perfection and optimization of this thinking mode |

#### 7.2.3.4 Systematic analysis of the utilization of teaching environment resources

According to Schwab, the curriculum consists of four basic elements: teachers, students, teaching materials and environment (Schwab, 1971).Among them, "environment" as an important component of the curriculum has an important influence on the existing form and development status of the curriculum. However, for a long time, the actual implementation of intellectual disability education in mainland China is mainly based on the curriculum model of subject-oriented logic. The operation of many curriculums is in a very isolated and closed state, and the curriculums are separated from the surrounding environmental resources. The schools where the teachers of our curriculum team work in and the curriculums they actually implement are generally in this state. However, the implementation of Environment ecological analysis curriculum requires that we must break this situation, fully recognize the close relationship between curriculums and the environment, and fully explore the teaching potential of the curriculum environment.

Hence, starting from the two basic dimensions of "theoretical availability" and "actual utilization", I construct the "Analysis Table of the Utilization Degree of Education and Teaching Environment Resources" to help teachers deepen their understanding and insight into the teaching environment and resources and to make the necessary foundation for the environmental analysis of curriculum design and implementation. As shown in the following table:

Table7-3 Analysis table of the utilization degree of education and teaching environment resources

| Theoretical availability / Actual utilization | Fully available | Available after adjustment | Completely unavailable |
|---|---|---|---|
| Fully utilized | ＋ | ＋ | － |
| Partial utilized | ＋ | ＋ | － |
| Completely unused | ＋ | ＋ | ＋ |

Notes：

1. The "resources" of education and teaching include materials, information, technology, methods, ideas, manpower, relationships...
2. "＋": This kind of resource exists in theory; "－": This kind of resource does not exist in theory
3. Any resources involved in the process of education and teaching can be summarized as the type of resource represented by a cell.
4. Different types of resources interact and evolve dynamically, and they are integrated into the context system of education and teaching.
5. This table can be used as a tool for generating educational goals and content.
6. In addition to the "utilization level", the use of resources also includes content, methods, processes, situations and other aspects.

In the table, the two columns "theoretically fully available" and "available after adjustment", as well as the two lines "partially utilized" and "completely unused", are particularly important. They can guide the curriculum design and implementation personnel to use environmental resources as comprehensively and in-depth as possible. By filling in the using situation of their own environmental resources in the corresponding cells in the table above, they can detect their potential exploration, so as to think three-dimensionally about the teaching resources.

### 7.2.3.5 Design teaching resource analysis table

Connecting to the analysis of the utilization of teaching environment resources, in order to more comprehensively and systematically use a variety of environmental resources, we combine the nature and characteristics of our real teaching families, school, community or professional environment, from students, teachers, communities,

families, and comprehensively sort out the obvious or potential multiple resources in various fields from the perspective of class material environment, class spiritual environment, natural environment, social spiritual atmosphere, etc., and in accordance with the basic principles of logic and situation. Take the “teacher” field as an example, including the following content:

Table7-4 "Teacher" as a resource

| 2. "teachers" |
| --- |
| 2.1 professional philosophy and ethics |
| 2.1.1 career understanding and recognition |
| 2.1.2 attitudes and behaviors towards students |
| 2.1.3 attitude and behavior towards education and teaching |
| 2.1.4 personal cultivation and behavior |
| 2.2 professional knowledge |
| 2.2.1 knowledge of student development |
| 2.2.2 subject knowledge |
| 2.2.3 educational and teaching knowledge |
| 2.2.4 general knowledge |
| 2.3 professional competence |
| 2.3.1 environmental creation and utilization |
| 2.3.2 educational and instructional design |
| 2.3.3 organization and implementation |
| 2.3.4 incentives and evaluation |
| 2.3.5 communication and cooperation |
| 2.3.6 reflection and development |

## 7.2.4 Summary and reflection

The theoretical learning and action exploration at this stage has undoubtedly further expanded the connotation of the curriculum design and implementation of our team. However, as far as the operation status of the whole team is concerned, it is still necessary to make many improvements. After our collective reflection and discussion, the following consensus has been formed:

### 7.2.4.1 Problems in group operation

The overall state is tepid, always hovering outside the door of the actual curriculum experiment: most members are in this state from participation attitudes to specific actions. During the group seminar, experimental curriculums exist; but once they return to their real work scene, many thoughts, concepts, and actions remain in their original state, making it difficult to truly take the step of innovation.

The atmosphere of true "cooperation" among participating members has not yet formed: many participants lack the strong motivation to innovate themselves and their own courses. For a long time, they are actually in different forms of thinking and action state in terms of wait-and-see, hesitating, and tasting-and-stop.

Incorrect role positioning among group members: most of the time, I take myself too much as a teacher, too self-righteous; and the participating members are too willing and too happy to be “students”. So intentionally or unintentionally, our actual interaction mode gradually drifts away from the internal requirements of the curriculum practice.

The understanding of "environment", "ecology" and "environmental ecology analysis course" is not yet in-depth: without a true understanding of the complex ecosystem of their own real courses, it is difficult to fully deduct the relevant curriculum concepts.

Limited communication methods: there is a lack of in-depth, collaborative discussions on site. If not all participants are truly attentive, a large number of real and important issues are easily overlooked.

The group operation mechanism is not complete: for example, mechanisms for absorbing new members, effective actions, systematic collection and collation of data, and good interaction among members of the group have not yet been established.

…

### 7.2.4.2 Suggestions for follow-up actions

Deeply reflect and clarify the value factors of work and life, such as their respective outlooks on life, education, curriculum, and students, and establish concrete and feasible links with various activities in this group of curriculum experiments, in order to transform these activities into their own true "meaning".

When all members get along with anyone inside or outside the group and solve any problems, everything returns to "I", avoiding the habitual thinking and action mode of "from complaining about others and the environment to complaining about others and the environment".

Except for the specially invited instructors, all other members are participants, collaborators, listeners, consultants, and supporters to each other. Only in this way can we develop in real cooperation and realize different kinds of curriculums, education, and life in the developmental process!—Now or future, there will never be such a "curriculum fairy": he/ she develops a "curriculum recipe", and the followers can "copy the recipe" to cure the "various diseases of the curriculum", and to show the "supernatural power of teaching"!

In all communication occasions, everyone must treat each other with sincerity. Any questions and comments on all aspects of the communication content and the operation of the group itself, etc., should be expressed immediately, truthfully and completely.

During group operation, think more about each other: I think more about "If I were them, how would I feel about it", "If I was a junior teacher, how would I think about this matter", "If I faced the double pressure of life and work , how will I think about and act to this matter"...The team members also need to think about "If I were the organizer of this event, how would I plan and how to act", "If I were him, how would I respond to my own thoughts, words and deeds now"...

Before each seminar, preview the routine matters that you may be involved in your work and life in the next few days, so that you can confirm whether the items to be discussed next week are suitable in terms of content and workload.

Make full preparations before each seminar. After the seminar, be sure to practice group resolutions with quality and quantity, and do all the work you should do. If there is an emergency that causes work delay, it should be immediately explained in the group.

During the curriculum experiment, independent action and innovative thinking and actions are advocated. However, obvious adjustments that are different from the group's experimental ideas and resolutions should be explained in advance in the group message or seminar. It is not allowed to take a set of ideas and actions when participating in group discussion and communication, but take another set of ideas and actions when returning to the true educational situation.

On the basis of self-innovation and revolution, truly enter the thinking and action state of the experimental curriculum as soon as possible. All aspects of your study, work and life are actually ecological factors of the experimental curriculum you are operating. Therefore, you can regard everything you have experienced as a “problem” directly or indirectly related to the experimental curriculum, so that you can better calm down yourself, not be anxious or complaining, and really take the problem solving as the starting point and focus point- If we have the opportunity to cooperate in the future, any other type of experiments can be guided by this concept.

On the basis of active thinking and serious action, actively post your own real questions or experiences and inspirations in the group, and actively browse and reply to others’ questions and related messages when you are free.

Adhere to the integration of "theoretical learning-practical exploration-research reflection", and make reflections and records in a timely manner, such as diary.

Collect and organize all process data systematically and completely, and archive them in time.

Improve existing mechanisms for discussion, reading, and data upload, and gradually establish other mechanisms

…

# Chapter 8 The third stage of curriculum action research: design and implement in perseverance and clarity

When our action research goes further to the third stage, the thinking of the Environment ecological analysis curriculum has become more and more clear. Based on the accumulation of mentality, theory and practice in the first two stages, we have now reached the stage of designing and implementing a clear curriculum operation plan.

## 8.1 The formation of curriculum specific

No matter what kind of curriculum or curriculum model, in the development process, it is necessary to have support of the curriculum design plan from macro to meso and then to micro level to ensure that will be truly implemented.

### 8.1.1 Action background

The macro operation model of the class-based Environment ecological analysis curriculum has been constructed in the former part (See Figure 5-3 "The macro model of the class subject-based Environment ecological analysis curriculum operation"). Before the formal implementation, it is also necessary to design the corresponding meso-level implementation plan, so that the members of the curriculum research team can carry out operations at the micro level in conjunction with their real education and teaching situations.

After more than one year of theoretical study, group discussion and teaching practice, our curriculum research team has possessed many subjective and objective conditions for planning specific curriculum implementation plans

### 8.1.2 Action goals and plans

Build a curriculum implementation plan that is in line with the value pursuit of the Environment Ecological Analysis Curriculum of intellectual disability education, reflects the established curriculum goals of the curriculum research team, and meets the characteristics of the environmental conditions of the curriculum implementation.

In order to achieve this goal, before carrying out specific actions, it is necessary to collect and sort out the main theoretical learning materials at all early stages, systematically review all previous communication records of the research team, and summarize and reflect on their own experience and practice of the Environment ecological analysis curriculum.

## 8.1.3 Implementation and exploration

This step is mainly based on comprehensive consideration of the existing relevant theoretical and practical results, and careful consideration of the existing paradigms of the implementation of various ecological curriculums in intellectual disability education, to build a specific implementation model of the curriculum.

### 8.1.3.1Comprehensive consideration of existing relevant theoretical and practical results

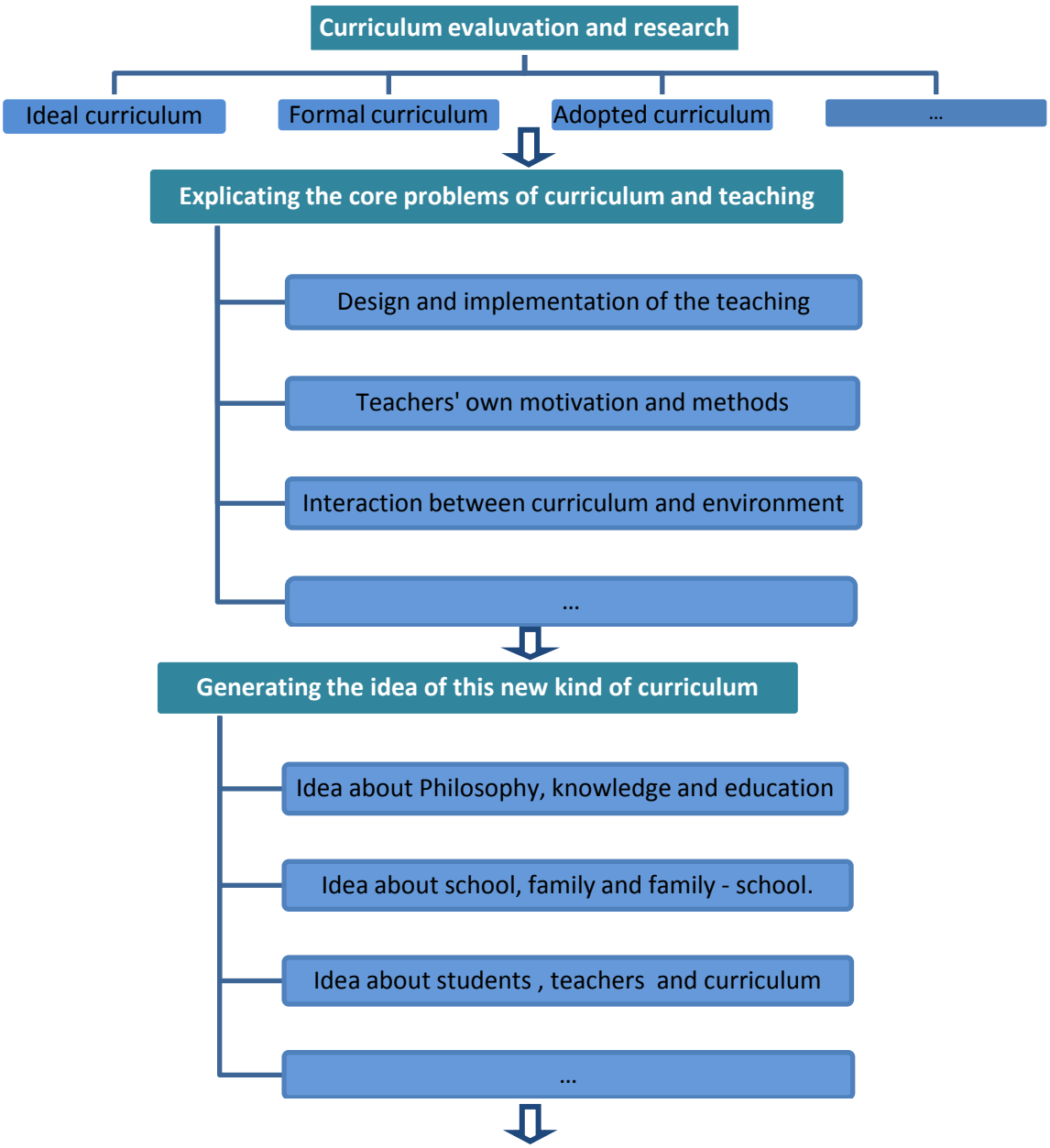
Since the establishment of our curriculum research team, we have systematically studied a large amount of literature in the fields of general curriculum and pedagogy, life education, situational education, individualized education and teaching, development and education of children with intellectual disabilities, and ecologism. In terms of practice, there are not only the improvement of the school's routine teaching or management, but also a lot of discussion and some attempts of the experimental courses. These are the important background and basic support for the design of specific curriculum programs. Therefore we take the ecological perspective, especially the Environment ecological analysis curriculum as the basic perspective and interpretation framework, and systematically sort out and review them.

### 8.1.3.2 Carefully consider the implementation paradigms of various ecological curriculums in intellectual disability education

As mentioned before (see 3.2.2.4 "Ecology Curriculum Implementation Model"), there have been sporadic studies on the implementation model of ecology curriculum in intellectual disability education in mainland China. They are our most direct reference and reflection objects. Therefore, we use the established interpretive framework to separately analyze the core issues, main content or core ideas, applicable conditions, features or advantages, limitations or deficiencies, core models or ideas of other scholars or institutions to solve similar problems of these models, attitudes and ideas for solving similar problems in own class or school, and inspirations for solving related problems first and review it collectively.

### 8.1.3.3 Construct the specific implementation model of the curriculum

On the basis of the first two steps, first of all, all the members of the curriculum team conceive the course plan based on their own understanding and thinking and upload it to the online group. After being submitted to the curriculum group, everyone reviews each other's plan. After collective review and confirmation, the following curriculum implementation plan has been finally formed (Taking a cycle of curriculum action research as an example):



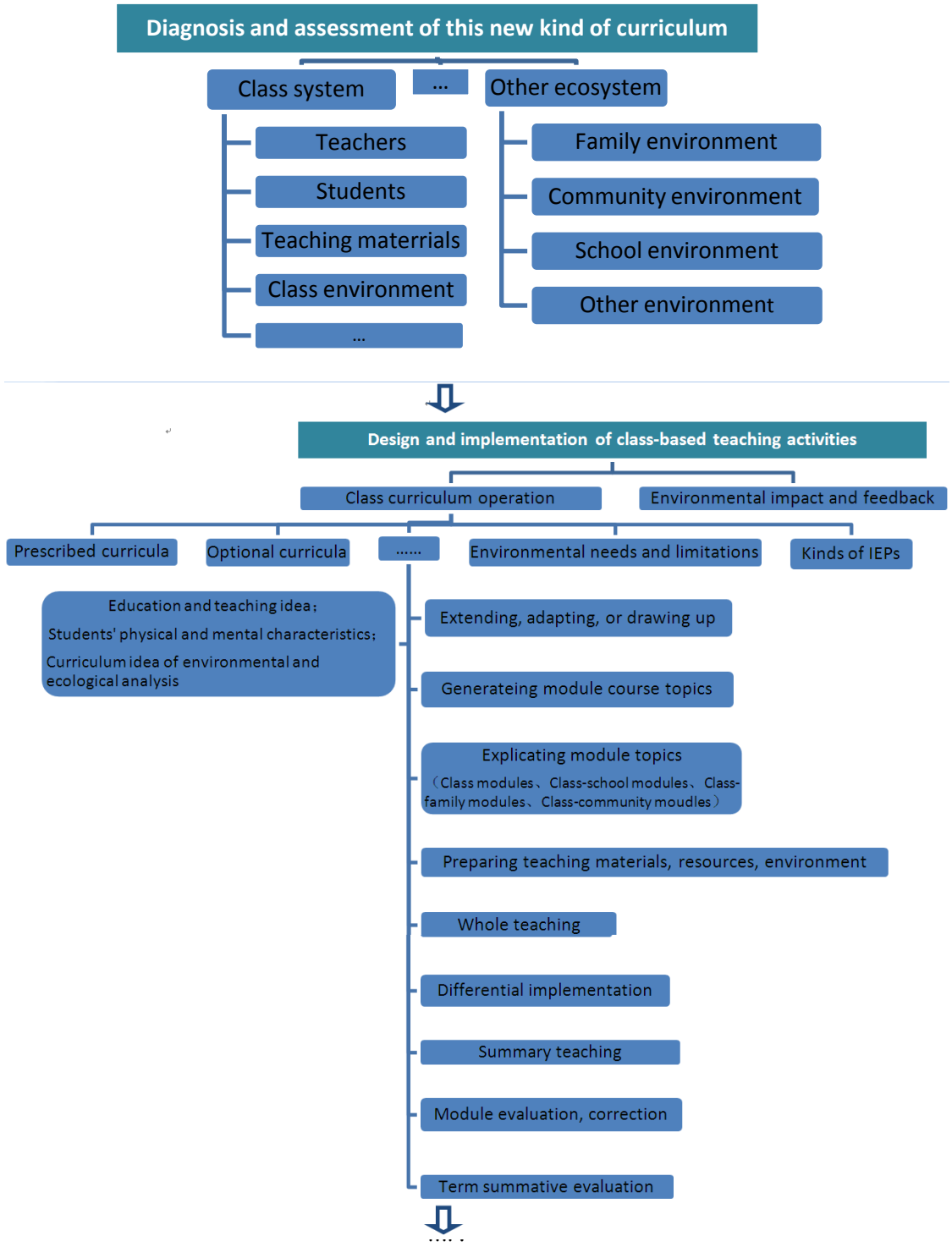



Figure 8-1 Implementation Model of Class-based Environment ecological analysis curriculum in Intellectual Disability Education

## 8.1.4 Summary and reflection

The final formation of the specific implementation model of the curriculum has inspired all members of our research team. It is an important sign that our research

has further matured. This model includes a lot of learning and thinking about the theory and practice of ecology curriculum in intellectual disability education. It is a model in developmental state and its scientificity and effectiveness are gradually improved along with our research advancements.

## 8.2 Implementation of the curriculum model

Curriculum implementation links to the designing of curriculum model and is a key stage of the curriculum operation. The implementation of our curriculums is based on the class taught by the team members, and takes a specific subject as an entry point. After the curriculum model matures, more disciplines and teachers can be involved in.

### 8.2.1 Action background

After more than one year of hard work, we have formed a relatively complete plan for the curriculum implementation. Some aspects of the class-based Environment ecological analysis curriculum in intellectual disability education have been tried in the early teaching activities, but they are not systematic. Through the study of core theoretical knowledge, a large number of discussions and communications, in-depth analysis and reflection on the real teaching environment, especially the preparation of specific implementation models since the establishment of the curriculum team, we have had the comprehensive conditions to implement such curriculums from the macro and meso level. Therefore, the teachers of the research team started the curriculum exploration at this stage under guidance of the specific implementation model of the curriculum.

### 8.2.2 Action goals and plans

The main action goals of this stage are as follows: under the conditions allowed by the real teaching environment, implement Environment Ecology Analysis Curriculum as completely as possible; in the process of action exploration, test, optimize and perfect the existing theoretical framework; through the curriculum implementation at this stage, accumulate necessary experience for future curriculum exploration of our curriculum research team.

In order to better achieve the above goals, the curriculum research team once again systematically sorted out the core theories from general curriculum and pedagogy to ecology curriculums in intellectual disability education. Besides, we also

sorted out and reviewed the various gains and losses since participating in the curriculum research, and once again confirmed the core thinking and consensus of the curriculum research team on such curriculums.

## 8.2.3 Implementation and exploration

The implementation of this stage includes macro evaluation of the curriculum; interpretation of the core issues of the curriculum and teaching; review of the concepts of class-based Environment ecological analysis curriculum; diagnosis and assessment of the situational ecosystem of the class-based Environment ecological analysis curriculum; preparation of IEP of class-based Environment ecological analysis curriculum; the design and implementation of class-based teaching activities; the specific steps of summarizing, reflecting, revising, and giving feedback.

### 8.2.3.1 Macro evaluation of the curriculum

Curriculum evaluation is rooted in curriculum research and education evaluation. It can provide rich information for the achievement of curriculum objectives, judgment of curriculum value, and educational decision-making. (Li &Huang, 1996)In the field of intellectual disability education in mainland China, the actual implementation of the curriculum evaluation is often narrow in content, mainly to evaluate the learning effect of the students with established teaching objectives. There is lack of due attention to other relevant participants of the curriculum, the teaching environment, and the implementation process or curriculum value in a broader sense. The design and implementation of the Environment ecological analysis curriculum in intellectual disability education is obviously situational, ecological, individualized. Therefore, it must be comprehensively evaluated before it can be better designed and implemented. Due to the lack of effective evaluation tools for such curriculums in mainland China, after systematically studying the existing theoretical results of curriculum evaluation, we have compiled a non-standardized curriculum evaluation checklist based on the characteristics and needs of our education and teaching situation. It contains six parts: ideal curriculum, formal curriculum, adopted curriculum, implemented curriculum, acquired curriculum and evaluated curriculum. Here is an example of our self-compiling checklist:

Table 8-1 Curriculum evaluation checklist in intellectual disability education

（evaluated subject： Math for life evaluation time： 09/09/2019 Reviewer： Gan ）

| Item | Content | Max. score | Score |
|---|---|---|---|
| Ideal curriculum | Familiar with the current basic concepts of intellectual disability education and its implementation path | 5 | 1 |
| | Familiar with the main ideas of current curriculums in intellectual disability education and their advantages and disadvantages | 5 | 1 |
| | Familiar with the development process of national, local and school curriculum concepts and their advantages and disadvantages | 5 | 1 |
| | Have own curriculum concepts that have risen to the level of belief | 5 | 1 |
| Formal curriculum | Familiar with the national curriculum experiment plan, curriculum standards and various teaching materials | 5 | 1 |
| | Familiar with various curriculums published by the local government, other schools and own school, and their advantages and disadvantages | 5 | 1 |
| Adopted curriculum | Familiar with relevant concepts and methods adopted by the curriculum | 5 | 1 |
| | Consistent with the relevant concepts, goals and other value pursuits of the country and intellectual disability education | 5 | 1 |
| | In line with the school’s development ideas and goals | 5 | 1 |
| | In line with students' multiple physical and mental development characteristics | 5 | 1 |
| | With abundant curriculum resources and ample space for choice | 5 | 1 |
| Implemented curriculum | Have clear ideas and methods to guide | 5 | 1 |
| | In line with the established ideas and value pursuit of the country and intellectual disability education | 5 | 2 |
| | The implementation process and methods meet the needs and limitations of students and the environment | 5 | 2 |
| | Complete curriculum components, including a series processes of individualized education | 5 | 2 |
| Acquired curriculum | Comprehensive and clear assessment of students' actual experience | 5 | 1 |

| | | | |
|---|---|---|---|
| | The curriculum students actually acquired is consistent with the established curriculum concept and design | 5 | 1 |
| Evaluated curriculum | Familiar with the main concepts and methods of curriculum evaluation | 5 | 1 |
| | Systematic evaluation of the curriculum that actually operated | 5 | 1 |
| | Proposed follow-up measures for curriculum innovation On the basis of evaluation and research | 5 | 0 |
| Total score | 28 | | |

In addition to the above curriculum evaluation checklist, in the curriculum evaluation, we also refer to students' IEP, the research results of relevant curriculums, and the tools compiled by other curriculum practitioners. The purpose is to enhance teachers' macro understanding of the curriculums they actually implement, enhance curriculum awareness, and enhance the suitability of the selected, adapted or self-compiled curriculum to real teaching situations.

**8.2.3.2 Interpretation of core issues in curriculum and teaching**

Combining the results of curriculum assessment checklist, individual reflection on teaching from teachers, evaluation of the implementation of IEP, review and discussion of the curriculum research team, observations and interviews with students, we have summarized and sorted out our own issues about curriculum and teaching by taking the main factors of curriculum& teaching and their interactions as the basic analysis clues. And within the established curriculum implementation model, we have put forward subsequent improvement strategies. The following is an example of question reflection and summary based on our self-compiled curriculum evaluation checklist.

Table 8-2 Cases of Interpretation of Core Problems in Curriculum and Teaching

（evaluated subject：Chinese for life Evaluation time：16/09/2019 interpreter：Wen）

| | |
|---|---|
| Summary of inspection results | 1. Unfamiliar with intellectual disability education, curriculum concept and curriculum development, only 1-2 points.<br>2. With little knowledge of the official curriculum issued by the country, and its advantages and disadvantages, 1 point.<br>3. Not clear of the relevant concepts adopted in the curriculums; the adopted curriculum is not highly in accordance with the students' characteristics and development concepts of the school; the curriculum resources are few and there is not enough space for choice, 1 point.<br>4. Curriculum implementation is more random, and there is no clear idea and method to guide; the implementation process is not well-matched with students and the environment; curriculum elements are missing and there is no individualized education, 1-2 points.<br>5. There is no evaluation of students' actual experience; the curriculum experienced by students is quite different from the established curriculum, 1-2 points. |
| Advantages of practical courses | 1. The curriculum meets the physical and mental development characteristics of some students;<br>2. There are textbooks as blueprints and the curriculum is adapted on the basis of the textbooks. Then the teacher's pressure is less;<br>3. With high level of arbitrariness, it can be changed as needed during implementation. |
| Disadvantages of practical courses | 1. There is no clear idea and method to guide, and the teaching materials are adapted based on the teacher's subjective will;<br>2. The implementation process and methods do not meet the needs and limitations of some students;<br>3. Missing curriculum elements, not including individualized education, etc.;<br>4. No comprehensive evaluation of the students' actual experience;<br>5. The actual acquisition of students is inconsistent with the established curriculum concept design;<br>6. No systematic evaluation of the operating curriculums. |
| Measures for subsequent improvement | 1. Clarify the concepts and methods of curriculum implementation;<br>2. Adapt the textbooks so that the content of the textbooks meets the needs of students;<br>3. Develop IEP for each student;<br>4. In addition to the final exam test, evaluate students' learning in various<br>5. ways;<br>6. Use the curriculum evaluation checklist to evaluate the curriculum. |

### 8.2.3.3 Review of the concepts of ecological curriculum once again

As mentioned before (see Table 5-1 "Characteristics of the Ecology Curriculum: Based on Comparison with Traditional Curriculum"), compared with traditional curriculums represented by subject curriculum, ecology curriculum has its own unique concepts or specific operation methods the range from outlook of philosophy, knowledge and education to views of school, family and home-school, and further to perspectives of students, teachers, and curriculum. After a lot of theoretical study and practical exploration in the early stage, especially the

comprehensive evaluation of the actual curriculum implementation, combined with their own real education and teaching situations, team members once again reviewed and confirmed the core ideas of the ecology curriculum, which is conducive to maximally maintain or even enhance the ecological nature of the subsequent stages of curriculum operation.

Therefore, our curriculum research team once again reviewed the core concepts of the ecological curriculum in a way of individual study and collective discussion, and made a tentative analysis of possible problems and countermeasures in the process of subsequent curriculum exploration.

**8.2.3.4 Diagnosis and evaluation of the contextual ecosystem of the curriculum**

Based on the thinking of the macro model of the ecological curriculum, especially the operation of class-based Environment ecological analysis curriculum in intellectual disability education, the curriculum diagnosis and evaluation we implemented have common features compared with the traditional individualized education and teaching, but also have the uniqueness under the guidance of the ecological philosophy. We divided the entire assessment into three major sections: the assessment of the class system, the assessment of other courses' ecosystems, and the assessment of the relationship between the class system and other courses' ecosystems. The specific ideas and operating strategies are as follows:

The evaluation of the "class system" includes the evaluation of teachers, students, experimental courses, other courses, class physical and spiritual environments. The evaluation of teachers is mainly the evaluation of teachers' personal situation (for the main content, please refer to "6.2.3.4 Conducting personal professional development evaluation and planning"); For the evaluation of students, several curriculum-based assessment scales are mainly used to evaluate students' psychological traits, physical traits, class adaptation, academic status, and special needs; for curriculum evaluation, the self-compiled curriculum evaluation checklist is mainly used; for the evaluation of the class physical and spiritual environment, the analysis table of the utilization degree of educational and teaching environment resources and the analysis table of teaching resources are mainly used (see "7.2.3.4, 7.2.3.5 for the main content")

The assessment of "other courses' ecosystem" includes family, school, community, natural environment, social environment, etc. The main tool is the self-compiled situation system assessment form of Environment Ecology Analysis

Curriculum. Taking the evaluation of the “community” situation ecosystem as an example, the structure and content of our evaluation table are shown in the following table:

Table 8-3 Contextual system assessment form of Environment Ecology Analysis Curriculum（take the community as an example）

（Name of the course：Chinese for life Evaluators：Wen Evaluation time：17/10/2019 ）

| First level contextual factor | Last level contextual factors | Actual utilization degree | | | | | Subsequent adjusting strategies for contextual factors with actual utilization degree ≦ 2 |
|---|---|---|---|---|---|---|---|
| | | 0 | 1 | 2 | 3 | 4 | |
| 2.Community | 2.1.1.1 Regulatory resources | | | | ☆ | | Recommend parents to bring students to the community to play, recognize and use community items, and learn the excellent behavior of the residents. |
| | 2.1.1.2 Management solution resources | | | | ☆ | | |
| | 2.1.2.1 Harmonious community atmosphere resources | | ☆ | | | | |
| | 2.1.2.2 Residents outstanding personal qualities | ☆ | | | | | |
| | 2.2.1.1 Space resources | | ☆ | | | | |
| | 2.2.1.2 Environmental creation resources | | ☆ | | | | |
| | 2.2.1.3 green resources | | ☆ | | | | |
| | 2.2.2.1 Residents’ occupation | ☆ | | | | | |
| | 2.2.2.2 Residents’ skills | ☆ | | | | | |

**Notes：**

1. "Actual utilization degree" includes two parts: the breadth and depth of utilization. The comprehensive grading meanings of each level are: 0. completely unutilized; 1. utilization of a small part; 2. basic utilization; 3. utilization of majority; 4. complete utilization. When evaluating, mark ☆in the space of the corresponding level
2. "Last-level course contextual factor" refers to the last level corresponding to each"first-level course contextual factor", and reflects the situation factors of each course in the real education and teaching, the actual use of course resources. When filling in, determine the final number of items according to the specific content, and adjust the form yourself.

In order to better present, organize, and analyze the results of the situation system assessment form, we also designed a corresponding assessment result arrangement and reflection record form. The main content includes course contextual factors, main advantages of factor utilization, main disadvantages of factor utilization, and subsequent improvement measures. Still taking the assessment of the “community” situation ecosystem as an example, the structure and contents of the assessment record table are shown in the following table:

Table 8-4 Assessment result collation and reflection

(Taking the community as an example)

| Contextual factor | The main advantages of this factor | The main disadvantages of this factor | subsequent improvement measures |
|---|---|---|---|
| 2.Community | 1. In subtle use of spiritual resources and material resources, especially material resources. | 1. Insufficient use of spiritual resources;<br>2. In the past, little attention was paid to resources related to the "community". | 1. Pay attention to the development and utilization of community resources and strengthen class-community cooperation;<br>2. Change the application method of “subtle to deliberate attention and application. |

The evaluation of "class system" and "other courses’ ecosystem" is mainly to analyze the impact and role of "class system" on the concept, knowledge, technology and material of "other curses’ ecosystem” through various forms of activities; analyze the impact and role of the "other courses’ ecosystem" through its various forms of activities on the material, technology, knowledge, and ideas of the "class system".

In the process of actual operation, the above three aspects of the diagnosis and evaluation of curriculum situation ecosystem have comprehensively adopted various methods such as observation, interview, assessment scale, and actual operation.

**8.2.3.5 Preparation of individualized education plan (IEP)**

The IEP is the objective system of the Environment ecological analysis curriculum of intellectual disability education, as mentioned above (for details, see "5.2.2.2 Objectives of the Environment ecological analysis curriculum"). According to our understanding, the objectives of the Environment ecological analysis curriculum have the following features: all course contextual factors and their interactions in the “class system” and “other ecosystems” are potential sources of the objectives; the basic value orientation and types are mainly behavioral objectives, but they also involve a lot of universal objectives and general objectives and creative

objectives; objective expression and description go beyond the current mainstream expressions, and are more abundant and flexible in terms of the subject, object, situation, and results.

Guided by the above concepts, on the basis of curriculum evaluation, interpretation of core issues, review of ecological concepts, especially the assessment of the curriculum contextual ecosystem, the biggest difference between the IEP we have prepared and the traditional form is to divide the IEP into four subsystems that are closely related to each other: IEP within the class system, "class-school" plan, "class-family" plan, "class-community" plan. The four objective systems reflect the four basic dimensions of the complex relationship between the class system and the center curriculum that it focuses on and its surrounding environment system. This division also echoes the two core characteristics of the research theme: "class-based", "environmental ecological analysis". Therefore, they play an equally important role in curriculum development. The core content and framework of the IEP we used are shown in the following table:

Table 8-5 Examples of IEP for class-based Environment ecological analysis curriculum

1. The proposed person: _____
2. Applicable classes: _____
3. Proposed time: _____year _____month_____day— _____year _____ month_____day
4. Type of plan (checked): （ ）IEP within the class system （ ）"class-family" plan
（ ）"class-school" plan； （ ）"class-community" plan
5. Contents of the plan★：

| Field or theme | Objective （According to "class", "class-school", "class-home", "class-society" and long-term objectives, short-term objective present separately） | Evaluation criteria & | Objective achievement※ | | | | | Teaching decision☆ | | | Subsequent adjustment strategy* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0 | 1 | 2 | 3 | 4 | terminate | retain | adjust | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

Notes：

(1)★When this table is used, the specific number of "field or theme" and "objective" should be determined according to the content and concept of the "Unit Teaching Semester Plan of the Class-Based Environment ecological analysis curriculum".

(2) & Each field or theme can have different evaluation criteria.

(3) ※"Objective achievement": "0": completely unachieved; "1": small portion achieved; "2": basically achieved; "3": achieved the majority; "4" fully achieved
(4) * The objectives needed to "retain", especially "adjust" in "teaching decision" needs to be filled in.
6. Signature of the evaluator:
7. Evaluation time:

### 8.2.3.6 Design and implementation of teaching activity

The design and implementation of the teaching activities of the Environment ecological analysis curriculum in intellectual disability education involve two major systems: the class curriculum operation system; the environmental system composed of schools, families, communities and other ecological factors. The two systems interact with each other, influence each other, and provide frequent feedback. For our course action research, the most basic and most important is the class curriculum operation system, because the teacher itself is the most active and dominant curriculum factor in the system, and the operation status of the class system not only affects its own direction and trend of existence, development and evolution, but also affect the curriculum environment system and the feedback and integration between the two systems. Therefore, the design and implementation of our teaching activities mainly take the class system as the starting point, by optimizing the relationship between the various curriculum ecological contextual factors within the class system, improving its function and the efficiency of the entire system operation, and then developing the potential of the environmental system and promoting the integration of environmental resources and class systems.

Under the guidance of the above ideas, the first step in the design and implementation of our teaching activities is to comprehensively collect the prescribed curriculums in the school, other curriculum that can be selected, the needs and restrictions of the environment, various IEPs that have been established. Then based on the basic value trade-off standards of the basic concept of special education, the physical and mental development of students, and the theoretical model of Environment ecological analysis curriculum, the curriculum materials are comprehensively reviewed and selected, and the curriculum theme or macro content to be implemented are established through specific methods such as extension, adaptation, and self-development.

Our main teaching mode is the unit theme teaching of "taking life as the core", so the most important work connecting to the previous step is the determination and

interpretation of the theme of the curriculum unit: firstly make a semester overall plan of the unit themes, and then design each unit in detail. Similar to the principles of IEP, the basic dimensions for planning and analyzing unit themes are also the class system itself, "class-school", "class-family", and "class-community". Then prepare teaching materials, resources, and environment. Finally, follow the steps of overall teaching, differentiated implementation, and summative teaching to gradually end the teaching of one unit. The unit teaching overall plan and the core content and basic structure of analysis and implementation are shown in the following table:

Table 8-6 Example of unit teaching overall semester plan of Class-based Environment ecological analysis curriculum

（Subject：_____Applicable class：_____Teacher：_____ Compiling time：_____）

| Teaching time | Unit themes | Various teaching objectives |
|---|---|---|
| Month day<br>\|<br>Month day | | Class system internal objectives |
| | | |
| | | "Class-family" objectives |
| | | |
| | | "Class-school" objectives |
| | | |
| | | "Class-community" objectives |
| | | |

Notes：

1. The final number of "unit theme" and "various teaching objectives" shall be determined according to the relevant educational teaching concepts or management regulations.
2. The "various teaching objectives" in this table are mainly various long-term objectives corresponding to each "unit theme"; more detailed short-term objectives are presented in the "Semester Individualized Education Plan of Class-based Environment ecological analysis curriculum".

Table 8-7 《name of subject》example of unit teaching overall design

（name of unit:___class:___teacher:___teaching time:___designing time:___year__month__date）

| | |
|---|---|
| Objectives of unit teaching | |
| Analysis of unit | |

| theme | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Behavioral objectives | Student1 | Student2 | student3 | student4 | student5 | student6 | student7 | student8 | student9 | student10 | Students' name… |
| | | | | | | | | | | | |
| Creation of relevant environment and conditions | | | | | | | | | | | |

Overall teaching → Differentiated implementation→ Summative teaching

| Time | | | | | |
|---|---|---|---|---|---|
| Initial activity<br><br>Main activity<br><br>Practice<br><br>Summative activity | | | | | |
| Teaching resources | | | | | |

Notes：

This table is adapted from Li Baozhen, editor-in-chief of Dai Yumin, Ecological Journey-Creative Teaching Going Forward • Attachment: Tables • Table 15, pages 228-229, Chongqing JiangjinXiangyang Children Development Center, 2003.

### 8.2.3.7 Summary, reflection, correction, feedback

Before the end of the each unit teaching, the appearance evaluation mode is used to evaluate the overall status of the entire unit teaching. The problems or useful experiences revealed by the evaluation results are fed back to the teaching of the next unit in time. Before the end of the entire semester, there are semester summative assessments of all aspects of teaching. The summative evaluation of the last semester can be fed back to the curriculum operation process of the next semester after being sorted, reflected, and revised. TheEnvironment Ecological Analysis Curriculum is in

such a cyclical, spiraling, and endless dynamic evolution, constantly deducing the wonderful stories of ecological curriculum about students and environment, teachers and environment, courses and environment.

### 8.2.4 Summary and reflection

During the curriculum action research at this stage, the teachers of the curriculum team overcame many difficulties and tried the main stages of the Environment ecological analysis curriculum in their own real teaching environment, guided by the established theoretical ideas. It has initially proved the feasibility of the theoretical models of curriculum design and implementation, and has accumulated rich theoretical and practical experience for our future curriculum exploration. However, since this is the first exploration, we have been thinking, discussing, designing, and implementing about all aspects of the curriculum, which has also affects the quality of curriculum implementation.

# Chapter 9 Research conclusions and enlightenment

## 9.1 Conclusions

### 9.1.1 The ecologism curriculum of intellectual disability education in mainland China is still in an initial development stage with many difficulties

According to the results from survey study, the development status of the ecology curriculum in intellectual disability education in mainland China is not optimistic. Most teachers haven't have the professional skills and environmental conditions to fully design and implement such curriculum yet, and most schools still lack systematic and mature theoretical and practical experience when operating such curriculum. According to the results from literature research, independent theoretical research and practical discussion of such curriculum in mainland China is neither comprehensive nor in-depth, and a consensus of research and practice paradigm has not yet been formed. According to the entire process of our curriculum action research, although this kind of curriculum can be implemented at least at different levels under strong motivation and good organization, the relevant theoretical and practical experience is still extremely lacking. Therefore, from an overall point of view, independent ecology curriculum of intellectual disability education in mainland China is still in its initial stage of development.

However, from the perspective of the development trend of intellectual disability education in the world, especially the curriculum system in intellectual disability education, such curriculum is extremely important. As a special educator in mainland China, we need to build confidence, increase courage, double our efforts, and at the same time explore from both theoretical and practical aspects. Then we can construct the ecology curriculum system of intellectual disability education with a global atmosphere and Chinese characteristics

### 9.1.2 The beginning teachers of intellectual disability education in vulnerable special education schools can also design and implement environment ecological analysis curriculum well

As mentioned above, the results of the written interviews before our curriculum action research indicate that scholars in mainland China still have controversial viewpoints about whether special education schools with general conditions or intellectual disability education teachers with limited teaching experience and professional qualities can implementEnvironment Ecological Analysis Curriculum. Our action research shows that, for the beginning teachers of intellectual disability education, even if all the conditions of the school are in a weak position, as long as they have the determination and perseverance to innovate themselves and change the curriculum, under good guidance, they can design and implement environment ecological analysis curriculum well.

### 9.1.3 In the process of designing and implementing environment ecological analysis curriculum, the beginning teachers of intellectual disability education face many challenges and particularities

Both our literature analysis and action research have shown that in the process of designing and implementingEnvironment Ecological Analysis Curriculum, the beginning teachers of intellectual disability education face various challenges and pressures from themselves, the environment and the interaction between themselves and the environment. For example: the motivation and value orientation of participating in the curriculum experiment, the lack of relevant theoretical knowledge, the conflict between the curriculum experiment and their other affairs, the gap between the curriculum concept and the actual implementation of the curriculum, and the contradictions with other people, things and objects in the working environment ...In addition to these common challenges, because the beginning teachers are in a special stage of their life development and career cycle, they are facing with special situations such as love, marriage, further study, determination of professional positions, attention to professional competence and survivability and so on. These broad personal life and professional backgrounds are important contextual factors for the design and implementation of the curriculum, and directly or indirectly affect the scope and extent of their participation in curriculum experiments. This is also an important reason why some teachers chose to withdraw during the operation of our curriculum research team.

### 9.1.4 The key to the smooth progress of the design and implementation of the environment ecological analysis

**curriculum in intellectual disability education lies in upholding the principle of close integration of theory and practice and its sequential development.**

The previous survey study and literature analysis have shown that there are many controversies and myths in the current ecology curriculum of intellectual disability education in mainland China from theoretical basis, to curriculum design, and then to implementation and evaluation. In order to effectively promote the benign development of this kind of curriculum, both from the perspective of curriculum design and implementation, it is necessary to organically integrate theory and practice, and gradually advance in stages. This is not only helpful to understanding the theoretical basis and performance of such curriculum in terms of ecologicalism, post-modernism, situational education, and individualized education from the source of theoretical thought, but also conducive to meticulously and deeply implement theoretical ideas into the specific field of education from a practical perspective. Only in the process of frequent and close interaction between curriculum theory and practice can the curriculum develop continuously and with high quality. Taking our curriculum action research as an example, activities such as theoretical reading, action reflection, group discussion, and curriculum practice are closely integrated in different forms and of different contents at different stages of the curriculum development. Of course, this process is full of hardships and challenges, and it is a test of the true motivation of each member of the curriculum team and the mutual understanding of each other.

## 9.2 Enlightenments

### 9.2.1 Seeking the entry point combining theory with practice is one of the key links for the smooth development of any curriculum

Under the guidance of the same or similar concepts or theories, the same type of curriculum can have different implementation modes. The key lies in taking theory as the basic reference or guide, combining with specific educational situations, finding a balance between students, knowledge (idea) and environment, and externalizing it as the basic analysis path of the curriculum, which is the entry point. Only in this way can we design curriculum that is more in line with contextual

characteristics and needs, more suitable for students' physical and mental development traits, and more able to take into account the connotation of knowledge and skills.

Taking our curriculum action research as an example, in order to put the core concepts of ecologism into effect as much as possible, we have constructed four "ties" that connect the class curriculum system with other environmental systems: "class system", "class-family system", "class-school system", "class-community system". These four systems are also like four "pillars", which set up a macro and meso framework for the operation of the class-basedEnvironment Ecological Analysis Curriculum. These links and pillars are the four ecological chains and four ecological channels that the class curriculum system communicates with the outside world, transmitting the energy and information of the entire curriculum ecosystem. They are interconnected and interact with each other. At the same time, they connect the concept of the class-basedEnvironment Ecological Analysis Curriculum and related specific practical activities: just because of their existence, the concept of the ecological curriculum can be implemented into effect, and the relevant practical activities can have the spiritual core of the pursuit of the curriculum concept.

### 9.2.2 The construction and development of the curriculum team is the critical guarantee for the smooth progress of the curriculum research

The setbacks and difficulties encountered in the process of our curriculum action research are all related to the limited experience of construction and development the curriculum team, and the entire team has not formed a good and mature operating mechanism. In fact, the most critical factor in the design and implementation of any curriculum is the "person", that is, the designer and implementer of the curriculum. Their motivation, methods, diligence, and utilization of environmental resources in the curriculum will have a direct or indirect impact on the development of the entire group. Therefore, any curriculum research should not only focus on the curriculum itself, but should also pay close attention to the construction and development of the curriculum team. To this end, in the process of curriculum research, the motivation mechanism, problem discovery and resolution mechanism, action practice mechanism and interaction mechanism with environmental resources of course team operation should be gradually constructed. To

this end, in the course of course research, the motivation mechanism, problem discovery and resolution mechanism, action practice mechanism and interaction mechanism to environmental resources of curriculum team operation should be gradually constructed.

### 9.2.3 The action research model of the cooperation between special educators in higher education institutions and teachers in special education schools is an important path for the curriculum development of intellectual disability education

Due to the difference in the nature of work, special educators in higher education institutions and teachers in special education schools have their own advantages: relatively speaking, the former is mainly engaged in theoretical teaching, research and development, mastering more theoretical resources; the latter is mainly engaged in practical teaching operations, being with more practical experience. The cooperation between the two can better realize the integration of theory and practice, which is consistent with the value pursuit of the curriculum in intellectual disability education. The cooperative action research model of the two is not only helpful to a more comprehensive and rational construction of the theoretical system for the curriculum development of intellectual disability education, but also to the application of relevant theoretical ideas to the specific scenarios of curriculum implementation. However, due to various factors such as personal characteristics, curriculum nature, environmental characteristics, and cooperation models, the cooperation between the two is also full of challenges. It is necessary for the two parties to seek a long-term communication mechanism in the long-term interaction process.

# Chapter 10 Research reflections and prospects

## 10.1 Ethical issues of the research

As the initiator and organizer of the curriculum action research, I attach great importance to related ethical issues throughout the process of curriculum research. For example: before officially participating in our curriculum research group, each participant has been informed of the background, motivation, content, method, process, method and authority of all materials used; before formally participation in the curriculum research group, they have also been informed of the problems and challenges they may encounter, especially the difficulties it may cause to their work and life; in the process of participating in the curriculum activities, each member can voluntarily choose to continue the activity or withdraw from the group according to agreed rules; throughout the entire process of cooperation, I repeatedly remind myself that the most appropriate role in the curriculum team is to be a participant, collaborator, learner, communicator, consultant, negotiator rather than a mentor; in the entire process of the curriculum operation and the presentation of the research results, I followed the principle of "confidentiality" and didn’t disclose the private information of the collaborators and the schools; each part of this thesis is clearly marked wherever the research or practical results of others are involved ...

## 10.2 Innovation of the research

Compared with the existing research in mainland China, this study has built four basic ecological links in terms of "class system", "class-family system", "class-school system", "class-community system" in the implementation process of the class-basedEnvironment Ecological Analysis Curriculum based on a diversified perspective of ecologism, starting with the relationship between the class and the school, family, community, and embodied it into an operable curriculum operation mode (see "Figure 8-1 Implementation model of the class-based Environment Ecological Analysis Curriculum of intellectual disability education"). This is a major supplement and expansion of existing research in this field.

We always put the learning and application of thinking methods, especially the "situational interpretation thinking mode of problem", throughout the process of action research, and put it on the specific curriculum design and implementation methods, which effectively enhances participants' abilities to ask questions, analyze problems and solve problems.

## 10.3 Deficiencies of the research

In general, our curriculum is still at the stage of formal exploration from the macro and meso level, and improvement of our previous courses from the overall perspective. The meticulous research on the micro level of the curriculum is not enough. Besides completeness, the fluency, anti-interference and flexibility of curriculum operation also need to be strengthened. In addition, the motivation, methods, actions, and interaction with the environment of the curriculum team need to be further optimized.

Although we also strive to coordinate the relationship between the curriculum experiment and each participant's routine activities in school, and strive to integrate together for implementation. However, due to differences in concepts and specific content, the contradiction between the two is sometimes very prominent, so that participants often struggle with how to coordinate the relationship between the two things. For example: how to tolerate the difference between the two in ideology (sometimes the concepts are totally opposite), how to deal with the relationship between the ideal curriculum experiment and real work, how to allocate time and energy between the two reasonably... Improper handling of these relationships will cause great psychological distress to the participants until they finally withdraw from the curriculum research and return to their daily routine work.

Our curriculum action research is mainly an activity that the curriculum participants voluntarily and spontaneously conduct based on their common professional interests. Therefore, other teachers or administrators of each participant's school did not participate, which directly led participants lacked strong support in conducting curriculum research in their schools, which in turn affected the motivation and quality of further participation.

## 10.4 Prospects of the related research

Any curriculum experiment is a long and arduous process, and will generally go through the following process: propaganda, motivating and team building before the curriculum experiment→ guided by the core concepts of the curriculum, the practice mode of macro and meso level of curriculum operation as the curriculum appearance is constructed→ further improve the meaning of the curriculum at micro level→ coherent, comprehensive and complete implementation of the various concepts and contents of the curriculum from the macro to the micro level→ while further improving the entire process of the curriculum implementation, comprehensively and systematically organize, reflect on, summarize the success and failure of the curriculum operation, and find the growth points for the future development of the curriculum. Our curriculum action research is still in progress. According to the above ideas, the next step is to pay attention to the design and implementation of the micro levels ofEnvironment Ecological Analysis Curriculum, and finally form a more complete and rich theoretical and practical system for this curriculum.

In addition to the ideas and analysis framework presented in this study, corresponding theoretical and practical framework can also be constructed from the perspective of a certain theory of educational ecology, a specific course context system, or a specific field of student development for the design and implementation of theEnvironment Ecological Analysis Curriculum in intellectual disability education.

Guided by the curriculum chain of ecological level in intellectual disability education (see "Figure 5-1 A schematic diagram of the ecological level of common curriculum types of intellectual disability education in mainland China"), we will further explore more ecologically oriented curriculum after theEnvironment Ecological Analysis Curriculum of intellectual disability education.

Other curriculum action researchers can also draw on the basic ideas and experience accumulated in the theoretical construction, implementation mode, team building and other aspects of this research.

## 10.5 Personal harvest and growth

Through this arduous, interesting and meaningful curriculum exploration journey, I have read a series of books on curriculum theory, ecology, and ecology curriculum, which greatly broadened my horizons and deepened my understanding of various aspects of ecological curriculum in special education. Through cooperative action research carried out with partner teachers, I have a richer and deeper understanding of the series of processes for organizing and implementing similar curriculum experiments, especially many reflections on the construction and development of the curriculum research team will be a valuable asset for future curriculum exploration for me. Meanwhile, I also deeply realize that I have too many shortcomings in personality cultivation, professional development, etc. Only by introspection, diligence, and constant innovation can I achieve a better self!

Curriculum exploration is a road where light and darkness, clarity and blur, closeness and distance, simplicity and complexity blend into each other, and develop dynamically. The road ahead is long, and I shall search high and low.

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# Appendix

## Appendix A:

### A questionnaire about the design and implementation of the beginning teachers' ecological curriculum in intellectual disability education

Dear teachers:

Thank you very much for your participation in filling out this questionnaire! The purpose of this survey is to acquire the present situation, difficulties and needs, and collect the relevant opinions or suggestions about the design and implementation of the beginning teachers' ecological curriculum in intellectual disability education for subsequent researches and improvement. This questionnaire is carried out anonymously, and the answers are not right or wrong. The relevant private information about you and your school will not appear in the study and the findings are only for the research. I hope you truthfully fill in the relevant information, your opinions are of great value to this research, thank you very much for your participation and support!

**The instructions about filling:**

1. The questionnaire is filled out by the teachers who are less than or equal to 5 years in intellectual disability education.
2. It will take about 20-30 minutes to fill out this questionnaire. Please read the relevant items carefully and fill in the answers you think are appropriate at the "( )" or "——" according to the instructions.
3. If there are no special descriptions, all of them are single choice in the selected questions sections.

**Part One Basic information about you and your school**

**Ⅰ. Your personal basic information**

( ) 1. Your gender is:

A. Male B. Female.

( ) 2. Your teaching age in intellectual disability education is:

A. < 1 year B. 1-2 years C. 2-3 years

D. 3-4 years E. 4-5 years

( ) 3. Your age is:

A. ≤25 years old B.26 - 30 years old C. 31 -35 years old D. ≥36 years old

( ) 4. Your degree of education is:

A. College B. Undergraduate C. Postgraduate

( ) 5. Your professional background is**(can select multiply)**:

A. Special education or educational rehabilitation majors

B. Other non-arts and sports pedagogy or psychology majors

C. Arts or sports majors

D. Others

**Ⅱ. Basic information about your school**

( ) 1.The history of the school establishment:

A. ≤ 3 years B. 4-6 years C. 7-10 years D. ≥11 years

( ) 2.The history about the establishment of the intellectual disability education department (class) in your school:

A. ≤ 3 years B. 4-6 years C. 7-10 years D. ≥11 years

( ) 3.The location of the school is:

A. village or town B. District, county or county-level city

C. City D. Provincial capital city

( ) 4.The existence form of the special education school (class) is:

A. an independent school

B. Attached to an ordinary primary or secondary school, but has independent system

C. Belonged to an ordinary primary or secondary schools

( ) 5.The categories of students with special needs in your school(class) are（**can select multiply**）：

A. Intellectual disability B. Autism C. Learning disorder

D. Deaf E. Cerebral palsy F. Blindness

G. Language disability H. Limb disorder I. Others

**Part two The general curriculum and teaching situation of yours**

**I. Your personal curriculum and teaching situation**

( ) 1. Your current work at school are as follows（**can select multiply**）:

A. Subject teaching B. Head teacher's work

C. School administrative affairs D. Social service out of school E. Others

( ) 2. Your current weekly workloads that can be clearly accounted are about:

A. ≤10 class hours B. 11-20 class hours

C. 21-30 class hours D. ≥31 class hours

( ) 3. Your responsible courses in the intellectual disability department this term are （**can select multiply**）:

A. Living language and literature B. Living mathematics C. Living adaptation

D. Labor skills E. Sing and rhythm F. Painting and handwork

G. Sports and health care H. Information technology

I. Rehabilitation training J. The second language K. Art and leisure

L. School-based curriculum M. Vocational education

N. Others (**if selected, please list the courses**:_____)

( ) 4. Up to now, the main sources of theoretical knowledge or technologies related to your curriculum and teaching are **(select multiply, please sort backward from the most important item)**:

A. Relevant pre-service education B. post-service school-based researches

C. Post-service self-study D. Post-service training for the academic degree

E. Post-service training out of school that not for the academic degree

( ) 5. Your current curriculum and teaching-related knowledge is composed of **(If select multiply, please sort backward from the most important item)**:

A. Curriculum and teaching theory on general education

B. General curriculum and teaching theory on special education

C. Specific curriculum and teaching theories on a subject or field in special education

D. Curriculum and teaching theories related to educational rehabilitation.

E. Others

( ) 6. In addition to the classroom teaching in the department of intellectual disability education, other educational activities that you have often presided over or participated in since you entered the post are（**can select multiply**）:

A. Other teaching or research activities inside the school

B. "Home-school" or "class-school" cooperative activities

C. Deliver the teaching to the door

D. Supportive activities for the disabled in communities

E. Communication, training or further education out of school

F. Activities related to out-of-school integration education

G. Others (**if selected, please list the main activities or other relevant information:**_____)

( ) 7. Since you are engaged in intellectual disability education, the types of courses that you have often actually implemented are **(If select multiply, please sort backward from the most important item)**:

A. Discipline curriculum B. Domain curriculum

C. Life-unit curriculum D. Activity curriculum

( ) 8. The forms of teaching organization that you often use at present are:

A. Collective B. Group teaching

C. Individual teaching D. Integrative form

( ) 9. The learning phase you currently guide are（**can select multiply**）:

A. Pre-school section B. Primary school section C. Junior school section

D. General or vocational high school section E. Adult education section

( ) 10. The course and teaching resources that you have actually developed and utilized for a long time are **(select multiply, please sort backward from the most important item)**:

A. The resources of teachers and students inside the school

B. Playing and teaching aids resources inside the school

C. Parent resources D. Community resources

E. Network information resources F. Other social or natural resources

## Ⅱ. Curriculum and teaching situation about the department of intellectual disability education in your school

( ) 1. The courses actually offered are as follows:

A. Living language and literature B. Living mathematics

C. Living adaptation D. Labor skills E. Sing and rhythm

F. Painting and handwork G. Sports and health care H. Information technology

I. Rehabilitation training J. The second language K. Art and leisure

L. School-based curriculum M. Vocational education

N. Others (**if selected, please list the name of courses**:_____)

( ) 2. The frequency of collective learning on curriculum and teaching related theories or practical problems discussions is about:

A. Once every two weeks B. Once a week C. 1-3 times every month

D. 1-3 times every semester E. Once a year F. None

( ) 3. The types of teaching materials currently used are**(if select multiply, sort backward from the most important item)**:

A. The official edition of the people's Education Publishing House

B. The public edition of other schools or districts

C. The non-public edition of other schools or districts

D. No clear teaching materials

E. School-based materials (**if selected, please list the names of the main courses**:_____)

( ) 4. The actual utilization forms of teaching materials are as follows **(if select multiply, please sort backward from the most important item)**:

A. Follow B. Adaptation C. Self-development D. No clear and specific approaches.

( ) 5. The course and teaching resources that actually developed and utilized for a long time are **(if select multiply, please sort backward from the most important item)**:

A. The resources of teachers and students inside the school

B. Playing and teaching aids resources inside the school

C. Parent resources D. Community resources

E. Network information resources F. Other social or natural resources

( ) 6.The grade span of students with intellectual disability in your school are（**can select multiply**）:

A. Pre-school section B. Primary school section C. Junior school section

D. General or vocational high school section E. Adult education section

( ) 7. The types of operating courses now are **(if select multiply, please sort backward from the most important item)**:

A. Discipline curriculum B. Domain curriculum

C. Life unit curriculum D. Activity curriculum

( ) 8. Whether or not the department of intellectual disability education in your school implemented living-oriented, situational or community-oriented curriculum in the past or now?

A. Never implemented

B. Implemented, but interrupted (**if selected, the core reasons for the interruption were:** _____)

C. Implemented and continued (**if selected, the subjects or fields are:** _____)

( ) 9. Whether or not the intellectual disability education department of your school will advocate the curriculum to move towards life, community and situation in the future:

A. Advocate ideologically, but won't really implement

B. Advocate ideologically and practice actively

C. Will not pay attention to this problem at all (**if selected, what are the main reasons:**_____)

**Part three Your personal understanding and requirements for the ecological curriculum of intellectual disability education**

( ) 1. Whether or not the living-oriented, situational or community-oriented curriculum and teaching of intellectual disability education is important?

A. Very important B. important C. Normal

D. Not so important E. Not important

( ) 2. The current state of the living-oriented, situational or community-oriented courses and teaching in the intellectual disability education department of your school is:

A. Very good B. Good C. Normal

D. Not so good E. Bad

( ) 3. The current state of the living-oriented, situational or community-oriented courses and teaching in the class that you belong to is:

A. Very good B. Good C. Normal

D. Not so good E. Bad

( ) 4. The current state of the living-oriented, situational or community-oriented curriculum that you design and implement is:

A. Haven't similar ideas at all, and in fact they haven't been implemented

B. Have similar ideas, but they haven't been implemented at all

C. Have similar ideas, and reflected in curriculum design and implementation, but not enough.

D. Have similar ideas, and have been well implemented in the process of design and implementation

( ) 5. The most important feature of ecological curriculum is:

A. A kind of curriculum idea B. A kind of curriculum practice

C. A specific type of course D. A curriculum mode

E. A synthesis of a series of courses

( ) 6. The suitable learning phase for ecological courses are**(if select multiply, please sort backward from the most important item)**:

A. Pre-school section B. First half of primary school

C. Second half of primary school D. Junior school section

E. General or vocational high school section

F. Adult education section G. All learning phase are equally suitable

( ) 7. Compared the ecological curriculum with the subject curriculum which based on the inner logic of knowledge, their connotations are:

A. Completely the same B. Mostly the same C. Basically the same

D. Few the same E. Uncorrelated

( ) 8. Compared the ecological curriculum with the developmental curriculum which based on promoting students' basic physical and mental abilities, their connotations are:

A. Completely the same B. Mostly the same C. Basically the same

D. Few the same E. Uncorrelated

( ) 9. Compared the ecological curriculum with the adaptive functional curriculum which designed to assist students to adapt to the environment and the real life practice, their connotations are:

A. Completely the same B. Mostly the same C. Basically the same

D. Few the same E. Uncorrelated

( ) 10. The theoretical foundation of ecological curriculum development contains**(if select multiply, please sort backward from the most important item)**:

A. Ecological related theories B. Life education theories

C. Situational education theory D. Individualized education theories

E. The theory of general thinking ability development

F. Others (**if selected, Please list some**:_____)

( ) 11. In the whole process of ecological curriculum design and implementation, the most important thing is:

A. The guidelines and main clues are the determination, development and reach of the clear course targets

B. After establishing the basic and broad goals, it should gradually carried out, adjusted and realized in the process of education and teaching

C. Attaching importance to the interaction of knowledge, students, teachers and the environment. They communicate with each other and negotiate with each other

D. Focusing on the impact of a wide range of social life situations, analyzing social culture and its relationship with curriculum development comprehensively, adapting the curriculum, the school and the society to each other

( ) 12. Before the implementation of the ecological curriculum, the educational diagnostic assessment should include **(select multiply)**:

A. Teachers B. Students C. Teaching materials D. Classes

E. Schools F. Families G. Communities H. Natural environment

I. Others

( ) 13. The goals of the ecological curriculum should be **(if select multiply, sort backward from the most important item)**:

A. Specific educational ideal or value pursuits that can achieve general educational purposes or principles

B. Students' behavior Changes after the end of curriculum and teaching activities

C. Not intended, but born and expanded in the teachers and students' common process of education

D. Shouldn't be decided, it's the students' self-determination, self-experience and self-expression

( ) 14. The goals of the ecological curriculum come from **(select multiply, sort backward from the most important item)**:

A. Students B. Environment C. Educational ideas or subject knowledge

D. Interaction between students and the environment

E. Interaction between knowledge and environment

F. Interaction between students and knowledge G. Others

( ) 15. Comparing the IEP of ecological curriculum with the traditional IEP, their connotations are:

A. Completely the same B. Mostly the same C. Basically the same

D. Few the same E. Uncorrelated

( ) 16. Comparing the IEP of ecological curriculum with the traditional IEP, their development processes and design ideas are:

A. Completely the same B. Mostly the same C. Basically the same

D. Few the same E. Uncorrelated

( ) 17. The content of the ecological curriculum comes from **(select multiply, sort backward from the most important item)**:

A. Students B. Environment C. Educational ideas or subject knowledge

D. Interaction between students and the environment

E. Interaction between knowledge and environment.

F. Interaction between students and knowledge G. Others

( ) 18. The most suitable teaching mode for ecological curriculum is:

A. Teaching by different subjects

B. Teaching according to different fields of real social life

C. Taking the real problems in social life as the center, carried on according to the unit themes

D. Teaching through activities and experience.

( ) 19. The most suitable form of teaching organization for ecological curriculum is:

A. Collective teaching B. Group teaching

C. Individual teaching D. Integrative form

( ) 20. The suitable implementation environment for ecological curriculum is **(select multiply, please sort backward from the most important item)**:

A. In classroom B. The whole campus C. Students' family

D. Communities E. Other social life scenarios

( ) 21. The most suitable teaching method for ecological curriculum is:

A. Teachers prompt mainly B. Teachers and students solve problems together

C. Mainly students learn autonomous D. Comprehensive mode

( ) 22. At the final evaluation of the ecological curriculum, the subjects to be evaluated are **(select multiply, please sort backward from the most important item)**:

A. Teachers B. Students C. Teaching materials D. Classes

E. Schools F. Families G. Communities H. Natural environment

I. Others

( ) 23. When judging the implementation effectiveness of the ecological curriculum, the most important is:

A. Whether or not the established curriculum and teaching objectives have been achieved

B. Whether or not the actual performance of curriculum and teaching is consistent with the established intentions and standards

C. Whether or not the actual performance is consistent with the relevant background, input and process

D. Whether or not can convince the relevant participants in the curriculum

( ) 24. The support that your school needs in the process of design and implementation of ecological curriculum in the future is **(select multiply, please sort backwards from the most urgent requirement item)**:

A. Education and teaching idea B. Specific educational methods and techniques

C. Educational rehabilitation professionals D. Government policies

E. Special education professionals F. Funds G. Parents

H. Social general volunteers I. Communities J. Others

( ) 25. The support that the class you belong to needs in the process of design and implementation of ecological curriculum in the future is **(select multiply, please sort backwards from the most urgent requirement item)**:

A. Education and teaching idea

B. Specific educational methods and techniques

C. School policies and management rules

D. School hardware facilities and material security

E. Teachers and students in other classes

F. Special education professionals outside the school

G. Educational rehabilitation professionals outside the school

H. Parents I. Social ordinary volunteers

J. Communities K. Others

( ) 26. The support that in your own process of design and implementation of ecological curriculum in the future is **(select multiply, please sort backwards from the most urgent requirement item)**:

A. Education and teaching idea

B. Specific educational methods and techniques

C. Rules for the management of school and class

D. Other teachers in own class

E. Teachers and students in other classes

F. Special education professionals outside the school

G. educational rehabilitation professionals outside the school

H. Hardware facilities and material support in school and class

I. Parents J. Social general volunteers

K. Support of relatives or friends L. Communities M. Others

27. Your other suggestions or opinions on the design and implementation of ecological curriculum for intellectual disability education are as follows:

All the questions in this questionnaire are filled out, thank you for your participation and support again!

# Appendix B:

## Contextual system assessment form of Environment Ecology Analysis Curriculum

Name of the course：_____ Evaluators：_____ Evaluation time：___Y___M___D

| First level of contextual factors | Last level of contextual factors | Actual utilization degree | | | | | Subsequent adjusting strategies for contextual factors with actual utilization degree ≦ |
|---|---|---|---|---|---|---|---|
| | | 0 | 1 | 2 | 3 | 4 | |
| 1. Students (Inside the class system) | 1.1 | | | | | | |
| | 1.2 | | | | | | |
| | 1.3 | | | | | | |
| | … | | | | | | … |
| 2. Teachers (Inside the class system) | 2.1 | | | | | | |
| | 2.2 | | | | | | |
| | 2.3 | | | | | | |
| | … | | | | | | … |
| 3. Courses (Inside the class system) | 3.1 | | | | | | |
| | 3.2 | | | | | | |
| | 3.3 | | | | | | |
| | … | | | | | | … |
| 4. Material environment in class | 4.1 | | | | | | |
| | 4.2 | | | | | | |
| | 4.3 | | | | | | |
| | … | | | | | | … |
| 5. Spirit environment in class | 5.1 | | | | | | |
| | 5.2 | | | | | | |
| | 5.3 | | | | | | |
| | … | | | | | | … |
| 6. School (other ecosystems) | 6.1 | | | | | | |
| | 6.2 | | | | | | |
| | 6.3 | | | | | | |
| | … | | | | | | … |
| 7.Families | 7.1 | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 7.2 | | | | | | |
| | 7.3 | | | | | | |
| | … | | | | | | … |
| 8. communities | 8.1 | | | | | | |
| | 8.2 | | | | | | |
| | 8.3 | | | | | | |
| | … | | | | | | … |
| 9. Social material environment | 9.1 | | | | | | |
| | 9.2 | | | | | | |
| | 9.3 | | | | | | |
| | … | | | | | | … |
| 10. Social spiritual environment | 10.1 | | | | | | |
| | 10.2 | | | | | | |
| | 10.3 | | | | | | |
| | … | | | | | | … |
| 11. natural environment | 11.1 | | | | | | |
| | 11.2 | | | | | | |
| | 11.3 | | | | | | |
| | … | | | | | | … |

**Notes：**

1. “Actual utilization degree” includes two parts: the breadth and depth of utilization. The comprehensive grading meanings of each level are: 0. completely unutilized; 1. utilization of a small part; 2. basic utilization; 3. utilization of majority; 4. complete utilization. When evaluating, mark ☆ in the space of the corresponding level
2. “Last-level course contextual factor” refers to the last level corresponding to each “first-level course contextual factor”, and reflects the situation factors of each course in the real education and teaching, the actual use of course resources. When filling in, determine the final number of items according to the specific content, and adjust the form yourself.

# Appendix C:

## Action Research Summary and Reflection Record

Course Name：_____ Record period：Y M D— Y M D

Teachers' name：_____ Classes：_____

| **Overview of activities related to this week's action research**<br>(With time as the basic clue, outline the main activities item by item) | | | | | |
|---|---|---|---|---|---|
| Time | Place | Theme | Main materials or methods | related personnel | Notes |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| **Successful experiences of this week's action research**<br>(Refer to the above "activity overview "; the potential interpretation angle can be the relationship between any factor or factor in the whole curriculum system) | | |
|---|---|---|
| Content of experience | Analysis of causes | Strategies for subsequent extensions |
| | | |
| | | |
| | | |
| | | |

| **What should be improved in this week's action research**<br>(Refer to the above "activity overview ";" problem" should be objectively described in neutral or positive terms to avoid negative words such as "no" or "not "; potential interpretation angle can be the relationship between any factor or factor in the whole curriculum system) | | | | |
|---|---|---|---|---|
| problems | Analysis of causes | Improved strategies | | |
| | | Content | Check | |
| | | | Time | Utility☆ |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Utility☆ check standard: 0. Completely invalid; 1. Few utility; 2. Basically effective; 3. Very effective; 4. Fully effective | | | | |

| summary and reflection in this week |
|---|
| |

**Notes：**

1. The final number of lines in each section can be adjusted according to the specific content.
2. Fill in the font size 4, Song type, the middle is aligned at both ends, and the line spacing is single.
3. ☆ To ensure the completeness, accuracy, timeliness and validity of this form, the first three sections should be recorded day by day during the teaching process.
4. Delete the extra lines after completing and adjust other formats.
5. ☆On every Sunday night the final draft of this form must be published to the "Curriculum Exploration • File" in the form of an electronic file before 22:00.
6. If there are extremely important related materials or information that other members lack, it is best to attach them to this form.
7. ☆The basic principles for filling in all contents of this document: sincere, accurate, comprehensive, meticulous and refined.

# Appendix D:

## Difficulties or Stress Interpretations in Participation of the Curriculum Research※

Time to apply to join our group：_____Year_____Month _____Day

Time to formally join the group：_____Year_____Month_____Day

Interpreter: _____

| Name or performance of difficulty, stress | Causes of stress or difficulties | Duration* | | | Trouble ranking☆ | Previous attitudes and methods of coping | Subsequent adaptation measures |
|---|---|---|---|---|---|---|---|
| | | earlier stage | middle stage | later stage | | | |
| | | | | | | | |
| | | | | | | | |
| … | … | | | | … | … | … |

Notes：

※ The filling of this form is for you to be sincere, accurate, comprehensive, meticulous, and refined. It records all the important difficulties or pressures that you have experienced since participating in this group (contact our macro and meso model diagram), and you can increase the number of rows by yourself;

* "Duration" refers to the entire period of time since joining the group, just draw "√" under the selected period, you can choose more than one;

☆ From the current perspective, sort all the listed items, the most troublesome one is "1", and then sort them in sequence, the sequence numbers are not repeated.