

Action Research on the Adjustment of Inclusive Early Childhood Education Curriculum: Taking the special education class of M Kindergarten in Shanghai as an example

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Abstract : *Inclusive early childhood education(IECE), a key part of educational equity, was widely promoted by national education departments. The curriculum was crucial for children with special needs(SEN) to integrate into learning and life, significantly impacting their holistic development. This study used action research to explore curriculum adjustment strategies for IECE, aiming to propose adjustments in line with inclusive education principles. M Kindergarten was chosen as the practice site, and the "plan - act - observe - reflect" cycle was used to test the strategies' effectiveness. The results showed that adjusting the IECE curriculum was a complex, systemic task requiring active participation and collaboration from kindergartens, teachers, children, parents, and medical services to enhance inclusive education quality.*

Keywords : *Inclusive Education; Curriculum Adjustment; Action Research*

I. Introduction

As inclusive education become widespread, China's IECE was shifting from segregated to inclusive models. IECE was placing SEN and typically - developing children in the same environment to learn and grow together^[1]. It highlighted each child's uniqueness and potential^[2]. By offering individualized support and resources, it helped SEN overcome learning and living difficulties, while fostering typically - developing children's understanding and acceptance of diversity and inclusion. In this education model, curriculum design and teaching methods were adjusted to meet diverse needs^[3]. However, current curriculum issues include: Single - minded curriculum goals, over - reliance on medical diagnoses, neglect of individual differences, rigid implementation, excessive group teaching, and failure to meet children's personalized needs. Weak support systems, poor family - community resource integration, and fragmented educational interventions also exist. Thus, designing a scientific curriculum adjustment plan was an urgent practical challenge.

II. Research Design

2.1 Research Subjects

2.1.1 Profiles of Kindergarten and Special Education Class

M Kindergarten, a Category II facility in Shanghai, had a mixed-age special education class of seven children from different grades. There were two regular teachers and one shadow teacher, all under 40 years old with special education training. They dynamically adjusted each child's inclusion in regular classes based on individual needs. The three children with special needs in this class who attend regular classes (Class 2) are also part of the study.

2.1.2 Basic Information of Teachers

Teachers from M Kindergarten's special education class were surveyed. All hold valid kindergarten teacher certificates and had accumulated practical inclusive education experience. Specific details were in Table 1.

Table 1 Basic Information of Class Teachers

Teacher	Gender	Degree	Teaching Years	Major	Special Education Course Learning Experience
T1	Female	Master	5 years	Special education	Yes
T2	Female	Bachelor	3 years	Early childhood education	Yes
T3	Female	Bachelor	4 years	Early childhood education	Yes
T4	Female	Bachelor	intern	Early childhood education	Yes

2.1.3 Basic Information of SEN

Three SEN were selected as subjects for the support strategy implementation. They met the following criteria: ① diagnosed with autism, cerebral palsy, or ADHD at a top - tertiary hospital (Table 2); ② aged 3 - 6; ③ able to understand simple instructions and possessing basic cognitive and language abilities.

Table 2 Basic Information of SEN

Child	Gender	Age	Disability
Y1	Male	3	Autism
Y2	Male	3	Autism
Y3	Female	4	ADHD

2.2 Methods

This study used action research, cycling through "planning - acting - observing - reflecting" to refine the curriculum design. Data was collected via classroom observation, teacher journals, and child growth records to assess the curriculum adjustments' effectiveness.

III. Research Process and Findings

3.1 Action Research Preparation

3.1.1 Current Situation Investigation

Researchers interviewed and observed three teachers from the special education class. The investigation revealed that the class's curriculum, based on the "Shanghai Preschool Education Curriculum Guidelines," was organized around four areas: sports, games, life skills, and academics. Teachers designed both group and individual activities to meet children's special needs. However, observations and interviews indicated that individualized activities accounted for as high as 80%, with one or two opportunities per week to join regular classes, which limited SEN's suitable development.

3.1.2 Defining the Basic Content of Curriculum Adjustment

The theory of universal design curriculum adjustment advocated for a curriculum design that meet all learners' diverse needs. It aimed to reduce learning barriers and promote inclusive education by offering varied learning pathways and resources. Guided by this theory, IECE curriculum could be adjusted in terms of goals, teaching, and environment. This definition laid the foundation for teachers to adjust the curriculum.

3.1.3 Developing the General Plan for Curriculum Adjustment Strategies

In light of M Kindergarten's situation, the SEN's current level, and the basic content of curriculum adjustment, two rounds of action research were carried out following the steps of "planning - implementation - observation - reflection". The general plan for curriculum adjustment strategies was shown in Table 3.

Table 3 The General Plan for Curriculum Adjustment Strategies

Research Phase	Activity Theme	Overall Activity Objective	Adjustment Strategy
First Round	<i>My Kindergarten</i>	Familiarize with teachers and peers; adapt to kindergarten routines; manage emotions and	Objective

Second Round	<i>Playing Together Is Really Fun</i>	behavior; appreciate the joy of collective life Willing to play with peers and experience the joy of it; able to put toys back and cooperate with peers to tidy up; interact with partners during play	adjustment; Teaching adjustment; Environmental adjustment
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3.2 First Round of Action Research

3.2.1 Activity Plan Design

Curriculum adjustments were made in terms of goals, teaching, and environment through consultation between special education and regular class teachers. They used the "3 - 6 Year - Old Children's Learning and Development Guidelines" (hereinafter referred to as the "Guidelines") as common development goals for all children (both normal children and SEN). Based on observations and assessments of SEN in areas like cognition, social communication, movement, and daily living skills, the teachers refined the goals from the Guidelines. They also employed strategies such as establishing reinforcement systems, setting rules, peer support, creating atmospheres, visual prompting, and increasing opportunities to comprehensively adjust the regular class curriculum to meet the needs of SEN (Table 4).

Table 4 Curriculum Adjustment for the "My Kindergarten" Theme-based Activity

Child	Common Objective	Objective Adjustment	Teaching Adjustment	Environmental Adjustment
Y1	Willing to play with peers, enjoy the game; cooperate with peers to tidy up;	Willing to exercise with peers; able to tidy up sports equipment with peers	Peer acceptance and guidance; visual prompt charts; reinforcement system	Solicit study buddies, foster an accepting atmosphere
Y2	interact during play; adapt to kindergarten life with stable emotions	Emotions stabilize with consolation; drink water from a cup when reminded by a teacher	Agree on rules in advance; establish a reinforcement system	Visual rule charts on tables
Y3		Willing to have afternoon snacks with peers; express wishes verbally or through gestures	Encourage more interaction with typically - developing children, provide more speaking opportunities in class	Adjust seating (next to active children)

3.2.2 Implementation of the Activity Plan

Before entering the class, teachers helped SEN find partners, negotiated position adjustments with teachers, and posted visual prompt charts. During implementation, teachers encountered issues like SEN refusing to go to regular classes and disrupting routines. Analysis revealed that SEN resisted regular classes due to frequent behavior control by regular class teachers. Y1 and Y2's repetitive behaviors disturbed teaching routines, such as Y2 not returning blocks and Y3 wandering during activities. However, SEN could find and excel in activities they liked, for example, Y1 had strong motor skills and could lead all children in sports games.

3.2.3 Activity Observation and Analysis

In this round, we collected and analyzed nine observation logs from teachers (including regular class teachers, Table 5) to assess adjustment strategy effectiveness and inform the next round of research.

Table 5 Analysis of Observation Logs of SEN

Child	Effect
Y1	"Strong motor skills, supports typically - developing children in sports" "Emotionally stable, but bursts of anger when activity plans are cancelled"
Y2	"Calm when comforted and during games" "Adapts to kindergarten life" "Shows stereotyped behavior with blocks"
Y3	"No verbal communication, seeks help through actions when in trouble" "Refuses to eat lunch at kindergarten"

The logs showed that with physical environmental adjustments, teacher and peer support, SEN gradually take part in kindergarten games and sports. Teachers adjusted curriculum goals and content based on children's levels and needs, supporting their performance in motor skills, social communication, and daily living adaptation.

3.2.4 Revision of the Adjustment Plan

Based on data analysis during the curriculum adjustment, we evaluated the plan's effectiveness, retained reasonable parts, and modified unreasonable ones for the next phase. Following the "Kindergarten Education and Care Quality Assessment Guidelines," Table 6 recorded the goal achievement rates of the original individual adjustment plans. The achievement rate was a rough judgment by researchers on goal completion. A rate below 50% means the adjustment was unworkable, while above 80% means the goal was mostly achieved and not a priority for the next round.

Table 6 Goal Achievement Rates of Children in the First Round of Action Research

Child	Development Goals	Achievement Rate
Y1	1. Willing to exercise with peers 2. Able to tidy up sports equipment with peers	90% 60%
Y2	1. Emotions stabilize with consolation 2. Drinks water from a cup when reminded by a teacher	30% 80%
Y3	1. Willing to have afternoon snacks with peers 2. Expresses wishes verbally or through gestures	50% 60%

3.3 Second Round of Action Research

3.3.1 Activity Plan Design

Teachers removed three goals that the children had achieved 80% in the previous stage, retained those with achievement rates between 50% and 80%, and added new goals. The adjustment plan (Table 7) kept strategies like reinforcement systems, rule-setting, peer support, atmosphere creation, visual prompting, and increasing opportunities, and added new ones like goal decomposition, home - school collaboration, personalized services, more time, and slower teaching pace.

Table 7 Curriculum Adjustment for the "Playing Together Is Really Fun" Theme-based Activity

Child	Common Objective	Objective Adjustment	Teaching Adjustment	Environmental Adjustment
Y1	Able to put toys back and cooperate with peers to tidy up;	Able to put equipment back; willing to tidy up with peers	Reinforcement system, consistent requirements	Find study buddies, foster home acceptance
Y2	communicate during play	Able to put toys down at game end; put toys back	Agree on rules in advance, reinforcement system, consistent requirements, teachers slow	Visual prompt charts, create a relaxed atmosphere

Y3	Willing to have afternoon snacks at kindergarten; communicate with peers through gestures, words, and phrases	down teaching pace Meet individual dietary needs, provide more speaking opportunities, allow personalized expression, teachers slow down teaching pace, give more time	Adjust seating (next to active children), create a relaxed, inclusive atmosphere
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3.3.2 Implementation of the Activity Plan

Regular class and special education teachers, along with parents, agreed on routines, reinforcement systems, and environment setup, and jointly implemented them. Before entering the class, teachers and typically - developing children agreed to accept and help SEN. The classroom was well - prepared with visual charts to support children's learning.

3.3.3 Activity Observation and Analysis

In this round, we collected and analyzed nine observation logs from teachers (including regular class teachers, see Table 8) to assess adjustment strategy effectiveness and inform the next round of research.

Table 8 Analysis of Observation Logs of SEN

Child	Effect
Y1	"Able to put equipment back after sports" "Arranges equipment according to personal habits"
Y2	"Able to put toys down after games except for block games" "Shows stereotyped behavior with blocks"
Y3	"Willing to eat soy - sauce rice at kindergarten, which is to his taste" "Communicates with peers through actions and words during favorite activities"

The logs showed that with support from teachers, peers, and parents, and in an inclusive and rule - based environment, SEN made progress in daily living adaptation, social communication, and cognition. However, their functional deficits and problem behaviors still interfered with curriculum effectiveness.

3.3.4 Future Adjustment Plan

Table 9 recorded the goal achievement rates of the original individual adjustment plans. In the next round, besides adjusting goals, teaching, and environment, functional curricula should be added to meet SEN's rehabilitation needs. These are personalized courses targeting their auditory, visual, limb, and speech function rehabilitation. Kindergartens need to have suitable rehabilitation training venues or collaborate with rehabilitation institutions and community centers for support.

Table 9 Goal Achievement Rates of Children in the Second Round of Action Research

Child	Development Goals	Goal Achievement Rate
Y1	1. Able to put equipment back	90%
	2. Willing to tidy up with peers.	30%
Y2	1. Able to put toys down after games	60%
	2. Able to put toys back.	40%
Y3	1. Willing to have afternoon snacks at kindergarten	70%
	2. Willing to have snacks with peers	60%
	3. Willing to express wishes through gestures	70%
	5. Willing to express wishes through words	60%
	6. Willing to express wishes through phrases.	20%

IV. Results and Discussion

Curriculum adjustment was crucial for meeting young children's diverse needs, especially for those with special needs. It could significantly enhance their learning outcomes and participation. Researchers, through a three - stage action research, have developed practical curriculum adjustment strategies across four dimensions: objectives, content, organization, and implementation. These strategies, proven effective in practice, offered educators valuable insights.

4.1 Strategies for Adjusting Curriculum Objectives

4.1.1 Simplify Objectives

Curriculum objective adjustment mainly occurred in activity design. When common objectives were too difficult for SEN, simplify them. For example, if the goal was for children to drink water from a cup independently, and some SEN struggle with this, modified it to drinking water from a cup when reminded by a teacher. This made the goal more achievable, boosting their learning confidence and motivation.

4.1.2 Break Down Objectives

For complex curriculum objectives, break them down into smaller, hierarchical goals. For instance, if the objective was for SEN to interact and communicate during games, divided it into several sub - goals: first, willingness to express intentions through gestures, then through words, followed by short phrases, and finally, communication with peers during games. This helped children gradually acquire the necessary social skills and prevent frustration from overly high goals.

4.1.3 Substitute Objectives

If common objectives were unrealistic for SEN in the short term, replaced them with more practical, life - oriented ones. For example, if the goal was for children to master complex language expression, and some have language difficulties, substituted it with learning simple, everyday words and gestures. This meets their practical needs and improves self - care abilities.

4.2 Strategies for Adjusting Curriculum Content

4.2.1 Extended Family - Based Curriculum

Curriculum content adjustment could be extended to the home. The core of this strategy was to teach SEN learning strategies and prerequisite knowledge without disrupting the regular class's teaching rhythm. For example, parents could provide simple learning materials at home, such as self - care, social games, and exercise practice, to help children review classroom content. This was a minor adjustment with less impact on the original curriculum.

4.2.2 Extended Special Education Class Curriculum

In special education classes, teachers could design specialized curriculum content based on children's unique needs. For example, for children with language delays, provided targeted language training; for those with poor motor coordination, designed specific physical activities. This meets their individual needs without affecting the regular class's progress.

4.3 Strategies for Adjusting Curriculum Organization

4.3.1 Home - School Cooperation

Curriculum organization referred to teaching organization. One key adjustment strategy here was home - school cooperation, which integrates family and school resources to support SEN. Schools could hold regular parent - training sessions to help them understand curriculum adjustment and jointly developed home - education plans. Teachers should also communicate with parents about the children's learning progress and dynamically adjust their education plans.

4.3.2 Peer Support

Peer support was another important strategy for curriculum organization adjustment. Organize activity groups to facilitate SEN's learning and growth through peer interaction. For example, arranged group - collaborative learning in class or adjust seating during games and activities. Placed less - communicative children near more interactive peers. This enhanced their social skills and learning enthusiasm. Teachers could also use role - play and games to guide cooperation and sharing.

4.5 Strategies for Adjusting Curriculum Implementation

4.5.1 Environmental Adjustment

This strategy involved adapting the teaching environment to meet the needs of the whole class or SEN. For example, adjusted classroom layout based on children's attention characteristics to minimize distractions and create a quiet, comfortable learning space. Seat easily - distracted children near the teacher for timely guidance.

4.5.2 Adjustment of Activity Presentation Methods

This strategy boost SEN's learning effectiveness. For example, used visual materials like pictures and videos for visual learners, and audio materials and verbal explanations for auditory learners. Selected diverse teaching materials based on children's interests and needs to spark their enthusiasm.

4.5.3 Adjustment of Activity Pace

This strategy ensured SEN could keep up with teaching progress. For example, slowed down the teaching pace for slower - learning children, giving them more time to understand content. Flexibly adjusted the order and time arrangement of teaching activities based on their responses.

4.5.4 Adjustment Based on Children's Responses

This was crucial for curriculum implementation adjustment. Teachers should observe children's expressions, movements, and language to gauge their learning state and needs. For example, if a child seemed confused or disinterested, promptly adjusted teaching methods or content. Encouraged children to express their thoughts through questioning and group discussions.

4.5.5 Adjustment of Results and Support

This strategy enhanced SEN's learning effectiveness. For example, provided feedback and encouragement based on their learning outcomes to boost confidence. Offered extra support and tutoring for struggling children and established reinforcement systems to motivate positive performance.

V. Conclusion

Curriculum adjustment in IECE was a system project requiring collective effort from multiple parties. By creating an inclusive atmosphere^[4], improving assessment mechanisms^[5], strengthening teacher training, focusing on individual differences, promoting home - school cooperation, and integrating rehabilitation resources, the quality of inclusive education can be enhanced. This meets SEN's personalized requirements and promotes their comprehensive development.

5.1 Responding Sufficiently to Difficulties and Challenges

Kindergartens should create an inclusive curriculum atmosphere^[6] and incorporate SEN's requirements into school - based curriculum development. Developed a school - wide inclusive curriculum system to reduce teachers' workload in curriculum adjustment and ensure curriculum accessibility and inclusiveness^[7]. Implement comprehensive curriculum and basic adjustment strategies school - wide, and provide intervention and adjustment for SEN. Following the "Kindergarten Education and Care Quality Assessment Guidelines," established a suitable evaluation mechanism for SEN. Used observations, surveys, and parent feedback to assess curriculum effectiveness and children's development, adjusting content and methods accordingly^[8]. Regularly organized teacher training on inclusive education and curriculum adjustment, covering theory, methods, and IEP development.

5.2 Enhancing Teachers' Professional Competence

Teachers should center on all children's needs^[9], flexibly adjusting curriculum objectives, content, and teaching methods. In curriculum adjustment, adhere to the principle of "minimal adjustment, maximal inclusion," minimizing disruption to regular classes while meeting SEN's individual requirements. Develop personalized curriculum adjustment plans based on IEPs, which should include assessments of children's current abilities, long - and short - term goals, and required services. Regularly evaluate IEP implementation and adjust based on children's development. Use diverse teaching methods^[10] based on children's learning styles and needs, adjusting the teaching pace appropriately.

5.3 Truly Focusing on Children's Development

In curriculum adjustment, considered all children's individual differences^[11], including learning abilities, interests, and styles. Designed individualized curricula to meet each child's developmental needs. Provided

appropriate support and tools for SEN, such as visual prompts and assistive technology, to aid their participation. Emphasized the comprehensive development of all children in curriculum adjustment, covering cognitive, language, social, and emotional aspects. Used diverse curriculum content and activities to promote progress in different areas and encourage active participation to foster autonomous learning and teamwork.

5.4 Developing a Team - Based Curriculum Model

Kindergartens should regularly offer parent - training sessions on inclusive education and curriculum adjustment. Established effective home - school communication mechanisms, such as pick - up / drop - off times and WeChat groups, to update parents on SEN's progress. Encouraged parents to provide learning support at home, such as communication and games, to reinforce kindergarten learning. Involve parents in developing IEP for SEN. Collaborated with professional rehabilitation institutions to provide services like speech and motor therapy for SEN. Integrated rehabilitation training into daily teaching and provided necessary facilities for smooth implementation^[12]. Teachers and parents should work together to offer continuous support and encouragement.

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