# The Application Of Cdio Model In Spoken English Teaching Among Preschoolers In China

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***Abstract:***

*This study discussed how the CDIO model could be applied to the teaching of spoken English to preschoolers in China through the literature review approach. spoken English teaching plays an important role in developing good spoken expression and communicative skills among preschoolers in China, yet there are currently problems existing such as a single teaching method and a mismatch between teaching content and students' actual needs. CDIO model, as a teaching model with engineering practice as the core, has been widely used in higher education. This study reviewed the basic principles of the CDIO model and successful cases in higher education, discussed the compatibility of the CDIO model with the goals of spoken English teaching for preschoolers and proposed methods and strategies for applying the CDIO model to teaching spoken English to preschoolers in China by reviewing the current situation and problems of it. Specifically, this study explored how to use the CDIO model to promote preschoolers spoken English teaching from three aspects: curriculum design, teaching methods, and evaluation system. It is shown that the application of the CDIO model in teaching spoken language to preschoolers has great feasibility and practicality, and could effectively improve preschoolers' spoken expression and communicative competence. However, further research and evaluation of the effectiveness of the CDIO model in early childhood spoken language teaching is needed, and more teaching strategies and methods suitable for preschoolers should be explored. This study provides theoretical and practical references for introducing the CDIO model into the teaching of spoken language for preschoolers in China, and offers new ideas for the improvement and development of spoken English teaching for preschoolers.*

***Key words:*** *CDIO model, spoken English teaching, preschoolers, curriculum, teaching method, evaluation*

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## I.    INTRODUCTION

Language is an important tool for people's communication and social activities, and the development of language should start from young children. The development of children's language is closely related to their emotions, experiences, thinking, and other aspects (Cao, 2018). Focusing on education in various fields is crucial for developing children's language. Early childhood is a critical period for language development, and good spoken expression and communication skills have an important impact on young children's cognitive, social and learning abilities. With the increasing importance of English language proficiency in today's globalized world,    it is very important to learn English from an early age (Richardus, 2020). Richardus (2020)

said that children at the age of "golden age" are more likely to receive information than their later ages.

However, the current spoken English teaching of preschoolers in China faces a number of challenges and issues that require in-depth consideration and effective solutions (Zhao, 2020). First of all, according to Zhao (2020), the importance of teaching spoken English to young children cannot be ignored. At this critical stage of development, preschoolers are at their most sensitive and productive in terms of language acquisition, and they have an innate talent in learning new languages. By providing early spoken English education, they can build a solid language foundation, develop correct pronunciation and intonation, and develop good language expression and communication skills. In addition, teaching preschoolers spoken English helps stimulate children's interest and curiosity in learning, and increases their self-confidence and motivation (Zhao, 2020). Through early learning of spoken English, preschool students are better able to adapt to their future English learning environment and acquire reading and writing skills more quickly, laying a solid foundation for their overall language development and future academic success. Therefore, it is crucial to focus on teaching spoken English to preschool students. Second, the current teaching of spoken English to Chinese preschool students encountered some problems. One of them is that teaching method is single. Many preschool students' English speaking instruction is still based on the traditional teacher-speaking and students-listening model, which lacks variety and interactivity (Guo, 2019). This passive teaching method limits the development of young children's expression and communication skills. According to Guo (2019), the other problem is that the teaching contents or resources do not match the actual needs. Some teaching materials and contents focus too much on knowledge transfer and neglect the development of children's ability to apply spoken language in practice. In addition, there is a lack of individualization and relevance in teaching spoken language to young children, which cannot meet their different developmental needs and interest characteristics (Guo, 2019).

Tang (2012) said that CDIO emphasizes to train the students the abilities of active learning, practice, problem-analyzing and problem-solving, and emphasizes to train the vocational skills, professional ethics, as well as teamwork and communication. Introducing it into early childhood oral teaching is expected to stimulate children's interest in learning, improve their oral expression ability and communication skills, and promote the innovative development of early childhood education. The aim of this paper is to explore how to apply the CDIO model to the teaching of spoken English among preschoolers in China through the approach of literature review. In the following chapters, it will review the basic principles of the CDIO model and successful cases in higher education, and propose specific methods and strategies for applying the CDIO model to early childhood spoken English teaching in China in front of the current situation and problems of early childhood spoken English teaching. Through in-depth research and discussion, this study hopes to provide new ideas and references for improving the teaching of spoken English to preschoolers in China, and to promote the overall development and growth of them.

## II.    THE PRESENT SITUATION OF SPOKEN ENGLISH TEACHING AMONG PRESCHOOLS IN CHINA

The present situation of spoken English teaching among preschoolers in China is characterized by a low emphasis on developing speaking skills (Zhao, 2020). Factors such as the limited instruction，traditional and single teaching approach and strategies, and inadequate teacher training and resources contribute to this state of affairs (Cao, 2018). Addressing these challenges is crucial to provide preschoolers with more opportunities to practice and enhance their oral communication skills, ultimately fostering their overall English language proficiency.

Firstly, The level of English oral instruction for preschool students in China is a pressing concern due to its relative inadequacy. A predominant focus on developing listening and reading skills in many schools and

educational institutions has resulted in a neglect of speaking skills (Guo, 2019). Consequently, preschool students are confronted with a considerable dearth of opportunities to practice and enhance their oral communication abilities. Textbook-based teaching methods, commonly employed by teachers, heavily emphasize passive learning activities such as listening to audio recordings and reading aloud (Guo, 2019). While these activities contribute to vocabulary acquisition and language comprehension, they inadequately foster the development of spoken language skills. Furthermore, the restricted amount of instructional time specifically dedicated to oral practice exacerbates the issue. The densely packed preschool curricula leave minimal room for interactive speaking activities. Consequently, preschool students are deprived of regular and sustained opportunities to engage in oral communication and express themselves in English.

Sun (2022) said that teacher-centered instructional methods are prevalent in English oral teaching for preschool students in China. According to Sun (2022), in this approach, teachers play a central role by employing one-way instruction and multiple listening activities to impart knowledge to preschoolers. The strength of this method lies in the teachers' capacity to provide comprehensive explanations and interpretations of content, thereby facilitating the acquisition of fundamental language expression skills among preschool students. However, an inherent drawback of this method is the insufficient cultivation of students' active participation and expressive abilities. The overreliance on passive learning modes hampers the development of students' oral proficiency, as they have limited opportunities to practically apply their language skills. In this teacher-centered paradigm, the emphasis on information delivery often overshadows the encouragement of student engagement and independent expression. Consequently, preschoolers' oral communication abilities may be stifled, as they primarily passively receive knowledge without actively utilizing the language in authentic contexts (Sun, 2022). In a conclusion, while teacher-centered instructional methods in English oral teaching for preschoolers offer certain advantages, they fall short in cultivating students' active participation and expressive abilities.

Zhao (2019) said that the lack of adequate teacher training and limited availability of resources for teaching spoken English present notable challenges. Many preschool teachers are often insufficiently trained in effective language teaching methodologies that specifically foster the development of oral proficiency. While they may possess a general understanding of language instruction, specialized training in techniques and strategies for cultivating speaking skills in young learners is often lacking. Consequently, this knowledge gap can impede their ability to establish an optimal learning environment and deliver engaging oral instruction. Moreover, the scarcity of suitable teaching materials and resources tailored to enhance speaking skills among preschoolers compounds the issue(Zhao, 2019). Existing English language teaching resources for this age group predominantly emphasize listening and reading activities, neglecting the vital aspect of oral communication. The limited availability of age-appropriate and captivating materials poses a considerable challenge for teachers striving to design and implement effective speaking activities within their classrooms. Without access to adequate resources, teachers may encounter difficulties in providing diverse and interactive speaking opportunities for preschoolers, thus hindering their progress in oral language development.

## III.    LITERATURE REVIEW
**CDIO Model**

The founders of the CDIO framework are professors from world-class institutes; namely, Chalmers University of Technology, KTH Royal Institute of Technology, Linkoping University in Sweden and spearheaded by Massachusetts Institute of Technology (MIT) in the USA since 2000. The CDIO initiative was developed with input from academics, industry, engineers, and students and was specifically designed as a template that can be adapted and adopted by any university engineering school (Isam, 2018). The CDIO

initiative is based on four phases namely:

Conceive: Defining customer needs; considering technology, enterprise strategy, and regulations; developing concepts, techniques and business plans.

Design: Creating the design; plans, drawings, and algorithms that describe what will be implemented.

Implement: Transforming the design into the product, including manufacturing, coding, testing and validation.

Operate: Using the implemented product to deliver the intended value, including maintaining, evolving and retiring the system.

According to Isam (2018), it allows students to learn engineering in an active, practical, and interconnected manner across various courses. The CDIO training syllabus divides the competencies of engineering graduates into four levels: engineering fundamentals, individual competencies, interpersonal team competencies, and engineering system competencies.

**Researches on CDIO Model in High Education in China**

In 2008, the Chinese Ministry of Education (MOE) issued a document to establish the "CDIO Engineering Education Model Research and Practice Group", and in 2016, on the basis of the former "CDIO Engineering Education Reform Pilot Working Group" of MOE, the "CDIO Engineering Education Alliance" was established. At present, most engineering universities in China have started to adopt the CDIO model in their professional curriculum, and they have also started to gradually use it in their specific courses. Take Shantou University for example. It is the first university in China to join the CDIO international organization, and its EIP-CDIO model is the result of combining the CDIO concept and its own schooling characteristics. Besides, the "CDIO-based Mechanical Design Course Design" published by Tsinghua University Press is based on the guiding idea of CDIO teaching, setting multiple tasks in each module according to the process of mechanical design course design, focusing on three aspects of objectives, task analysis and implementation, and achieving remarkable results.

The implementation and application of the CDIO model in engineering majors have gained significant momentum, challenging the conventional standardized approach to student training and emphasizing a "learning by doing" pedagogy. However, the integration of the CDIO concept with English major courses and its application in course teaching remains relatively limited, with only a few scholars exploring this area. Searching the Chinese web site with the keywords "CDIO" and "English", there are 39 articles, including research on English teaching mode, curriculum reform plan and investigation on the cultivation mode of talents. Yin (2015) and Wang (2017) explored how the CDIO model can be introduced into the training model of English foreign trade talents and others. Zhou (2016) studied the university English curriculum under the CDIO model, taking the Southern College of China University of Peugeot as an example. Huang (2016) combined the CDIO concept into the reform of college English writing course. In terms of university English teaching reform, Zhu (2019) explored the project-based teaching reform of university English major courses under the CDIO concept, Zhuo (2016) studied the application of CDIO in university English translation courses, and Xu (2015) analyzed university English teaching practices. However, In the combination of English speaking courses and CDIO concept, only about ten articles were searched on the Internet, and the search result of "early childhood speaking" as a keyword was none. Therefore, the application of the CDIO model in English speaking courses for preschool students needs to be further studied and discussed.

In the field of early childhood oral language teaching, the CDIO model has a good fit with the goals of early childhood oral language teaching and can effectively promote the improvement of young children's oral expression and communicative competence. First of all, the CDIO model focuses on students' active learning and practical ability cultivation, which is in line with the characteristics of teaching oral language to young

children (Zhou, 2017). The CDIO model emphasizes children's participation and cooperation, and enables them to apply what they have learned in real-life situations and develop their oral expression skills through actual oral communication practice. Secondly, the CDIO model emphasizes teamwork and interdisciplinary learning, which is in line with the goals of teaching oral language to young children. Young children's oral language development requires interaction and cooperation with others. through communication and cooperation with others, young children can actively participate in oral language activities and improve their communicative competence. teamwork in the CDIO model can cultivate young children's sense of cooperation and team spirit, allowing them to learn from each other, share experiences, and work together to solve problems in oral expression. Third, the CDIO model focuses on solving practical problems and developing creative abilities, which is in line with the goals of teaching young children to speak. Young children face various practical problems in oral language teaching, such as how to express their needs in appropriate language and how to communicate effectively with others, etc. The CDIO model encourages young children's thinking and problem-solving skills by providing concrete problems and challenges, and fosters their innovative thinking and creativity. This hands-on approach to learning can stimulate young children's interest and improve their oral expression skills. Finally, the CDIO model focuses on assessment and reflection, which is in line with the goals of teaching oral language to young children. The CDIO model provides a mechanism for assessment and reflection to evaluate students' performance in practice, to understand their learning outcomes and problems, and to make timely improvements. In summary, the fit between the CDIO model and the goals of teaching oral language to young children is obvious. Through the application of CDIO model, early childhood oral teaching can focus more on practice and cooperation, and cultivate children's oral expression and communicative skills. The characteristics of CDIO model and the characteristics of early childhood oral teaching fit each other, providing strong support and guidance for the improvement and innovation of early childhood oral teaching. Therefore, actively exploring and applying the CDIO model in practice can help improve the quality of oral teaching for young children in China and promote the development of early childhood education.

## IV. STRATEGIES OF APPLYING CDIO MODEL TO IMPROVE PRESCHOOLERS' SPOKEN ENGLISH TEACHING

This chapter delves into the exploration of coping strategies of applying CDIO model to improve preschoolers' English oral communication skills. Building upon the comprehensive review of existing literature conducted before, this chapter provides an in-depth analysis and presentation of coping strategies that have been identified as effective tools for improving preschoolers' oral English abilities by using CDIO model.

**Innovating Curriculum Design**

When implementing the CDIO model in the context of preschoolers' oral English teaching, innovating curriculum design emerges as a pivotal coping strategy. This strategy entails a comprehensive re-imagining and restructuring of the curriculum to align with the principles and objectives of the CDIO approach while catering to the specific needs and abilities of preschool-aged children.

First and foremost, the curriculum design should prioritize experiential and play-based learning as preschoolers thrive in hands-on activities and engaging experiences. By incorporating interactive games, songs, role-plays, and storytelling into the curriculum, educators can cultivate a stimulating and enjoyable learning environment. These interactive activities provide children with the opportunity to actively participate, explore, and practice their oral English skills in a meaningful and contextualized manner. Secondly, the curriculum should foster a supportive and immersive language environment recognizing that preschoolers benefit greatly from exposure to authentic English language input. Creating an English-rich environment, both within and

beyond the classroom, plays a crucial role in developing their listening and speaking abilities. Classroom materials such as books, posters, and audiovisual aids should be easily accessible and captivating to young learners, thereby encouraging spontaneous and confident English language usage. Thirdly, an effective curriculum design should integrate language learning with real-life situations and topics that hold relevance to the lives of preschoolers. By connecting language instruction to their daily experiences, interests, and routines, children can develop a deeper understanding and appreciation for the English language. Incorporating themes such as family, animals, food, and nature into lessons enables the learning content to resonate more deeply and meaningfully with preschoolers. Moreover, the curriculum design should incorporate group activities and collaborative projects, promoting social interaction and communication skills. Encouraging preschoolers to work in pairs or small groups on tasks and projects fosters cooperation, peer learning, and the development of oral communication skills. For instance, engaging in role-plays, interviews, or collaborative storytelling activities provides valuable opportunities for preschoolers to actively use and practice their spoken English in a social context.

By innovating the curriculum design for preschoolers' oral English teaching based on the CDIO model, educators can create a dynamic, interactive, and child-centered learning environment. This approach encourages active participation, harnesses children's innate curiosity and creativity, and facilitates the development of their oral English communication skills from an early age.

**Improved Teaching Methods**

When applying the CDIO model to oral English teaching for preschoolers, enhancing the teaching method becomes a crucial coping strategy. This approach involves adopting innovative and effective instructional techniques that align with the principles and objectives of the CDIO approach while considering the distinctive characteristics and learning styles of preschool-aged children.

Firstly, the incorporation of interactive and multimodal teaching methods can significantly enhance engagement and comprehension among preschoolers. Utilizing visual aids, props, gestures, and facial expressions effectively convey meaning and facilitate understanding. Interactive activities, such as games, songs, and chants, not only make learning enjoyable and memorable but also promote active participation, stimulate interest, and create a lively and dynamic learning environment. Secondly, the provision of scaffold instruction and adequate support is essential for fostering oral English development in preschoolers. Breaking down complex language tasks into manageable steps, along with clear and concise instructions, enables teachers to guide children effectively. By modeling correct pronunciation, intonation, and sentence structures, teachers provide a valuable reference for children to imitate and practice. Moreover, providing ample opportunities for guided practice, feedback, and reinforcement strengthens learning outcomes and builds confidence in using spoken English. Thirdly, integrating technology into teaching can enhance engagement and provide additional learning resources. Interactive educational software, online language learning platforms, and specially designed educational apps for young learners offer personalized and interactive learning experiences. Digital tools, such as multimedia presentations and audio recordings, can expose preschoolers to authentic English language input, while also providing opportunities for independent practice. Furthermore, incorporating group activities and encouraging peer interaction within the teaching method promotes collaboration and communication skills. Pair work, small group discussions, and cooperative learning tasks encourage preschoolers to interact, express their ideas, and engage in meaningful conversations. Peer interaction allows children to learn from one another, practice their oral English in a social context, and develop effective communication and interpersonal skills.

In conclusion, by improving the teaching method for oral English instruction among preschoolers using the CDIO model, educators can create a stimulating, learner-centered, and effective learning environment.

Utilizing interactive and multi-modal methods, providing scaffold instruction, integrating technology, and promoting peer interaction all contribute to enhancing engagement, facilitating language acquisition, and supporting the development of oral English skills among preschoolers.

**Improve the Evaluation System**

When applying the CDIO model to the teaching of oral English for preschoolers, enhancing the evaluation system becomes a crucial coping strategy. This strategy entails the design of an evaluation system that aligns with the principles and objectives of the CDIO approach, while also taking into account the unique characteristics and developmental stages of preschool-aged children.

Firstly, the evaluation system should prioritize the assessment of both the end product and the process of oral English development. Instead of solely emphasizing the final outcome, it is important to consider the progress and effort made by each preschooler. Formative assessment methods, such as observations, checklists, and anecdotal records, can offer valuable insights into children's engagement, participation, and language development over time. This approach enables teachers to identify areas for improvement and provide targeted feedback to support children's ongoing language learning journey. Secondly, the evaluation system should encompass a range of assessment tools and techniques that are developmentally appropriate and child-friendly. Traditional written tests or exams may not accurately reflect young children's oral language abilities. Therefore, alternative assessment methods should be employed, such as performance-based assessments, portfolios, and audio or video recordings. These methods provide opportunities for children to demonstrate their oral communication skills in authentic and meaningful contexts, showcasing their progress and individual strengths. Thirdly, involving children in the evaluation process can enhance their motivation and self-assessment skills. Encouraging self-reflection and self-assessment allows preschoolers to develop metacognitive awareness of their own language learning. Simple rubrics or visual scales can be utilized to aid children in self-assessing their oral language skills, fostering a sense of ownership and responsibility for their learning. Additionally, peer assessment activities, where children provide feedback and support to their classmates, can promote collaborative learning and create a supportive classroom environment. Furthermore, it is crucial to provide constructive feedback that focuses on both strengths and areas for improvement. Rather than solely highlighting errors, feedback should be tailored to individual needs and offer specific guidance for further development. Teachers can employ a combination of oral feedback, written comments, and verbal encouragement to cultivate a positive and growth-oriented mindset among preschoolers. This feedback should be delivered in a supportive and nurturing manner, fostering children's self-confidence and motivation to continue their oral English language development.

In conclusion, by enhancing the evaluation system for preschoolers' oral English teaching based on the CDIO model, educators can establish a comprehensive and child-centered assessment approach. By placing emphasis on the process of language development, utilizing assessment methods that are appropriate for children's developmental stages, involving children in self-assessment, and providing constructive feedback, teachers can accurately measure children's progress, support their ongoing language learning, and promote a positive attitude towards oral English proficiency.

## V. CONCLUSION

This study aims to investigate whether the CDIO model can be used to address issues in teaching spoken English to preschoolers in China and how the CDIO model can be applied to the teaching of spoken language for preschoolers in order to enhance their spoken expression and communicative competence by analyzing the current situation and issues surrounding spoken English teaching for preschoolers in China as well

as the features and benefits of the CDIO model. The significance of this study is to provide innovative teaching ideas and methods for teaching spoken language to preschoolers. By introducing the CDIO model and emphasizing the integration of students' active learning and participation, practice and context, this study helps stimulate preschoolers' interest and initiative in learning, develop their spoken expression and communicative skills, and promote the development of their comprehensive literacy. However, there are some limitations in this study. First, this study is based on a literature review approach, which may be limited by the scope and depth of available studies. Second, this study focuses on the application of the CDIO model in teaching spoken language to preschoolers and may not cover all teaching scenarios and special contexts. Future research could expand the scope of the study and delve into the application of other teaching models and methods. First, an empirical study could be   conducted to assess the actual effectiveness of the CDIO model in teaching spoken English to preschoolers through field observations and experimental design. Second, future study could explore the variants and applicability of different CDIO models to meet the diversity of different early childhood spoken language teaching environments and needs. In addition, future study could pay attention to the individual differences and special needs of preschoolers and design individualized CDIO teaching programs.

CDIO model is a breakthrough from the traditional educational model, allowing students to actively explore and practice learning in four areas: conceptualization, design, implementation and operation, and actively seek organic connections between courses in order to improve students' spoken skills. It is no longer the traditional fill-in-the-bag teaching and learning, nor is it one-sided lecturing and learning, but an active and effective teaching mode is adopted. The study proves that a reasonable and effective use of the CDIO model in teaching Chinese preschoolers spoken English can facilitate students to grasp basic conversational knowledge more quickly and use it proficiently, thus achieving the goals of the curriculum more effectively and truly realizing the goal of cultivating English talents in China.

## REFERENCE

[1]. Cao Ruio. (2018). The Importance of Language Development in Preschool Children. Teaching Research for Secondary School Curriculum Coaching (05).

[2]. Guo, Y. (2019). Survey on the Current Situation of Teaching English to Young Children. Henan Agriculture, (06).

[3]. Isam Zabalawi. (2018). Engineering Education for Future World: The CDIO Approach. 28th Arab Engineering Conference, 11-13 Dec.

[4]. Li, H. (2014). CDIO Model Design for Business English Writing Process Based on Individual and Team Writing. Journal of Lanzhou Institute of Education, (05).

[5]. Richardus Krishna Adyaksa. (2020). The Importance of English in Early Childhood Education.

https://www.researchgate.net/publication/346441343_The_Importance_of_English_in_Early_Childhood_Education

[6]. Song, Y. (2019). Design of "English Flight Attendant Training" Course Based on TOPCARES-CDIO Engineering Education Concept. Modern Education Media Brand, (17).

[7]. Sun, Y.L. (2022). Exploring the Teaching Mode of Early Childhood English Pedagogy Course in Multimedia Network Environment. China New Communications, 24(10).

[8]. Tang, G.W. (2012). Research and Practice on CDIO-based Application-oriented

[9]. Practical Teaching System of Computer Major. International Conference on Future Computer Supported Education.

[10]. Zhao, C.J. (2019). A Study on the Assessment Dimensions of Early Childhood English Teaching Materials Application. Journal of Shaanxi Pre-school Teachers College, 35(11).

[11]. Zhao, J. (2020). A Study on the Current Situation of Preschool English Education. English Plaza. DOI: 10.16723/j.cnki.yygc.2020.10.035

[12]. Zhuo, X. (2016). Application of CDIO Educational Model in English Translation Teaching. Theory and Practice of Industry, University and Research, (26).

[13]. Zhou, Q. (2017). Research on the Teaching Model of English Course as a Follow-up Course of College English—Based on the CDIO Concept. Journal of Guangdong Second Normal University, (02).

[14]. Zhu, Y. (2019). Research on Project-Based Teaching Model of English Major Courses under the CDIO Concept. Journal of Mudanjiang College of Education, (04).