

DEVELOPING A STRUCTURE FOR VOCATIONAL UNIVERSITY DIFFERENTIATED PRESCHOOL EDUCATION CURRICULUM BASED ON STUDENT TEMPERAMENT TYPES

ZHU XIN YAN

SULTAN IDRIS EDUCATION UNIVERSITY

2025



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ABSTRACT

The study intended to develop a differentiated preschool education curriculum structure in vocational university based on students' temperament types. Three phases of this study were conducted based on a mixed-method research approach. The questionnaire survey and in-depth interviews were conducted with 384 student respondents and 24 student participants in needs analysis phase. Instruments were the adapted Keirseley Temperament Sorter II, a self-designed questionnaire and an interview protocol. For data analysis methods, descriptive statistics, content analysis, one-way ANOVA and thematic analysis were used. At the design phase, a focus group discussion verified the initially designed structure. Six specialists were interviewed using an interview protocol. Their views were analyzed thematically. Usability was measured using a nominal group technique in the evaluation phase. The structure was reviewed by eight students and six experts using an interview protocol and a list of statements. Content analysis and ranking disambiguated their judgment. A common problem of overly uniform curriculum was revealed through the questionnaire survey. The findings of one-way ANOVA showed that students with four temperament types had significant differences in curriculum preferences at least at the .05 level [$F(3,380) = 2.825; p = .039$]. Interview data supported these patterns. Following focus group and nominal group results, a final structure of with common and differential components was formulated. They were based around four elements, with the curriculum purpose and objectives, curriculum organization, curriculum implementation and curriculum assessment. In conclusion, this structure has solved the problems of insufficient optional curriculum, lack of independent design and differentiation criteria for optional curriculum. For implication, such differentiated curriculum structure addresses both universal and particular learning needs. It would therefore be able to foster fairer and more inclusive learning experiences for different temperamental profiles.





PEMBANGUNAN STRUKTUR KURIKULUM TERBEZA PENDIDIKAN PRASEKOLAH BERDASARKAN JENIS TEMPERAMEN PELAJAR UNIVERSITI VOKASIONAL

ABSTRAK

Kajian ini bertujuan membangunkan struktur kurikulum pendidikan prasekolah berbeza di universiti vokasional berasaskan jenis temperamen pelajar melalui pendekatan penyelidikan kaedah campuran yang dilaksanakan dalam tiga fasa. Pada fasa analisis keperluan, tinjauan soal selidik dan temu bual mendalam melibatkan 384 pelajar serta 24 peserta temu bual menggunakan Keirseley Temperament Sorter II yang diadaptasi, soal selidik dibina penyelidik dan protokol temu bual. Bagi kaedah analisis data, statistik deskriptif, analisis kandungan, ANOVA sehala serta analisis tematik telah digunakan. Fasa reka bentuk menggunakan perbincangan kumpulan berfokus bersama enam pakar untuk mengesahkan struktur awal, manakala pandangan mereka dianalisis secara tematik. Fasa penilaian menilai kebolegunaan struktur melalui teknik kumpulan nominal. Fasa ini melibatkan lapan pelajar dan enam pakar yang menilai struktur tersebut menggunakan protokol temu bual dan senarai pernyataan. Analisis kandungan dan penarafan digunakan bagi mentafsir pertimbangan mereka. Hasil survei soal selidik mendedahkan masalah lazim, iaitu keseragaman kurikulum yang keterlaluan. Dapatan ANOVA sehala menunjukkan terdapat perbezaan yang signifikan dalam keutamaan kurikulum dalam kalangan pelajar yang mewakili empat jenis temperamen, sekurang-kurangnya pada aras .05 [$F(3,380) = 2.825; p = .039$]. Hasil ini disokong oleh tema temu bual. Hasil triangulasi perbincangan kumpulan berfokus dan kumpulan nominal memuktamadkan struktur akhir yang mengandungi komponen umum dan khusus berteraskan empat elemen, matlamat serta objektif kurikulum, pengorganisasian kurikulum, pelaksanaan kurikulum dan pentaksiran kurikulum. Struktur ini menyelesaikan isu kekurangan pilihan kurikulum, ketiadaan reka bentuk sendiri dan kriteria berbeza. Kajian ini berpotensi memenuhi keperluan pembelajaran sejagat dan khusus serta memupuk pengalaman pembelajaran yang lebih adil dan inklusif bagi pelajar dengan profil temperamen berbeza.



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LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
CFA	Confirmatory Factor Analysis
CPC	Communist Party of China
CPV	Cumulative Percentage of Variance
CR	Critical Ratio
CVI	Content Validity Index
E	Extroversion
EFA	Exploratory Factor Analysis
F	Feeling
FGD	Focus Group Discussion
I	Introversion
ICC	Intraclass Correlation Coefficient
I-CVI	Item-Level Content Validity Index
J	Judgment
KMO	Kaiser-Meyer-Olkin
KTS-II	Keirsey Temperament Sorter II
LSD	Least Significant Difference
MBTI	Myers Briggs Type Indicator



ML	Maximum Likelihood
MOE of PRC	Ministry of Education of the People's Republic of China
N	Intuition
NF	Idealist
NGT	Nominal Group Technique
NPC	National People's Congress
NT	Rational
P	Perception
PCA	Principal Components Analysis
S	Sensation
S-CVI	Scale-Level Content Validity Index
SJ	Guardian
SP	Artisan
SPSS	Statistical Package for the Social Sciences
T	Thinking
UN	United Nations
WLSMV	Weight Least Squares with Mean and Variance



APPENDIX LIST

- A The English Version of the Keirsey Temperament Sorter II (KTS-II)
- B Content Validation Form for the Chinese Version of the Keirsey Temperament Sorter II (KTS-II)
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- J Interview Protocol for Nominal Group Technique
- K List of Statements for Nominal Group Technique
- L Research Ethics





CHAPTER 1

INTRODUCTION



1.1 Introduction

“Curriculum” was first creatively mentioned by Spencer (1884). Theoretically, there are five typical curriculum definitions: curriculum is teaching subjects; curriculum is the objective and expected learning results; curriculum is the teaching plan; curriculum is the experience gained by learners; and curriculum is the dialogue between teachers and students (Zhu & Gao, 2011). Regardless of the definition, curriculum has been at the core of school education (Zhu & Yi, 2017). Under the influence of differentiated education philosophy, how to develop differentiated curriculum to meet the needs of different student groups is a valuable research topic (Hua, 2025; Li, 2007; Tomlinson & Strickland, 2005).





Moreover, vocational education and preschool education are important components of the education system. The practice of developed countries and regions shows that the process of industrialization is inseparable from the reform and development of vocational education and the strong support of skilled talents (Zhu & Wang, 2020). Preschool education is the foundation stage of school education and lifelong education (Gu & Shi, 2010). Countries and regions all over the world attach great importance to preschool education (Zhang, 2023). Focusing on the key issues mentioned above, this study aims to develop the differentiated curriculum of preschool education in vocational universities.

1.2 Background Research



Developing vocational education is an important way to promote economic development, employment, and improve individual's livelihood (Gu & Shi, 2010; Zhu & Wang, 2020). Internationally, the 2030 Agenda for Sustainable Development of the United Nations has set a goal to ensure that all women and men have equal access to affordable vocational education by 2030 (United Nations [UN], 2015).

In recent years, China's Education Modernization 2035 was officially issued, which depicted the development goal of vocational education — to significantly improve vocational education service capacity (The Communist Party of China Central Committee [CPC Central Committee] and State Council of China, 2019). In order to further promote vocational education, the Implementation Programme for





National Vocational Education Reform was promulgated (The State Council of China, 2019). In addition, the Vocational Education Law of the People's Republic of China was newly revised to perfect the legal system of vocational education in China (The 34th Meeting of the Standing Committee of the Thirteenth National People's Congress [NPC], 2022). The need to accelerate the construction of a modern vocational education system has been put on the agenda (The CPC Central Committee and State Council of China, 2025).

Moreover, popularizing preschool education is a global trend (Gu & Shi, 2010; Zhu & Wang, 2020). Internationally, the 2030 Agenda for Sustainable Development of the United Nations (2015) highlighted the access to quality early childhood education for girls and boys by 2030. In China, the public service system of preschool education needs to be further improved, and preschool education needs to be deeply reformed (The CPC Central Committee and State Council of China, 2018). From a macro perspective, the China's Educational Modernization 2035 depicted the development goal of China's preschool education — to popularize quality preschool education (The CPC Central Committee and State Council of China, 2019). Other than that, the Preschool Education Law of the People's Republic of China was issued to improve the legal system of preschool education in China (Ministry of Education of the People's Republic of China [MOE of PRC], 2024). The newly issued 2024-2035 Master Plan on Building China into a Leading Country in Education once again emphasized the promotion of universal and affordable preschool education (The CPC Central Committee and State Council of China, 2025).





Besides, curriculum is the core of school education and the concretization of educational purpose (Gu & Shi, 2010). Attaching great importance to and actively carrying out curriculum reform has been the common ground of educational development all over the world since the 1950s (Yuan, 2010; Gu & Shi, 2010). Under the background of the whole world and China, it is of great significance to strengthen the construction of the curriculum system and deepen the curriculum reform (Yuan, 2010; Gu & Shi, 2010). China's Educational Modernization 2035 clearly recommended strengthening curriculum construction, scientifically planning university curriculum, categorizing curriculum standards, and enriching and innovating curriculum forms (The CPC Central Committee and State Council of China, 2019).

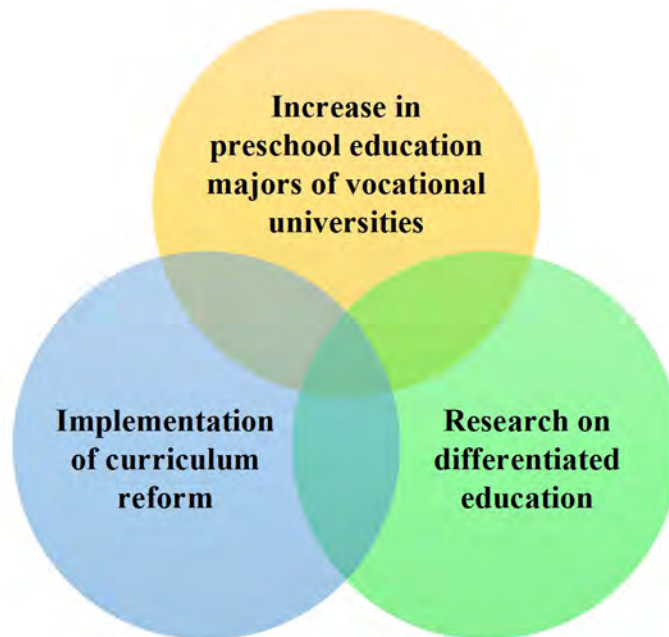


Lastly, the organic combination of large-scale and personalized cultivation of

students is an important measure for education in China today (The CPC Central Committee and State Council of China, 2019). In order to meet the individuality and differences of students, differentiated education, including differentiated curriculum (Kaplan, 2023; Li, 2007; Wang, 2021) and differentiated instruction (Heacox, 2012; Hua & Yan, 2022; Tomlinson, 2014), has become a significant topic of research both internationally and in China.

Under the macro background (Figure 1.1), the differentiated curriculum reform of preschool education in vocational universities in China has gradually been encouraged and focused (Qiang, 2024; Wang, 2024). The preschool education major in vocational universities should be aware of the differences among different students and construct differentiated curriculum based on the differences (Liu, 2022).



Figure 1.1*Macro Background*

1.3 Problem Statement

It has become a trend for vocational universities in China to establish preschool education majors to cultivate practical, applied, and technical early childhood education talents (Hong, 2019). Correspondingly, a large number of students with different personality traits, learning levels, and educational needs have chosen to study preschool education in vocational universities (Wu, 2024).

However, facing the increasing number of vocational university students with significant individual differences majoring in preschool education, the existing curriculum conducted is too unified for all students, and there is no differentiated curriculum based on the diverse needs of students (Yu, 2021). Specifically, the



curriculum objective is only to uniformly cultivate students' educational and childcare abilities, without considering the students' differentiated needs (Tao & Luo, 2020; Xu & Zhang, 2020). The proportion of compulsory curriculum is too high, while the optional curriculum is too low, which is not conducive to providing students with differentiated choices (Lin, 2024; Xu, 2020). Besides, the teaching methods, the organization forms, and the curriculum assessments are not diversified enough, mainly focusing on the logic analysis method (Gu, 2024), collective teaching (Zhang & Qin, 2023), and expert and summative assessments (Jiang et al., 2023).

More importantly, the Chinese-style differentiated curriculum consists of two components: a common component that meets the universal needs of all students through compulsory curriculum and a differential component that meets the diverse needs of different students through optional curriculum (Li, 2007; Wang, 2021; Hua, 2025). Among them, the differential component is the essential manifestation of the connotation of Chinese differentiated curriculum, and the optional curriculum is the core carrier for designing the differential component (Wang, 2021; Wang, 2023). However, there are three problems with the existing design of optional curriculum for preschool education majors in vocational universities.

First and foremost, the proportion of optional curriculum is insufficient or even missing. Existing research showed that the proportion of compulsory and optional curriculum is extremely unbalanced, and the proportion of optional curriculum is too low (Lin, 2024; Wang, 2023; Xu, 2020; Yan et al., 2021; Zhang, 2023; Zhang & Zhao, 2023). In the quantitative survey, Zhao (2021) compared and analyzed the seven university curriculum samples, and the results presented that the





proportion of optional curriculum was only 7%-14%, while the proportion of compulsory curriculum was as high as 86%-93%. Similarly, Yang and Qiu (2021) conducted an investigation on six sample universities and found that the proportion of optional curriculum was generally below 15%, with three universities having an optional curriculum proportion of less than 10%.

It is necessary to clarify that some universities nominally offer optional curriculum, but in fact they implement optional curriculum as compulsory curriculum, which means that there is no optional curriculum (Wang, 2023). The main reason is that under the influence of the concept of “utilitarianism and efficiency first”, some universities have misinterpreted or narrowed the spirit and essence of optional curriculum, and regarded optional curriculum as a further supplement and expansion of compulsory curriculum, in order to consolidate the learning effectiveness of compulsory curriculum (Yang & Qiu, 2021). These universities have already selected courses for students in the name of optional curriculum that can enhance their academic performance, while students only passively accept them without the right to make their own choices (Wang, 2023). The lack of optional curriculum is the direct reason why differentiated education is difficult to achieve in practice (Liu, 2022).

In addition, the optional curriculum is not designed independently and systematically as a differential component. A Chinese-style differentiated curriculum consists of two mutually distinct and related components: a common component and a differential component. Nevertheless, Xin et al. (2021) concluded that the existing vocational university preschool education curriculum only focuses on the common component and the optional curriculum is only designed to be subordinate to the



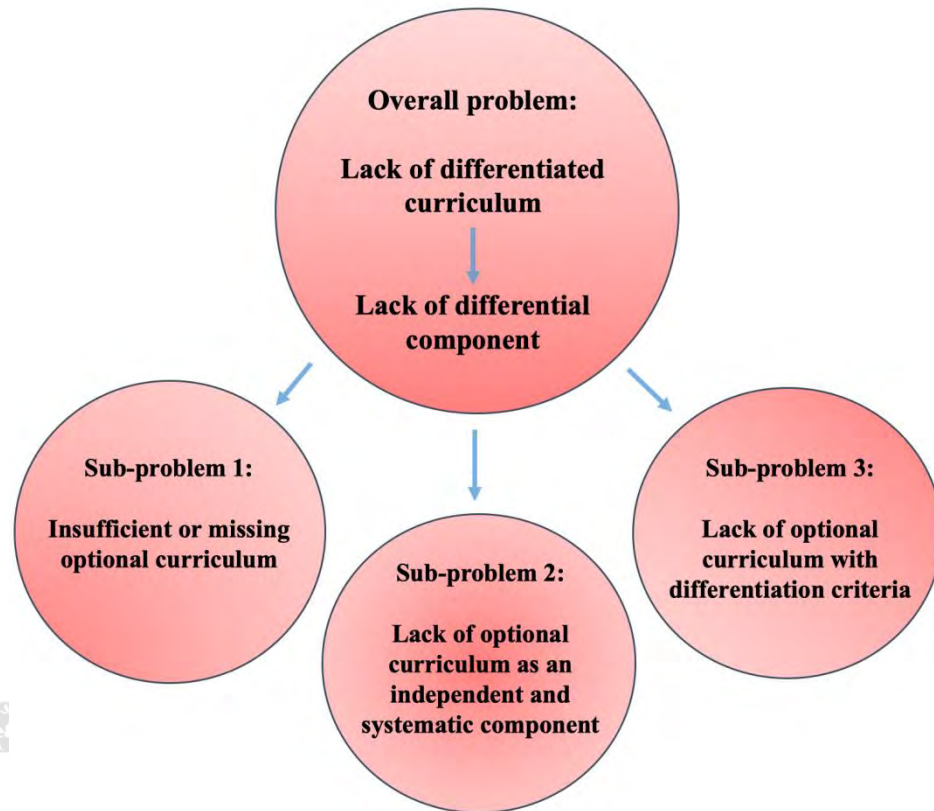


common component. In terms of details, the optional curriculum is only presented as an element in the common component with an allocated proportion and is not considered as an independent differential component separated from the common component (Xin et al., 2021). Besides, optional curriculum have not been systematically designed in combination with complete curriculum elements as compulsory curriculum (Zhang, 2023).

Moreover, the optional curriculum is not prepared based on certain differentiation criteria. The existing optional curriculum only allows students to choose arbitrarily, without conducting diagnostic assessment on students, and without implementing curriculum selection according to specific differentiating criteria (Gu, 2024; Qiang, 2024). Due to factors such as shortage of teachers, excessive number of students, and insufficient space, the optional curriculum provided generally have quota limits, and the optional curriculum without differentiated standards have led to the phenomenon of “fighting for courses”, that is, the students who registered first get them first, and once the quota is full, the students who did not get them can only choose the remaining courses even if they are not interested (Zhang & Zhao, 2023). This lack of differentiation criteria for optional curriculum has resulted in disorder in curriculum selection, and has also lost the original value of differentiated curriculum (Zhang & Zhao, 2023).

In general, the problems with optional curriculum lead to the lack of the differential component, which also means that a truly differentiated curriculum for preschool education in vocational universities does not exist (Wang, 2021). Figure 1.2 shows an overall problem and three sub-problems that this study needs to solve.



Figure 1.2*The Problems of This Study*

Previous studies reported that the lack of differentiated curriculum in vocational university preschool education not only has limited students' space for independent and personalized development, but has weakened students' learning enthusiasm and has made students tired of learning (Wang 2024; Yu, 2021). For kindergarten employers, the pre-service preschool teachers trained were too homogeneous and difficult to adapt to the diverse needs of talents in the position, hindering the development of preschool education (Liu, 2020; Zhang, 2023). Hence, it is of great significance to construct a differentiated curriculum for Chinese vocational university preschool education by improving its optional curriculum.

In response to these urgent issues, sufficient research has strongly recommended expanding the proportion of optional curriculum (Lin, 2024; Wang, 2023; Wu, 2024; Xu, 2020; Yang & Qiu, 2021; Yan et al., 2021; Zhang, 2023; Zhang & Zhao, 2023; Zhao, 2021). However, the suggestions mentioned by these studies are general and vague, and reasonable and implementable solutions with specific proportions of optional curriculum are not provided through empirical investigation.

According to an official flexible recommendation (MOE of PRC, 2019), the proportion of optional curriculum in the total class hours should be no less than 10%. In an earlier study, Shi and Li (2017) suggested that optional curriculum should account for one-third of the total class hours. Although the relatively specific proportions of optional curriculum were proposed, whether these proportions meet the needs of students and whether there is enough space to support the design of differentiated curriculum have not been studied and verified. It can be said that the design of optional curriculum without empirical research is unscientific and cannot be referenced or applied in practice (Xu, 2020).

Other than that, studies that have designed optional curriculum in vocational university preschool education as an independent and systematic differential component have not yet been found. This is the fundamental reason why there is no differentiated curriculum (Wang, 2021). It is also difficult to find any research on designing optional curriculum in vocational university preschool education according to certain differentiation criteria. The lack of research on differentiation standards cannot improve the chaotic situation of students' course selection (Zhang & Zhao, 2023).



Therefore, in order to bridge the existing research gaps, this study expands and determines the proportion of optional curriculum by investigating students' real needs, combined with expert verification and national document references. Designing curriculum based on students' needs as objective evidence is a valuable solution to transform students from "passive recipients" in the curriculum to "active constructors" (Qiang, 2024).

Subsequently, this study designs optional curriculum independently as a differential component and systematically inserts the four dimensions of curriculum objectives, curriculum organization, curriculum implementation, and curriculum assessment. This approach can undoubtedly highlight the essential connotation of differentiated curriculum.



It is worth mentioning that this study focuses on considering the differentiation criterion for optional curriculum. In the selection of differentiation criteria, temperament is chosen in this present study. Previous studies have shown that both personality and learning style play significant roles in students' academic performance (Hakimi et al., 2011; Komarraju et al., 2011; O' Connor & Paunonen, 2007). Recent studies reported that students' temperament types are significantly correlated with their learning outcomes and achievements (Chen, 2019; Das et al., 2025; Peng et al., 2023); students with different temperament types also present significant differences in their positive psychological traits (Xu et al., 2020) and mental health levels (Yang et al., 2020). Specifically, temperament is the foundation of personality development and is an innate, inherent, and stable attribute of human beings (Peng et al., 2023). It is less affected by social environment and education, and





it itself does not determine the level of students' abilities, but it affects the differences in students' learning ability tendencies (Su, 2022). Besides, students of different temperaments have different potential learning styles, for example, whether they rely on concrete or abstract language and thinking and whether they prefer to work with others or independently (Keirsey, 1998). This means that, compared with a single personality or learning style, temperament is not only the underlying basis for students' learning styles, but also reflects the innate differences in students' personalities and meets their natural needs. Thus, this study adopts students' temperament types as the differentiating basis and criterion for designing differentiated curriculum.

Furthermore, in China, curriculum structure can be used to refer to the coordination and organization of various parts of the curriculum, as well as a complete curriculum blueprint or system consisting of different curriculum components or elements, which can provide concise and universal reference and guidance for the specific curriculum design of an educational organization (MOE of PRC, 2011). Nevertheless, research exploring the differentiated curriculum structure of preschool education in vocational universities has not been reported either in practical application or in theoretical research. Therefore, this study attempts to develop a differentiated curriculum structure suitable for preschool education in vocational universities based on student temperament types. Overall, the final structure is expected to make possible contributions to the theoretical and practical fields of preschool education, vocational education, curriculum reform, and differentiated education.





1.4 Purpose of the Study

To bridge the gaps between the ideal and the reality, the purpose of this study is to develop a differentiated curriculum structure for preschool education in vocational universities based on students' temperament types. The mixed methods research is adopted as the research design of this study. The research procedure includes three phases: needs analysis, design, and evaluation. In addition, each phase has corresponding research objectives and research questions.

1.5 Research Objectives



Based on the general study purpose, this study sets the following five specific research objectives:

1. Needs Analysis Phase:

Research Objective 1: To explore the existing common problems and the common needs of students for preschool education curriculum in vocational universities.

Research Objective 2: To explore the different needs of students with different temperament types for preschool education curriculum in vocational universities.





2. Design Phase:

Research Objective 3: To design the structure of the differentiated curriculum of preschool education in vocational universities based on students' temperament types.

Research Objective 4: To verify the structure of the differentiated curriculum of preschool education in vocational universities based on students' temperament types.

3. Evaluation Phase:

Research Objective 5: To evaluate the structure of the differentiated curriculum of preschool education in vocational universities.

1.6 Research Questions

According to the five research objectives, the following five corresponding research questions are put forward:

1. Needs Analysis Phase:

Research Question 1: What are the common problems and common needs of students in preschool education curriculum for vocational universities?





Research Question 2: What are the different needs of students with different temperament types in preschool education curriculum for vocational universities?

2. Design Phase:

Research Question 3: What is the structure of the differentiated curriculum for preschool education in vocational universities based on students' temperament types through design?

Research Question 4: What is the structure of the differentiated curriculum for preschool education in vocational universities based on students' temperament types through verification?



3. Evaluation Phase:

Research Question 5: What is the feedback from the evaluation of the structure of the differentiated curriculum of preschool education in vocational universities?





1.7 Conceptual Framework

The conceptual framework of this study consists of the underlying theory, research procedure, and study outcome, in which the key variables involved in this study are embedded (Figure 1.3). First of all, the underlying theory is the foundation of this present study, including the differentiated curriculum model (2007), the adapted Tyler rationale (Feng, 2010; Zhu & Yi, 2007), and David Keirse's temperament theory (1998), and the combination of the three theories to construct the theoretical framework of this study (see 2.6 in Chapter Two for details).

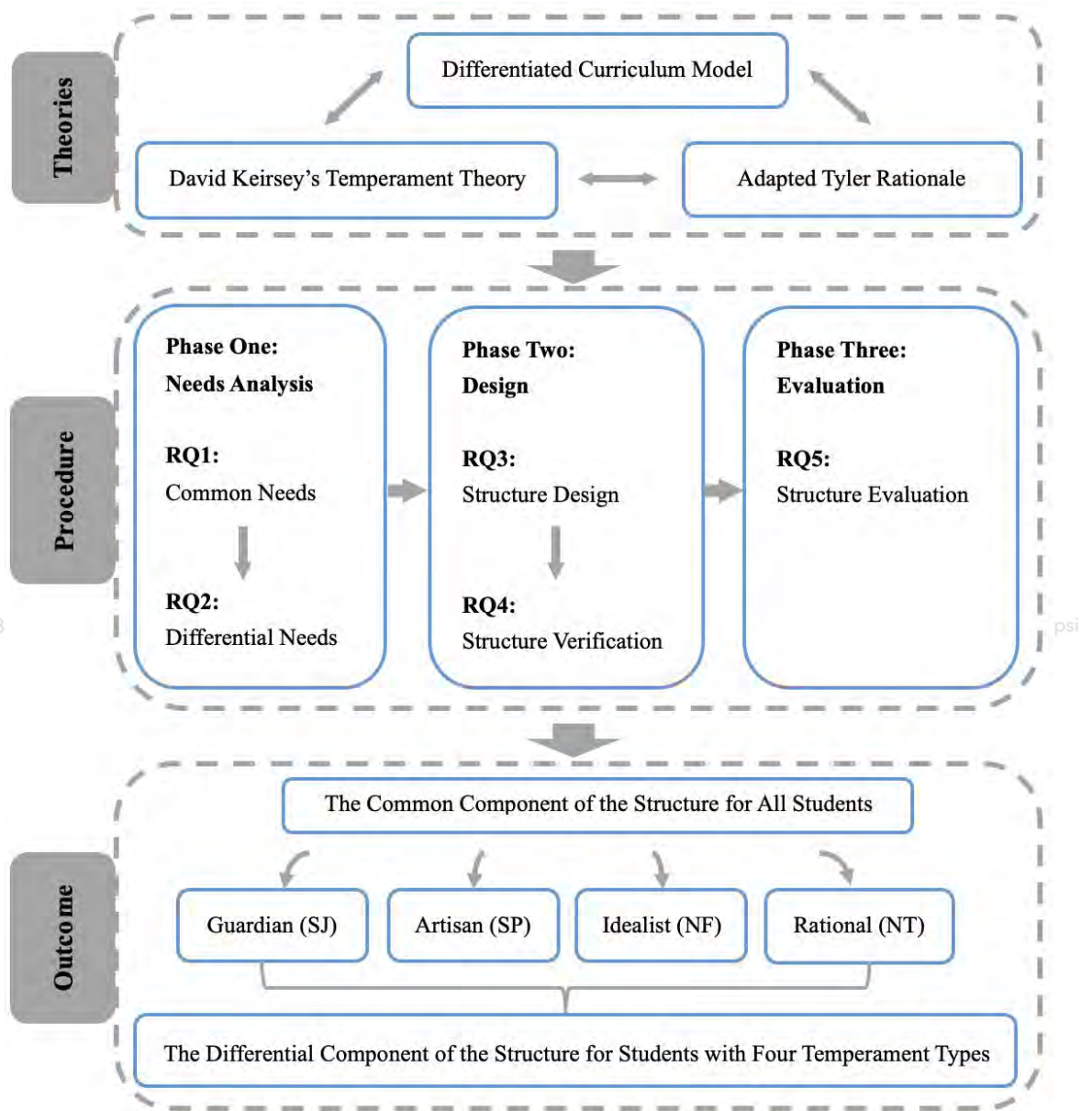
Besides, the research procedure is the necessary path to realize this study, which consists of three consecutive phases. The research process begins with the needs analysis phase, where students' common and differential needs are explored and analyzed as objective evidence for curriculum development. The next design phase involves an initial curriculum structure design followed by expert verification based on the objective evidence identified. The last evaluation phase is to conduct a usability test on the initial curriculum structure in order to determine the final curriculum structure.

After three phases of development, the final study outcome is a differentiated curriculum structure made up of two interconnected components: a common component for all students and a differential component for students with four temperament types (Guardian, Artisan, Idealist, and Rational).



Figure 1.3

The Conceptual Framework of This Study





1.8 Operational Definition

Several concepts closely related to the topic of this study are defined below, including curriculum, differentiated curriculum, differentiated curriculum structure, preschool education, vocational university, and temperament types.

1.8.1 Curriculum

Curriculum is the overall arrangement of educational content, standards, and processes, and the sum of various educational activities in order to achieve educational purposes and promote student development (Zhong et al., 2011). Moreover, Zhu and Yi (2017) believed that curriculum is the blueprint of educational activities, and its important features are planning and programmatic. Similarly, Grant (2018) suggested a broad working definition: curriculum is a managerial, ideological, and planning document.

In this present study, curriculum is defined as a blueprint of educational activities formulated to achieve educational purposes and promote student development, as well as an overarching and macro educational activity plan.





1.8.2 Differentiated Curriculum

Different from international differentiated curriculum that serves special learners, the Chinese differentiated curriculum is mainly applied in normal education (Hua, 2014; Wang, 2021). The Chinese differentiated curriculum combines the basis and selectivity. The basic requirements should first consider the curriculum suitable for all students, while the selectivity means that the curriculum provides students with different development potentials to choose different curriculum contents on the basis of ensuring the common foundation, in order to meet the different needs of students for the curriculum (Li, 2007; Wang & Zhang, 2015; Hua, 2025).

In the context of this study, differentiated curriculum refers to a blueprint of educational activities designed to meet the different needs of different students on the basis of ensuring the common needs of all students, including a common component and a differential component.

1.8.3 Differentiated Curriculum Structure

Structure is a system that arranges and organizes different parts (such as components, elements, etc.) together in some way (Bu, 2005; Zhu, 2022). In China, curriculum structure can be defined as a complete and overall curriculum blueprint composed of different curriculum components or elements according to certain principles (MOE of PRC, 2011).





This study further emphasizes that the differentiated curriculum structure refers to a whole system for curriculum blueprint consisting of the common and differential curriculum components. In addition, each component contains curriculum elements such as curriculum objectives, curriculum organization, curriculum implementation, and curriculum assessment.

Other than that, in the differentiated curriculum structure, several key concepts involved are Chinese curriculum terminology that is not easily understood by English readers and therefore needs to be defined and explained clearly and in detail.

1.8.3.1 Total Class Hours



Total class hours is defined as the sum of the number of all class hours in the entire learning cycle (one class hour = 45 minutes per class) (MOE of PRC, 2011), which can support curriculum designers and managers to design and arrange curriculum as a whole. If the total class hours are too many, it will bring pressure to students; if the total class hours are too few, the required courses will be difficult to complete (MOE of PRC, 2017).

In this study, the total class hours refer to the sum of the number of all class hours in the three-year system and six semesters for the preschool education curriculum of Chinese vocational universities.





1.8.3.2 Public Curriculum

According to the difference in talent cultivation purposes, curriculum can be divided into public curriculum, normal curriculum, and professional curriculum (Bu, 2005; Li & Yu, 2025). Public Curriculum is designed to cultivate and develop students as “an individual” and students need to master some general knowledge and skills (Shao & Hu, 2023; Yang & Cao, 2009; Yang & Kang, 2006).

In this study, public curriculum can also be understood as general curriculum, which mainly provides specific courses for preschool education students in vocational universities, such as English, basic law, computer technology, sports, national history, and others.



1.8.3.3 Normal Curriculum

Normal curriculum is designed to cultivate and develop students as “teachers” and students need to master some basic education and teaching knowledge and skills (Shao & Hu, 2023; Yang & Cao, 2009; Yang & Kang, 2006).

In this study, normal curriculum refers to curriculum designed to train the teaching and educational abilities of preschool education students at vocational universities, and the courses arranged include pedagogy, psychology, writing skills, teacher etiquette, Mandarin, and others.





1.8.3.4 Professional Curriculum

Professional curriculum is designed to cultivate and develop students as “kindergarten teachers” and students need to master some professional knowledge and skills of preschool education (Shao & Hu, 2023; Yang & Cao, 2009; Yang & Kang, 2006).

In this present study, a professional curriculum is used to cultivate the professional ability of preschool education students in vocational universities as kindergarten teachers, including specific courses such as preschool pedagogy, preschool psychology, the Montessori teaching method, and others.



1.8.3.5 Compulsory Curriculum



Curriculum can be divided into compulsory curriculum and optional curriculum according to whether students must learn or choose to learn according to their own needs (Yang & Kang, 2006). Compulsory curriculum is curriculum that students must study and complete within a specified period (Zhang, 2023).

This study defines compulsory curriculum as the curriculum that preschool education students in vocational universities must major in and complete within a specified study period.





1.8.3.6 Optional Curriculum

Optional curriculum is curriculum that can be chosen based on a student's personal interests and abilities (Zhang, 2023).

Optional curriculum in this study is defined as curriculum that can be chosen by preschool education students in vocational universities according to their own needs.

1.8.4 Preschool Education

The Preschool Education Law of the People's Republic of China, issued by MOE of PRC (2024), officially defined the concept of preschool education: preschool education refers to the care and education of preschool children (3-6 years old) from the age of three to primary school by preschool education institutions such as kindergartens. This present study follows and directly adopts the above official latest definition.

1.8.5 Vocational University

The Vocational Education Law of the People's Republic of China, newly revised by the 34th Meeting of the Standing Committee of the Thirteenth NPC (2022), clearly defined the concept of vocational education: vocational education is an education





carried out to cultivate high-quality technical talents and enable the educated to have the comprehensive professional qualities and action abilities, such as professional ethics, scientific culture, professional knowledge, and technical skills required to engage in a certain profession or achieve professional development.

The word “university” originates from Latin — universitas magistrorum et Scholarium, which roughly means “a community of lecturers and scholars” (Verger, 1995). University is one of the institutions that implement higher education, and is an institution of higher learning that inherits, researches, merges and innovates profound academic knowledge (Wang, 2005).

By combining the definitions of vocational education and university, in this study, vocational university is the institution that implement higher education to cultivate high-quality technical talents and enable the educated to have comprehensive professional qualities and action abilities.

1.8.6 Temperament Types

Temperament can be explained together with two concepts closely related to it: personality and character. Keirsey (1998) clearly defined that personality includes two aspects, one is temperament, the other is character. Temperament is a form of expression of will or tendency, which is innate and a natural form of expression of human nature; the character is a reflection of habit, is nurtured, and is the inevitable result of the common influence of temperament and environment; temperament,



character, and personality are unified and interrelated (Keirsey, 1998; Su, 2022). Furthermore, Keirsey (1998) divided temperament into four types based on differences in word usage (abstract versus concrete) and tool usage (cooperative versus utilitarian): Guardian, Artisan, Idealist, and Rational.

Since Keirsey's temperament theory is the theoretical basis of this research, this study directly adopts Keirsey's four temperament types: Guardian, Artisan, Idealist, and Rational.

1.9 Study Limitations

This study may have some limitations, which need to be further clarified in order to be improved in future research. Firstly, although the David Keirsey's temperament theory used in this study includes the dimension of extroversion-introversion in its measurement, the four temperament types actually generated do not involve this dimension. However, in the real educational environment, extroversion-introversion is an important psychological indicator for teachers to understand and guide students and should also be used as the basis for differentiated curriculum design. Hence, it can be said that the underlying theory used in this study has certain limitations.

This study only selects the students majoring in preschool education in vocational universities under the Chinese background as the sample and research subjects, which leads to the limited application scope of the final research product and



cannot be transplanted and promoted to other types of universities in the Chinese context, let alone to international use.

In the needs analysis phase, questionnaire surveys and in-depth interviews are only adopted and combined. Both methods are based on the subjective views of respondents or participants as evidence. However, the respondents may fill in the questionnaire randomly, and the participants may lie during the interview, which may lead to errors in the final results.

In addition, text analysis of the original curriculum can provide a more direct and clear understanding of the actual situation of different cases. However, due to the fact that the original curriculum within preschool education in most vocational universities are confidential documents and cannot be directly obtained, this study can only conduct a secondary literature analysis based on existing case studies of curriculum.

Furthermore, the study product is a three-year curriculum blueprint, a long-term curriculum plan, and not a specific course completed in only one semester. If the product is implemented, students will have to experience a three-year curriculum, which makes the time span of the research too long and cannot be achieved in the reality of this study. Thus, in terms of research design, only three phases of needs analysis, design, and evaluation are carried out. Yet, the implementation phase is not involved, resulting in the inability to obtain the real experience of users, which is also the biggest limitation of this study.





1.10 Importance of Research

This study can enrich the development of knowledge in related fields and make substantial contributions to potential stakeholders. First and foremost, at the macro theoretical level, integrated research is conducted on vocational education, preschool education, curriculum reform, and differentiated education, as well as psychological theory. This not only responds to the current trend and focus of educational development in China but also creates an interdisciplinary theoretical perspective. Concretely, the development of a differentiated curriculum structure for this study is a filling for the theoretical gap in vocational university preschool education.

Moreover, the final structure may provide curriculum designers with a novel differentiated curriculum design approach and reliable guidance for university lecturers to implement differentiated teaching. Through the application of this structure by curriculum designers and lecturers, the differentiated interests and abilities of university students as direct beneficiaries can be met, thereby mobilizing their learning enthusiasm and promoting their personalized and diversified development.

Furthermore, diversified pre-service preschool teachers can meet the diverse needs of kindergarten positions, which can reduce unnecessary economic investment and repetitive resource consumption in in-service preschool teacher education. Solving the problem of homogenization among kindergarten teachers can greatly improve the operational efficiency of kindergartens and further promote the development of preschool education.





1.11 Summary

This chapter is an overall introduction to this study. Initially, this study described the research background from the perspectives of vocational education, preschool education, curriculum reform, and differentiated education. Subsequently, an overall problem (lack of differentiated curriculum) and three sub-problems (poor optional curriculum design) of this study, as well as the corresponding research gaps, were presented. In response to the problems identified, a general study purpose and five specific research objectives with corresponding research questions were set.

Moreover, a conceptual framework consisting of underlying theories, a research procedure, and the study outcome was constructed. Several concepts closely related to this study were clearly defined. Finally, the research limitations were put forward from five aspects: research theory, research subject, research method, research reference, and research design. The importance of this study was expounded from two aspects: theoretical contribution and practical contribution.

