THE DEVELOPMENT OF A BLENDED LEARNING MODEL USING THE PRODUCTION-ORIENTED APPROACH TO IMPROVE THE SELF-DIRECTED LEARNING ABILITY OF FACULTY OF CHINESE LANGUAGE AND LITERATURE UNDERGRADUATE STUDENTS IN CHINA

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การพัฒนารูปแบบการเรียนรู้แบบผสมผสานตามวิธีการที่มุ่งเน้นการผลิตเป็นฐานเพื่อพัฒนาความสามารถในการนำตนเองของนักศึกษาระดับปริญญาตรีคณะภาษาและวรรณกรรมจีนในประเทศจีน

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THE DISSERTATION TITLED

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BY

HAN JUNYAN

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Title	THE DEVELOPMENT OF A BLENDED LEARNING MODEL USING THE PRODUCTION-ORIENTED APPROACH TO IMPROVE THE SELF-DIRECTED LEARNING ABILITY OF FACULTY OF CHINESE LANGUAGE AND LITERATURE UNDERGRADUATE STUDENTS IN CHINA
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Self-Directed Learning Ability is essential to enhance sustainable lifelong learning. This aims of this study are as follows: (1) to study the conditions and requirements of a blended learning model; (2) to develop a blended learning model using a production-oriented approach to improve self-directed learning ability; and (3) to study the effectiveness of a blended learning model developed using a production-oriented approach to improve self-directed learning ability. There were three phases in this methodology; in Phase I, the population was 96 second-year of Chinese Language and undergraduate literature students; in Phase II, the sample was five model experts; and in Phase III, the sample was 48 second-year of Chinese Language and undergraduate literature students were selected by using cluster random sampling. The research instruments included a needs questionnaire about the learning status of college students, an interview form for content experts, a blended learning model, lesson plans, an archived test, the Xue Xi Tong learning platform, and a "self-directed learning ability" questionnaire form. The data were analyzed by using PNI, mean, SD and dependent t-tests. The result of each phase found the following: (1) the conditions and requirements of a blended learning model to improve self-directed learning. The first ranked PNI was self-management ability, the second was self-adjustment ability and the third was self-control ability; (2) the instructional learning model named D-FEELLT had three processes: D: drive, F: facilitate, and E: evaluate, and had four components: evaluation and feedback, learning platform, learning environment and resources, and teacher and students; (3) for self-directed learning, the results showed that after learning with the POA and blended learning models. The students had a higher level of self-directed learning ability and achieved learning goals better than before learning, with the following statistical significance ($p<0.05$).

Keyword : Production-oriented approach, Blended learning, Self-directed learning ability

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Thanks to my family for their encouragement and care along the way. They have always been my rock, inspiring me to overcome difficulties and keep moving forward.

As graduation approaches, I am reminded of the teachings of my teachers , and I am committed to working hard in my future endeavors, both in work and life.

HAN JUNYAN

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CHAPTER 1
INTRODUCTION

Background

Online self-directed learning has become the new norm for college students' learning methods (Zhang et al.,2020). Blended learning not only reconstructs the education development system, but also provides innovative ideas for educational reform.

First, the development of blended learning has removed the shackles of traditional learning environments for learners. Its flexible nature offers freedom in terms of space and time, presenting advantages in reducing education investment, promoting equity in urban and rural education, establishing lifelong learning systems, and building a learning society (Liu et al.,2022). Second, blended learning offers schools and teachers new opportunities for optimizing teaching practices. It not only provides new learning situations for learners, but also enhances schools' abilities to cultivate students' ability, and promotes teachers' development. This diversification of teaching organizations, methods, and strategies, along with the varied approaches to learning evaluation, has emerged as a new focus area for educational institutions (Asino, 2020).

Finally, blended learning offers rich resources, flexibility in time and space, and fosters strong interaction between teachers and students. The combination of traditional and online learning methods creates a continuous, flexible, and convenient personal learning space for learners. This approach expands the learners problem-solving abilities, enhances their control over their learning, boosts their interest in learning , and effectively improves the completion rates of online learning (Michael,2016). Therefore, blended learning has matured into an effective learning method and is conducive to promote educational reforms (Gou,2021). With the continuous development and improvement of blended learning, blended learning has become the dominant teaching method in colleges and universities (Wang et al., 2022). In this context, choosing the right learning method not only helps students improve their learning efficiency, but also promotes personalized and all-round development

(Kaufman,2003). Students should not passively rely on teachers to plan learning and activities but should take the initiative to learn according to their own needs, that is, self-directed learning (Jennett,1992).

Currently, self-directed learning is gaining increasing attention, with the Ministry of Education of Taiwan identifying self-directed learning ability as a key skill for students (Chen et al.,2021). The Netherlands also incorporates the concept of self-directed learning into situational teaching modes (Lin Shi,2020). Therefore, it is particularly important and urgent to promote self-oriented learning in colleges and universities. Self-directed learning is characterized by autonomy, flexibility, universality, and lifelong applicability, and is an effective means of enhancing learning ability (Neff,2020).

The advantages of self-directed learning in colleges and universities are as follows:

First, it is a necessary condition for lifelong learning for college students (Xia,2018). Second, it is an important goal of college students' curriculum reform (Rogers & Freiberg,1994). Third, it meets the subjective needs of college students' own development (Erikson,1950). Self-directed learning not only focuses on the acquisition of new knowledge, but also focuses on the learning experience of learners, which is of great significance in improving learners' problem solving ability, logical judgment ability, independent learning ability, innovative thinking ability and learning ability (Gibbons Phillips,1982). College students are the main body of college education. Only by being active, engaged and enjoying learning can they achieve higher learning efficiency (Fernández et al.,2020). The mode of blended learning provides positive elements and environment for college students' self-directed learning. Therefore, the combination of mixed learning and self-directed learning will stimulate their respective advantages and enhance the learning motivation and effectiveness of college students (Sriarunrasmee et al.,2015; Li & Hu,2022).

Production-Oriented Approach (POA) completely disrupts traditional teaching methods, by avoiding reliance on textbooks and the cramming teaching process (Niu,2020). POA involves setting up a variety of teaching tasks, make specific teaching

plans, let students create their own learning interest and style within these tasks, to cultivate students' self-directed learning ability (Su et al.,2022); It aims to provide students a diversified teaching environment that arouses college students 'interest in learning, encourages active and personalized knowledge digestion , and cultivates college students' self-directed learning ability and reflective abilities (Zhang,2020). Additionally, it encourages college students to actively engage with their learning interests, stimulating internal motivation in learning, and promoting the transformation of knowledge into practical skills (Liu & Zhang,2019; Wu,2020). POA combines the advantages of traditional and online learning to achieve integration of real world and virtual experiences, the merging of online and offline elements, and synchronizing simulation with digital tools, to fully respect students' autonomy and stimulate their initiative and creativity in the learning process.

Self-directed learning emphasizes learners' subjective initiative (Zimmerman,1990). According to their individual learning needs, leaders establish clear learning goals, develop learning strategies, and evaluate learning outcomes (Voskamp et al.,2020). The blended learning environment provides a specific context for self-directed learning (Albedah,2019). Blended learning offers flexible timing, diverse activities, and wealth of learning resources (Strambi & Eric,2003), ensuring the realization of self-directed learning. Big data analysis technology can obtain and analyze learners' learning data in a blended learning environment, offering tailored learning services, activities, and assessments (Enna,2022). Compared to traditional and online learning environments, self-directed learning of blended learning is more likely to be continuous and effective (Uz & Uzun, 2018).

The course "Archives" aims to enable students to master the basic knowledge in archives management, document processing, document sorting and filing, and file management. It focuses on practical operations, to enhance students' practical skills and stimulate self-directed learning abilities. Unlike traditional classroom settings where teachers pay attention to theoretical teaching at the expense of practical teaching (Jin,2014). Teachers may be reluctant in designing practical teaching schemes for

archive management. Some resort to classroom discussion or homework assignments instead of practical exercises. Consequently, the classroom's understanding of archives management remains shallow. Therefore, students' interest in learning and internal motivation are low, and their self-directed learning ability requires improvement (Luo,2022; Zhao,2012).

In the Production-Oriented Approach (POA) theory applied to blended classroom teaching in archives, various elements including teacher and student roles, teaching schedules, and classroom environments are vital conditions for success and act as crucial control factors (Shao, 2022). The blended classroom teaching mode is conducive to teachers' data preparation and students' self-directed learning (Wang,2021). The teaching of archival science course guided by the output-oriented method requires students to choose appropriate task format, and finally complete the classroom teaching task through on-site exercise aligned with the teaching objectives. Throughout the process, teachers should fully respect student autonomy, and only play a guiding role (Xue & Hong,2020). The output-oriented teaching system emphasizes three key stages: stimulation, facilitation, and evaluation. The development of blended teaching in archives prioritizes students' learning subjectivity and initiative, enabling students to conduct selective learning according to their characteristics and needs.

In conclusion, although teachers' teaching methods and models are being constantly improved, the effect of college students' learning has not improved significantly. The reason is that students' learning initiative and internal motivation are not fully mobilized, and their self-directed learning ability is extremely weak. It is an important problem worthy of research.

Research Question.

In the information age, knowledge is rapidly updated and iterated, and learning has become an important condition and a way of life for everyone. Learning in the information age not only depends on the planning of schools and teachers, but also requires the purposeful and active self-planning and adjustment of learners according to their own needs, that is, self-directed learning. Blended learning provides great

convenience and dedicated support for learners' self-directed learning. The advantages of flexible learning time, diverse activities, and extremely rich learning resources all ensure the realization of self-directed learning. Therefore, this study focuses on studying the self-directed learning of college students in a blended learning environment from a POA perspective, there are mainly 3 following research questions:

1. What is the current situation of college students' self-directed learning ability?

2. How many components and processes are involved in the blended learning model when using Production-Oriented Approach?

3. Is there an impact on the enhancement of self-directed learning ability based on POA and blended learning model?

Objective of the Study

This research follows the Research and Development Method. This study aims to achieve the following specific objectives:

1.To study the conditions and requirements of a blended learning model by using the Production-Oriented Approach to improve self-directed ability.

2.To develop a blended learning model by using Production-Oriented Approach to enhance self-directed learning ability.

3.To study the effectiveness of a blended learning model using Production-Oriented Approach to improve the self-directed learning ability.

Scope of the study

The investigator divided the study into three phases.

Phase I (R1): To study the conditions and requirements of a blended learning model.

The populations: The research population consisted of 96 second-year students with two classes of 48 students each majoring in secretary science at Xinzhou Teachers University.

Content experts group: The group consisted of 3 experts in Chinese language and literature and 2 experts in educational technology. They conducted interviews and group discussions to guide the development of the support system, track, evaluate and verify the quality of instruments. The specific selection requirements are provided as follows:

Possess more than 5 years of teaching experience. Engaged in Chinese language and literature and educational technology professional research.

Phase II(D1): To develop a blended learning model using Production-Oriented Approach to improve self-directed learning ability.

Samples:

1)5 model experts, comprising 3 content experts from China and 2 educational experts from Thailand, evaluated the effectiveness and feasibility of the POA and blended learning models through discussion. The specific selection requirements are provided as follows:

Possess more than 5 years of teaching experience. Engaged in Chinese language and literature and educational technology professional research.

2) 3 content experts

Phase Ⅲ (R2\D2): To study the effectiveness of a blended learning model using Production-Oriented Approach to improve the self-directed learning ability.

The populations

The research population consisted of 96 second-year students; there were two classes of 48 students in each class, majoring in secretary science of Xinzhou Teachers University.

Research 5 experts include: 3 Chinese language and literature experts and 2 educational Technology experts.

The sample

Using a cluster random sampling method, 48 second-year students majoring in Secretarial science in the faculty of Chinese Language and Literature of Xinzhou Teachers University were selected as the experimental group.

Study variables.

Independent variables: the use of blended learning model from the perspective of POA (Production-Oriented Approach)

Dependent variable: Self-directed learning Ability, which encompasses:

1) Self-management Ability
2) Self-adjustment Ability
3) Self-control Ability

Study Hypothesis.

Students who learn with a blended learning model using a Production-Oriented Approach are expected to demonstrate differences in self-directed learning between pretest and post-test assessments.

Definition of terms

Blended learning is a learning and teaching model that combines online and offline methods to enhance the learning process, provide the best learner experience, and improve teaching quality. The development of blended learning teaching mode involves putting forward a teaching approach according to the specific requirements of a certain course, or conducting teaching experiments to apply the blended teaching mode in practice and verify the effectiveness of this mode. For this research, a blended learning approach with a 50:50 proportion of online and offline components is utilized. Online activities are conducted through a learning platform, while offline components take place in multimedia classrooms.

Production-Oriented Approach (POA) is a teaching method with China characteristics. The POA theory system comprises three parts: educational idea, teaching hypothesis and teaching process. This research applies three key processes:

1) driving
2) facilitating
3) evaluating

In the driving process, teachers develop a detailed learning plan to mobilize students' interest in learning and internal motivation, so that students can independently and actively participate in the learning process. By raising challenging questions and creating real learning situations, teachers can effectively drive students' learning motivation. In the facilitation process, teachers need to design complete, specific, and interesting student activities, in which students can absorb knowledge and skills. In the evaluation process, teachers understand and master students' learning process by evaluating students' learning performance and learning process and adjust teaching strategies in time.

Self-directed learning is different from the traditional learning mode. It takes students as the leader and can freely arrange their own learning, and reads, listens, explores and practices without the control of teachers and others. The study of self-directed learning focuses on 1) self-adjustment ability, 2) self-management ability and 3) self-control ability.

1) Self-adjustment ability involves cultivating learners' self-recognition ability, such as helping learners to understand their mastery of knowledge and skills through academic examinations; and understanding their intelligence level, learning style, personality characteristics and emotional characteristics through psychological tests.

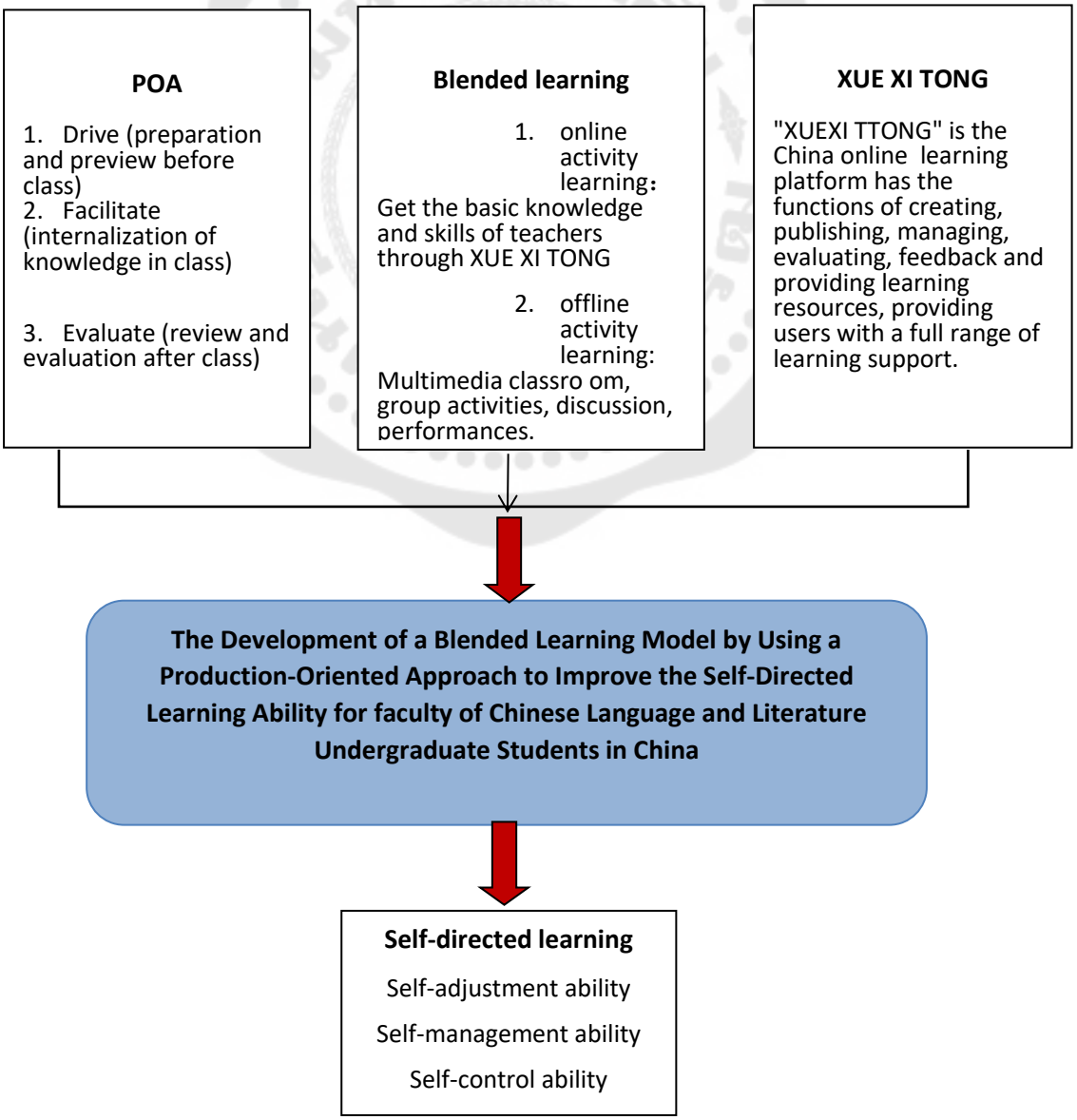
2) Self-management ability means that students are responsible for their learning goals and learning behaviors, and conduct reasonable management, organize their own learning time, conduct their own learning activities, and manage their own management.

3) Self-control ability means that students can independently adjust their learning behavior habits, realize their personal value and social expectations, and can well control their bad behaviors, such as impulsivity, delaying gratification, resisting temptation and so on. This includes managing emotions, language, and behavior. For this research, the self-directed learning ability was evaluated using a "Self-directed learning ability" questionnaire with a five scale level, and it was a self-test evaluation.

The population of this study comprised undergraduate students enrolled in the Faculty of Chinese Language and Literature during the 2023 academic year. The students had registered for basic courses, and had mastered the knowledge system of the subject, and had the necessary blended learning conditions.

A Blended Learning Model using the Production-Oriented Approach aims to improve the Self-Directed ability, by combining online and offline learning, using three main processes of POA: 1) drive, 2) facilitate, and 3) evaluate. Self-directed learning focuses on three abilities; 1) self-adjustment ability,2) self-management ability; and 3) self-control ability.

Study conceptual framework.



Figures 1 Study conceptual framework

Production-Oriented Approach emphasizes taking students 'learning output and aims to promote students' effective learning as the ultimate goal. Under the guidance of this theory, teaching is no longer a one-way indoctrination, but a two-way interaction, paying more attention to the cultivation of students' practical ability and innovative thinking.

XUE XI TONG Platform is a platform that integrates various learning resources and tools. In this system, learners can choose the appropriate learning content and methods according to their own needs and interests. This personalized and autonomous way of learning makes learning more flexible and efficient.

Blended learning is an innovative teaching model that integrates online learning and classroom learning. This new model does not only exert the situational effect of classroom teaching, but also interaction between teachers and students to strengthen the emotional communication between teachers and students. Additionally, it fully extends the flexible learning resources. The advantages of the two methods improve students' learning experience.

Combined with POA theory, XUE XI TONG, and blended learning, it provides theoretical support, technical support, and a learning environment for self-directed learning, which not only meets the diverse learning needs of learners but also improves students' self-directed learning ability, participation and learning efficiency.

The Importance of the Study

In recent years, information technology has developed rapidly, and at the same time, education is also constantly reforming. Traditional teaching methods struggle to adapt to technology-driven advancements in education. Therefore, exploring a new teaching mode can not only improve students 'interest in learning but also stimulate students' internal motivation. In this context, the study of the POA and blended learning model is particularly important. This study expects to bring out several improvements:

1.The POA and blended learning model customizes learning plans, provides personalized learning resources, and offers diverse learning paths to meet personalized needs of students. The approach can stimulate students 'interest and

intrinsic motivation, which is very beneficial to improving students' self-directed learning and teamwork abilities.

2. The POA and blended learning model enhances learning effectiveness. Combining classroom learning and online learning engages students in flexible learning at their preferred time and location. They can also adjust their learning strategy according to their needs, leading to improved learning outcomes and increased efficiency.

3. In the POA and blended learning model, students not only acquire knowledge, but also cultivate their comprehensive qualities such as innovative thinking, critical analysis, and teamwork. Through interaction, discussion, and practical exercises students can enhance their overall quality and readiness for the future.

The implementation of POA and blended learning model also contributes to balanced allocation of educational resources. In the past, educational resources have been relatively concentrated in urban areas and developed regions, leaving rural and underserved areas with limited access to quality education. However, through the POA and blended learning model, high-quality educational resources can be disseminated to more students through the internet. This facilitates a balanced distribution of educational resources and promotes educational equity.

To sum up, the POA and blended learning model is an innovative learning method that provides innovative ideas and methods for educational reform. The application and promotion of this model can meet the individual students' needs, enhance learning quality, improve self-directed learning ability, and enhance the comprehensive quality of students. Furthermore, it facilitates the balanced distribution of educational resources, and makes a greater contribution to the future of education.

CHAPTER 2

REVIEW OF THE LITERATURE

In this study, the investigators studied the relevant literature and research, and proposed the following five topics:

1. Blended learning

1.1 Origin and meaning of blended learning.

1.2 The definition of blended learning

1.3 Blended learning model

1.4 The role of blended learning on self-directed learning

2. XUE XITONG

2.1 The function of XUE XI TONG

2.2 The uniqueness of XUE XI TONG

3. Self-directed learning

3.1 The meaning of self-directed learning

3.2 The analysis of self-directed learning and other similar concepts

3.3 Factors in the influence of self-directed learning ability

3.4 Core competence of self-directed learning

4. The Production-oriented Approach (POA) theory

4.1 Sources and development of the POA theory

4.2 Implications and development of POA theory

4.3 The POA theoretical system

5. Related Research

5.1 Related research on blended learning

5.2 Related research on self-directed learning

5.3 Related research on POA theory

1. Blended learning

1.1 Origin and meaning of blended learning.

"Blended Learning" often abbreviated as "BL'', has different expressions in the English language such as : "Blended learning" or "technology-mediated instruction"(Harasim & Linda,2000).Its history dates back to 1840 (Pappas,2021).BL has evolved from distance and open education initiatives (Serrano et al.,2019). Although the use of the term BL is relatively new in the literature (Hrastinski, 2019), the concept of BL first emerged in the early 2000s (Siripongdee et al.,2021; Qi,2022). The term "BL'' was initially vague, including various combinations of techniques and teaching methods (some which do not use technology at all). However, with the publication of the BL Manual, the term became more specific (Bonk&Graham,2006). The concept of BL is quite broad (Cobo-Rendón et al.,2022). Blended learning is a proprietary concept in the teaching field (Qi,2022).In essence, BL is a new way of learning or a learning concept. The literal meaning of BL is easily understood, but the true meaning is not necessarily clear. It raises questions about how to blend it—whether it involves a mixture of teaching methods or a combination of teaching techniques (Hrastinski, 2019)

Blended learning (BL) is characterized by its combination of online learning, offline classroom learning, and students' independent learning (Dziuban et al., 2018; Bonk & Graham, 2012; Garrison & Kanuka, 2004). BL is a combination of teaching methods, learning methods, and learning process (online + offline) (Graham,2013). BL is a design methodology with planning, goals and strong orientation, leveraging the advantages of offline teaching and online learning to realize the value of education (Garrison & Vaughan,2008;TASLCASFEBL,2022). BL can take different measures to achieve educational objectives, including online learning methods and group activities (Jang&Hong,2016). BL has flexible and diverse learning methods, sufficient and diversified learning materials (Allan et al.,2019). The teaching design is novel and interesting, which can not only help students choose appropriate and favorite learning materials (Tambunan et al.,2021), but also effectively use technology to enhance the learning effect and create a learning environment that students like (Megahed Ghoneim,2022).

BL is also described as a model, where teachers, guide, inspire and manage students in offline classroom teaching, .In this model students are the main body, benefiting from customized learning plan, schedules and learning style (Chebotar et al., 2017; Wanner&Palmer,2015;Zhao et al.,2017). BL aims to complement traditional teaching methods and promote effective learning behaviors (Bruggeman et al.,2021). However, BL is not a fixed model, it is flexible and adaptable, allowing customization according to students' level, interest, and subject matter (Cobo-Rendón et al.,2022).

BL is seen as an innovation in higher education and a new trend in educational scientific research (Picciano et al.,2014). BL combines the best online and face-to-face elements (Ma & Lee,2021), to facilitate interaction and collaboration among students, providing an opportunity to rethink the roles of teachers and learners (Starr-Glass,2014). The implementation of BL can promote educational practice (Yang et al.,2022), and will become the mainstream teaching model in the future (Ma & Lee,2021).

Table 1 Summary of the blended learning definitions

Investigator	Blended learning definition
Dziuban et al., 2018	Face-to-face experience and online experience
Garrison & Kanuka,2004	Teaching method and teaching method and face to face and online learning
Graham, 2013	Traditional learning and E-learning
Garrison&Vaughan,2008	Planned learning methods
Jang & Hong,2016	Online learning methods and learning means
Tambunan et al.,2021	Diversified learning models

In summary, blended learning refers to the effective combination of different learning theories, learning methods and learning media to optimize their functionalities. Firstly, it offers real-time face-to-face formal and informal learning. Secondly, it uses email, communities, social networking sites, online platforms for collaboration, interactive synchronization, or asynchronous learning. Thirdly, with the help of online resources, knowledge base, games, Online testing, and other self-paced autonomous learning.

1.2 The definition of blended learning

There are a lot of definitions of BL, from which we can see that blended learning contains an extremely broad meaning, but it is essentially the same. The author believes that blended learning is the organic integration of traditional learning and E-Learning. Blended learning is a blended learning system, with both a sense of technology and the charm of an offline classroom. It includes the following aspects:

1) Blend of learning theory: a combination of various learning theories, such as behaviorism, humanism, cognitivism, etc. One of the most popular theories is constructivism which stems from the development of cognitivist theory.

2) Blend of learning methods: This refers to the choice of centralized teaching locations, which can include both online and traditional classroom learning.

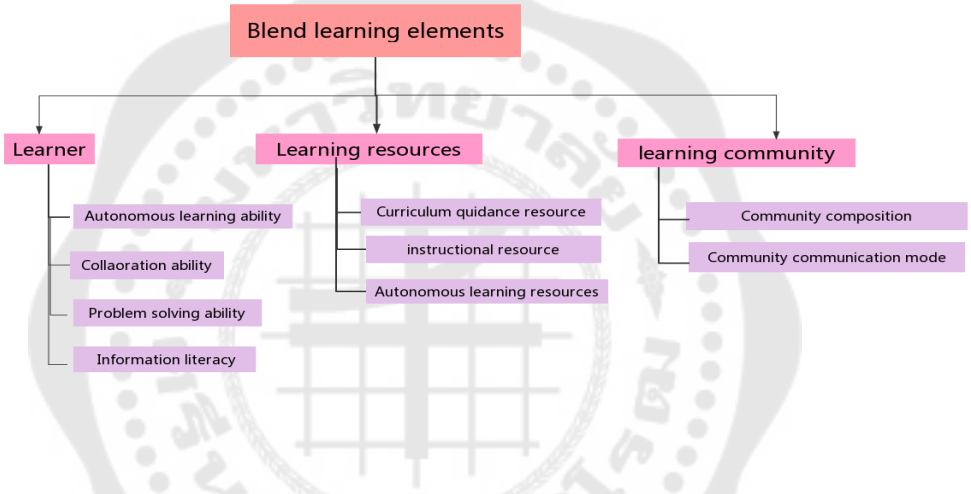
3) Blend of learning resources: Learning resources include traditional learning resources, digital resources and networks learning resources. Traditional learning resources are mainly textbooks, and the digital learning resources refer to the multimedia teaching information materials accessible in the information technology environment, including digital video and audio, email, learning management system, database, etc. Network learning resources refer to the resources supported by network technology.

4) Blend of learning media: This includes the use of traditional teaching aids like textbooks, blackboard, chalk, specimens, experimental devices alongside modern teaching media such as slides, projections, videos, films, TVs, computers etc.

5) Blend of teaching modes: In terms of effectiveness, blended learning integrates both teacher -centered and learner -centered teaching modes and attaches importance to the students' role as an active participant and teacher's role as a guide.

6) Blend of learning settings: This aspect integrates structured learning, such as textbook-based knowledge, with unstructured learning, which may be more diverse and network-based.

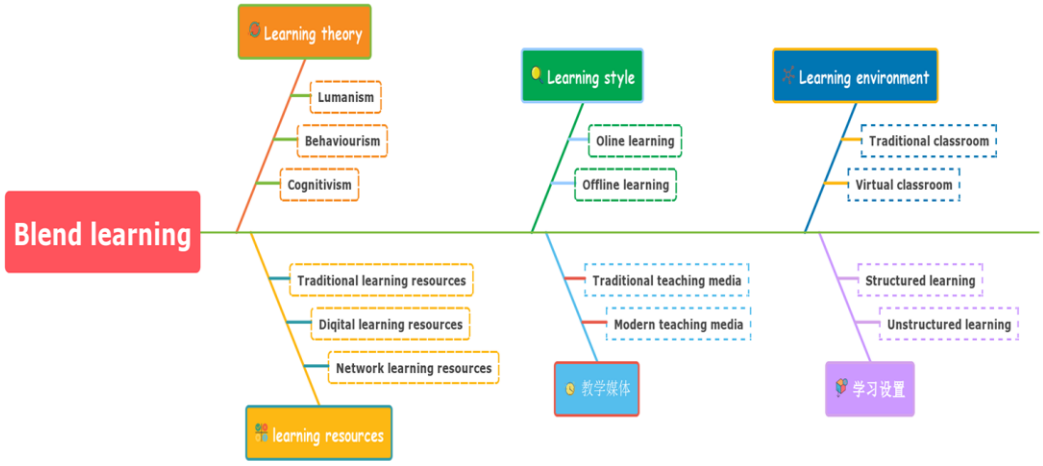
In summary, the elements of blended learning include:



Figures 2 Summary of the elements of blended learning

Based on this, this study defines Blended Learning (BL) as a teaching mode that organically integrates learning time, learning roles, learning places, and learning resources based on various learning theories to realize the optimal teaching allocation. The two major elements of BL are Classroom teaching and network learning. Classroom teaching is instruction and learning guided by teachers in the physical school environment such as classroom, laboratory, and conference room, while network learning is teaching and learning based on the network virtual environment.

1.3 Blended learning model



Figures 3 Different definitions of blended learning

Currently, there is no clear definition on whether blended learning mode is a model or form of characterizing real activities according to a certain theoretical basis. It represents the activity structure or process of a certain object, that is, reproducing the activity structure and operational program of the object in a concise form (Zhong,2005). Blended Learning model refers to a way used to clearly show the BL process and clarify each link of BL (Li & Zhao,2004). In fact, there is no standard definition of hybrid learning mode, as long as the teaching can give full play to the advantages of online and offline teaching, and integrate it reasonably and efficiently (Yang et al.,2022). The BL model does not stick to the choice of time and place (Sumarmi et al.,2021). Its essence is to maximize the advantages of online and offline teaching, which is a highly effective learning mode (Reichstein et al., 2019).

The researchers propose different blended learning models. These models include:

Face-to-Face Driver Model (Kolinski,2022; Odmdae, 2015). Suitable for students with different skills and ability levels, it is the closest to the traditional teaching model. It is focused on helping struggling students by introducing online teaching to supplement the classroom curriculum (mainly for the personal needs of those learners

who are trying or want to surpass themselves) (Smobl,2013). The characteristic feature is that most courses are taught face to face.

Online Driver Model (Odmdae,2015; Kolinski, 2022): Contrary to the face-to-face driver model, the online driver model relies entirely on online teaching. Distance learning is offered to students through materials provided online, and it has the potential to clarify the course content to students through traditional personal sessions (Kolinski,2022). This model is ideal for students with chronic diseases, students who need to be flexible with other obligations, or students who want to progress faster than traditional school environments. It combines synchronous training and asynchronous training.

Rotation Model (Staker & Horn,2012; Kolinski,2022): in which the teacher creates different learning stations. The teacher set a schedule for students to rotate between sites (to cycle on a schedule) on a fixed schedule, moving between face-to-face teaching and online assignments. Using digital learning tools at rotation stations, teachers can arrange face-to-face teaching time according to the specific needs of students (Kim,2021). Features are mostly or completely online courses.

The Flexible Model (Kolinski,2022) allows students to choose a learning model that suits them and is specifically designed for students who have not completed the course and have somehow returned to education. It is a bridge course. Most of the courses are provided through a digital platform, focusing on student self-directed learning, and teachers can conduct face-to-face consultation and support.

The Online Lab Mode (Tolsmoble,2021) entails Students studying completely online and using computers to complete the course (Kolinski,2022). Its primary features include most, or fully online courses being conducted in a computer lab or in a classroom where students meet each day.

The Self-blended Model (Staker & Horn, 2012) allows students to participate in classroom learning, or choose online courses to supplement their learning.

Flip classroom model (Staker & Horn, 2012) allows teacher-led classes, and students can watch the remaining video lectures at home at their convenience. Features are "online learning, offline applications" (Liu, 2021).

There are many components that can constitute a mixed learning model, and according to the definition of BL mentioned above, different patterns can be determined according to different teaching methods (Clark,2022).

To sum up, the practical study of blended learning involves three main aspects. First, the construction of blended learning mode is the designing and implementing of the blended learning mode based on online teaching platforms (such as Blackboard, MOOC, SPOC) and social software (QQ, WeChat, Weibo). The other is the learning model that promotes some ability of learners. Second, it involves designing, developing, and implementing courses under blended learning. Third, entails the application of blended learning in practical settings.

1.4 The role of blended learning on self-directed learning

Blended learning enables learners to manage their learning pace (Setyaningrum,2019), set their own goals, manage their own time, and monitor their own learning progress (Tucker,2021). Moreover, it can enable students to balance their studies more effectively (Weitzel,2021), and enhance their independent learning ability and learning outcomes (Anthonysamy et al.,2020).

BL not only enables students to learn in a more self-directed way, but also allows teachers to manage heterogeneous groups more effectively (Ferdinand,2005). In an interactive BL environment, student-centered teaching methods have a positive impact on student self-directedness (Wittmann & Jako,2021). Teachers can easily maintain students' learning enthusiasm and continuous learning through various online and offline ways, which is the most appropriate way to cultivate self-directed learning skills (Adinda & Marquet,2018; Salehet et al.,2021). The online environment offers several possibilities to support and motivate self-direction, allowing students to investigate their own specially designed databases (Sriarunrasmee et al.,2015). Blended learning creates a medium for developing self-directed learning (SDL) skills

(Lupi et al., 2015; Foerst et al.,2017; Zhang, 2019). A blended classroom approach facilitates students' participation in content, promotes classroom engagement as well as continued motivation and autonomy (Chailapo & Kanjananopinit,2022). Co-creation in blended learning courses, particularly assessment, enhances students' learning motivation, initiative, and collaborative engagement (Marín&Salinas,2022; Lu&Zheng,2021).

Table 2 Summary of blended learning

BL-related vocabulary	Opinion
Blended learning process	Support independent learning
Blended learning resource	Rich in learning resources
Blended learning tool	All kinds of learning tools
Blended learning community	Personalized learning needs
Flex model	heterogeneous group
Online and offline	Promote students' enthusiasm and continuous learning
Blended courses	Check the database according to your own interests

2.XUE XI TONG

2.1 The function of XUE XI TONG

Xue Xi Tong Learning Pass is a free application that integrates mobile teaching, mobile learning, mobile reading, and mobile social networking. It contains the following applications:

Learning resources: Mobile library, mobile museum, famous teacher forum, course square, micro-reading, and other learning resources.

Learning tools: Student schedule, examination, cloud disk, big data search, information retrieval, ability assessment, recruitment, and other learning tools.

Learning Community: Knowledge sharing community of all disciplines.

Teaching tools: Teachers' class schedule, demonstration teaching package, screen casting, roll call, sign-in, whiteboard, live broadcast, theme discussion, group tasks, voting, questionnaire, quick answers, selection, in-class practice, homework database and other intelligent teaching tools.

Figures 4 XUE XI TONG platform

Xue Xi Tong is rich in teaching resources, and is a comprehensive teaching platform integrating mobile, classroom and management. It is available in both web and mobile client versions. It not only has massive, rich, and free digital teaching resources, but also integrates resource management, course learning and office application, thereby providing a good learning and working environment for learners (Yang, 2020). The platform has comprehensive functions, such as unlimited time and place learning, classroom interaction function, tracking students' learning process, question bank management, data analysis, etc. At the same time, it helps students to improve their learning efficiency and teaching quality (Shen,2022).

After downloading the learning pass software and registering an account, teachers can use the platform to publish courseware, teaching plans, pre-class preview sheets, audio and video questions, as well as test questions (Liu,2022). Xue Xi Tong has the functions of releasing materials before class, releasing check-in during class, topic discussion, quiz, students uploading answers in real time, showing statistics of

answer questions, and conducting group discussion in class. Before class, teachers need to set up a learning plan for the whole semester in the "Xue Xi Tong", including the teaching progress, the selection of teaching chapters, the implementation plan of the quiz and theme discussion, the preset of evaluation and assessment, and the course assessment form at the end of the semester.

2.2 The uniqueness of Xue Xi Tong

The seamless connection of the mobile terminal, the classroom and the management end of "Xue Xi Tong" enables teachers to carry out teaching work in any place and at any time, which greatly improves the flexibility and efficiency of teaching.

The web version of the learning interface is simple and clear, with complete functions, which is convenient for teachers to prepare lessons online, publish homework, organize online exams, etc. At the same time, the web version includes a variety of learning modes, such as discussion, group activities, speech, etc., which allows students to freely switch between modes and greatly improve students' interest in learning and enthusiasm.

The general learning principle of the mobile client version is more convenient, and teachers can conduct teaching and interaction anytime and anywhere, without the limitation of time and place. Students can also access the learning Pass at any time on their mobile phone or tablet computer, view the course materials, complete homework, participate in online learning, etc., truly realizing the concept of "mobile learning".

In addition, it also provides rich teaching resources, including various course materials, question banks, video tutorials, etc., providing a broad learning space for teachers and students. At the same time, learning is also supported by a variety of teaching modes and methods, such as mixed teaching, flipped classroom, etc., providing more teaching choices for educators.

In short, Xue Xi Tong is a comprehensive teaching platform with powerful functions, rich resources, and convenient operation, providing teachers and students with efficient, convenient, and interactive learning experience.

3. Self-directed learning

3.1 The meaning of self-directed learning

Systematic studies of self-directed learning began in the 1960s (Loeng, 2020). Research in self-directed learning has gone from early childhood education to all educational sectors of higher education (Mentz & Bailey,2020). This has been considered an important goal since the early 1960s (Gardner & Miller,1999). Adult learners were observed to exhibit three types of learning motivation, respectively: goal-oriented ones, activity-oriented ones, and learning-oriented ones (Houle,1961). "Learning-oriented learning" was later defined as "Self-directed learning", which laid the foundation for further research on self-directed learning theory (Brockett & Donaghy,2005).

Tough first proposed the theory of "self-directed learning", arguing that learners can customize learning plans and learning activities to suit their individual needs (Tough,1967). Holec subsequently provided his own definition of self-directed learning, describing it as an attitude towards learning and the ability to assume responsibility for it (Holec,1979; Chomeyaet al.,2022). Benson further elaborated on this concept, suggesting that autonomous learning is not simply taking responsibility for one's own learning, but the ability to control one's learning](Benson,2011).

Self-directed learning (SDL) is a process of making suitable learning plans, using reasonable learning resources, taking practical learning actions, and effectively evaluating the learning results according to one's learning needs (Knowles,1975; Voskamp,2020; Pang,2003). SDL incorporates a learning attitude and personality characteristics where students take responsibility for their own learning and can clearly grasp the will and goals of learning (Sun et al., 2022; Li et al.,2022). In SDL, students can independently explore, practice, and create new learning directions and methods. Teachers play the role of help and guidance, focusing on student-centered learning and problem solving, (Calvo et al., 2019; Horváth&Mirabent,2020). The responsibility of the learner is to make the decisions, not necessarily to implement them personally. When the learner completes all the decisions himself, then they can be called a self-directed learner, and vice versa (Collier,2022). Self-directed learners must have minimal control

over the time, speed, and place of learning. Teachers must be aware of the huge differences in the ability and will to self-guide and adjust their learning situation according to the various stages of autonomy (Loeng,2020).

Table 3 Different definitions of self-directed learning

Investigator	Opinion
(Holec, 1979)	Self-directed learning is the ability of learners to manage their own learning.
(Benson, 2011)	Self-directed learning is the ability to control your own learning.
(Knowles, 1975; Pang, 2003;Voskamp et al., 2020)	Self-directed learning is the process and ability of learners to make learning plans and practice according to their own learning needs.
(Sun et al.,2022;Li et al., 2022)	Self-directed learning is a personal characteristic to learns in a responsible attitude.
(Calvo et al.,2019; Horváth & Mirabent, 2020)	Self-directed learning is a process of taking students as the main body and acquiring knowledge under the guidance of teachers.
(Collier, 2022)	Self-directed learning completes the decision in person.
(Loeng, 2020)	There are huge differences in self-directed ability and will.
(Votruba&Brookfield,1987. Charokar&Dulloo,2022)	Self-directed learning does not represent a completely independent learning
(Steffens, 2015)	Self-directed learning is a meta-theory of learning.
(Melkonian, 2022)	Self-directed learning is an intrinsic motivation to drive your learning process
(Dickinson,1995; Shao et al.,2022)	Self-directed learning is both an ability and an attitude.

SDL is not a completely independent learning, but a learning process driven by intrinsic motivation (Melkonian, 2022), although students can control their learning time and place (Votruba & Brookfield,1987; Charokar & Dulloo,2022). Self-directed learning is both an attitude and an ability (Dickinson, 1995; Shao et al., 2022).

To sum up, although there are different opinions on the definition of autonomous learning, there are common features: First, autonomous learning is the active selection and control of learning methods and learning process by students, while active learning only highlights the positive direction of learners in learning motivation. Secondly, independent learning is not independent. Teachers, parents, and peers can all provide help according to the needs of learners. Teachers can design effective independent learning activities, to improve students' independent learning ability. Thirdly, autonomous learning is the result of the combination of cognitive, emotional, and external environments.

The concept of self-directed learning can be interpreted differently from different research perspectives and researchers. The focus of this research is to improve the self-directed learning ability of Chinese college students through a blended learning approach based on POA theory and improve their learning outcomes .This paper defines the autonomous learning behavior as: students are the main body, who customize their learning plans and learning strategies according to their own actual needs, create learning situations according to their own learning habits, and engage in the process of self-monitoring and self-feedback.

3.2 The analysis of self-directed learning and other similar concepts

There are many English terms corresponding to "Self-directed learning", falling in the following categories: Autonomic learning, self-regulation learning, and active learning (Li,2013).

Autonomic Learning emphasizes competence. Pang Guowei believes that all aspects of learning before, during and after the development are selected and controlled by learners themselves, so the learners' learning is self-directed learning (Pang,2001). Compared to self-directed learning, more emphasis is placed on the

individual independence of learners. Highlighting the high degree of freedom of students in the process of learning, but this freedom does not mean that teachers give up their management rights, if learners are completely isolated from others, then it cannot be regarded as autonomy.

The concept of self-regulation learning originates from cognitive psychology and aims to reflect the psychological process of learners' learning, including the regulation and control of their own emotions, cognition, and meta cognition during the learning process (Jiang et al., 2018). Compared with self-directed learning, self-regulated learning covers a narrower scope. The tasks in self-regulated learning are assigned by teachers. Learners only need to monitor and adjust their own learning process, and do not need to carry out social interaction under the guidance of teachers.

Active learning refers to the process of individual knowledge reconstruction of learners through human interaction (Mori, 2017). In teaching practice, active learning usually uses the teaching formats of group activities, discussion, and demonstration (Matsushita,2018). Different from self-directed learning, active learning focuses not on what students learn actively by themselves, but also focuses on what students learn by participating in learning activities.

Table 4 Self-directed learning is compared with other similar concepts.

	Self-directed learning	Autonomic learning	Self-regulation learning	Active learning
set goals	√	√	×	×
draw up a plan	√	√	×	×
Select Policies and Resources	√	√	×	×
Monitor the learning process	√	√	√	×
Regulation of learning progress	√	√	√	×
Assess the learning process	√	√	√	√
Conduct cooperative learning	√	×	×	√
Peer mutual evaluation	√	×	×	√
teacher evaluation	√	×	×	√

To better distinguish between self-directed learning and other similar concepts, this study distinguishes between autonomic learning, self-regulated learning, active learning, and self-directed learning, as shown in the table.

To sum up, self-oriented learning not only emphasizes the students' guidance and choice of their whole learning process, but also involves the guidance and help of teachers. Self-directed learning pays more attention to and emphasizes stimulating students' internal motivation and adopts the combination of independent learning and multiple activities to meet the various needs of learners.

3.3 Factors in the influence of Self-directed learning ability

There are many factors affecting college students' independent learning ability. The external factors include four aspects: achievement-oriented teaching concept, teaching-centered teaching mode, achievement-oriented evaluation system, and knowledge-oriented courses (Lou,2021). Intrinsic factors such as motivation, IQ, and learning strategies can all affect their autonomous learning ability (Ma et al., 2022). There are also some other factors, such as cognitive style, practical management, control ability, regulation ability and other specific and unrecognized factors (Wang,2020).

SDL is closely related to self-regulation, self-control, and self-management ability, and during the learning process, students' behavior and cognition are affected by these three abilities (O'Shea, 2003). The improvement of independent learning ability is not only related to their own creativity, problem-solving ability, and logical thinking ability (Tekkol & Demirel,2018), but also related to the teacher-student relationship. For example, with a good relationship between teachers and students, students can actively and happily participate in teaching activities, which will have a strong incentive effect on students' self-learning (Shao et al.,2022). Transform students' negative learning attitude into positive self-cognition and concentration (Khalid et al.,2020).

The effectiveness of learning largely depends on the self-directed learning ability of the learners (Lou,2021). The ability to learn independently can be cultivated in many ways (Ye,2021). A learning contract is an agreement between a teacher and a

student that specifies the work the learner will do within a given period. Learning contracts can be used to keep individuals in order, regulate, and increase communication between learners and teachers. The contract consists of five parts, similar to the self-directed learning process: learning objectives, learning resources and strategies, target completion date, evidence of achievement, and evaluation criteria (Robinson,2020).

In general, the factors influencing college students' independent learning ability can be divided into external factors and internal factors. Internal influencing factors such as motivation and attitude related to students are more significant, while external factors play a supporting role. Based on these literature and studies, there are three main findings: First, influencing factors and promotion strategies are key parts of research in this field. Although previous studies have covered many areas, the backdrop of the universal and COVID-19 pandemic of higher education reflects the magnitude of the learning environment. Second, future research needs to address the following issues, such as expanding the design and methods of research on self-directed learning, how to develop the competencies necessary for effective self-directed learning, and how to measure the quality of self-directed learning resources. Third, methods need to be developed that allow learners and others to evaluate the value and effectiveness of self-directed learning.

Therefore, it is necessary to base itself on the new stage and the unique environment, and closely combine education with Internet technology, so that learners can master the methods and strategies of self-directed learning, and deal with various sudden situations and changing environments.

3.4 Core competence of self-directed learning

The individual nature of self-directed learning emphasizes autonomy, choice, and self-actualization. Learners are seen as self-directed and have informed decision-making capabilities (Elias & Merriam,1995). Self-directed learning allows learners to freely and independently choose the content, purpose, method, and place of

learning (Francis,2017).Self-directed learning includes self-adjustment , self-management , and self-control .

Learners with strong self-adjustment ability have strong sensitivity and adaptability to different learning resources. They can quickly respond to new learning requirements and challenges, constantly adjust their learning strategies and methods (Ariffin et al.,2020). Additionally, they can think independently and motivate themselves, and constantly tap their learning potential.

Self-management ability is one of the core elements of self-directed learning. It requires learners to be able to manage their time, make learning plans, and implement them effectively. Learners need to learn how to balance study, work, and life to ensure that learning goes smoothly. At the same time, self-management ability also includes the effective integration and utilization of learning resources to better support the learning process (Hutasuhut & Jonathan,2021).

Self-control ability is a fundamental component of self-oriented learning. It requires learners to be calm and firm in the face of difficulties and challenges, and not to give up or retreat easily. Self-control ability also includes the control of learning progress and the pursuit of learning quality. Learners need to learn how to adjust their learning pace and approach to ensure the maximum effect of learning (Moradi, 2018).

To sum up, self-directed learning is a way of learning that emphasizes autonomy, choice, and self-actualization. It requires learners to have abilities such as self-adjustment, self-management, and self-control. Through self-directed learning, individuals can better realize their value and development potential, and become lifelong learners and developers.

4.The Production-oriented Approach (POA) theory

POA is a new teaching method, characterized by designing real communication scenarios to stimulate students' interest in learning under the assumption of "output-driven' learning (Wu,2020). POA is feasible and effective for English learning in higher education (Lou & Zhao,2021; Zhang,2005).

4.1 Sources and development of the POA theory

The POA theory was proposed by Professor Wen in 2015, drawing from the teaching of Chinese as a foreign language (Wen,2015). POA draws lessons from the famous foreign input hypothesis and output hypothesis theories (Du,2022). In 1985, the famous American linguist Stephen Krashen proposed the input hypothesis (Krashen,1982), while Canadian scholar Merrill Swain proposed the output hypothesis. Swain defined understandable output as "precise, appropriate, and coherent information" (Swain,1995). Swain's interest in output arises from her ongoing study of French immersion courses in Canada (Swain, 1985). Swain's findings challenged Krashen's input hypothesis (Oller& Krashen,1988; Krashen,1985). Swain extended its scope and identified three functions of output: attention, hypothesis testing, and reflection, and meta-linguistic functions (Swain,1995).

When studying, there should be gaps in learners' language knowledge (Swain,1993). Learners must pay attention to the gap or mismatch between their mediated language production and the target language form (Schmidt & Frota,1985). They try to fill the gaps in their knowledge (Swain,1995; Swain,2000). Reflection or meta-linguistic function means that when trying to solve problems in their output, learners may consciously reflect on the nature of the language system (Izumi,2002; Swain & Lapkin,1995).

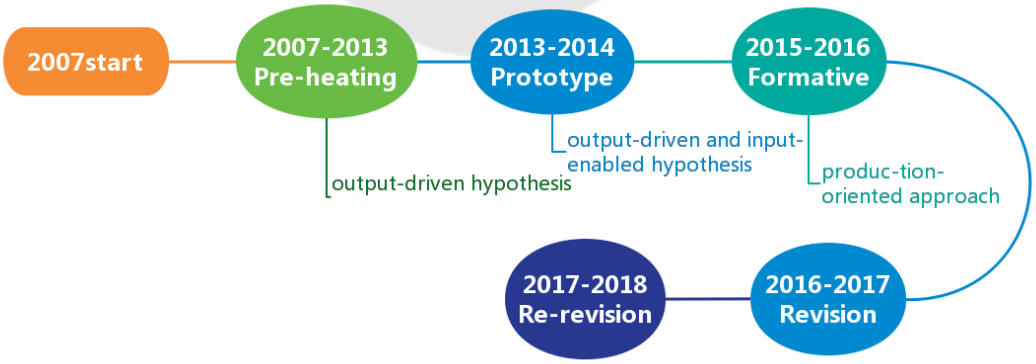
Input assumptions are important for language learning outside of the learners' native language. Effective input assumptions can create a good learning environment for learners and facilitate their understanding of languages other than their native language (Krashen,1982; VanPatten,2003). Learners must have enough motivation to learn foreign languages, otherwise it will affect the learning efficiency. If the output assumptions are insufficient, students are prone to have learning difficulties and give up learning (Grabe,2016; La,1994). Output assumptions have been prominent in the field in terms of applicable suggestions in language classes. But there are some vague flaws, such as the lack of a tangible definition of understandable output (Peker & Arslan,2020). In the classroom, when learners receive negative or corrective feedback,

they may feel scared and frustrated (Roothooft & Breeze,2016). The definition being too broad presents an unobservable and unmeasurable problem. Zaccaron focuses on three claims of the output hypothesis: attention function, hypothesis testing, and collaborative dialogue (Zaccaron,2018).In this process, students will realize their lack of language ability, and they will be more actively engaged in learning, so as to make up for their own shortcomings (Luo et al.,2019).

Hyland explored and applied the POA method in teaching (Hinkel,2006). Later, some researchers optimized teaching methods under the guidance of POA and conducted teaching experiments which were of immense help and improved students' interest in learning (Kern & Schultz,1992). Teaching practices under the guidance of POA theory emphasize the student-centered approach, fully considers the actual needs and subjective requirements of students, and emphasizes the use of different input and output methods (Kong,2022), which has good results on language courses (Du, 2022).

4.2 Implications and development of POA theory

The Production-oriented Approach, namely "output-oriented method", is a two-language teaching method proposed by the research team represented by Wen Qiufang, which has been refined through several rounds of research by many university teachers (Wen, 2007). Through unremitting efforts and practice, POA formed a system in 2014 (Wen, 2014). The development of POA goes through five stages (Wu, 2020).



Figures 5 Summary of the development of the POA

In 2017, Professor Wen's team changed the theoretical system of POA for the first time, and "teacher intermediary" was changed to "teacher guidance" (Sun & Asmawi,2021). POA is an educational method with Chinese characteristics and aims to solve the long-standing problem of "separating learning from application" among foreign language learners in China (Yang,2022). All teaching activities should be conducive to learning, with output as both the starting point and goal, and solve the problem of separation between learning and application (Li & Li,2020). POA can bring theoretical support to the classroom practice and reform of college teachers (Sun et al.,2021).

POA focuses on output drive in the early stage, believing that output can motivate college students' learning performance more than input (Wen,2007). The purpose of output is to stimulate students' learning desire and enthusiasm (Zhang,2015), starting with "output" and ending with "output" (Sun & Asmawi,2021). With the further development of POA, more attention is paid to the mutual supporting role of input and output, emphasizing the equal importance of input and output (Yang,2022). Therefore, POA has been further improved and verified in practice, which plays a positive role in stimulating learning motivation and improving the communication ability of college students (Zhang,2020; Zeng & Li,2019).

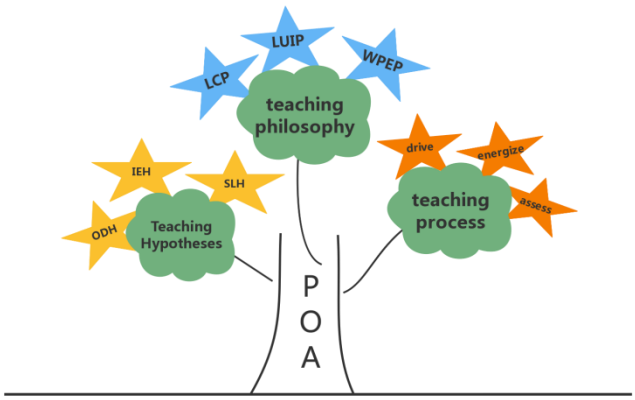
4.3 The POA theoretical system

The POA theory system includes three parts: teaching philosophy, teaching assumptions and teaching process (Jiang et al,2021). The teaching concept mainly puts forward "learning-centered", "learning and application-centered" and "education" (Wen,2018). Unlike traditional “student-centered" approaches, POA advocates "integrating learning and application", encouraging simultaneous learning and practical application, as well as the fusion of learning and application processes (Li & Li, 2020).

The teaching assumptions consisted of four elements: the output driven assumption, input facilitates hypotheses, selective learning hypotheses, learning in evaluation (Wen, 2015; Wang,2021). The teaching hypothesis puts forward the "output first" and then “input", emphasizing the role of students as the "active builder" in language learning (Wen,2015). The output-driven process of POA can help students

recognize the limitations of their learning ability by trial, thus generating learning motivation (Liu &Zhang,2019). Through multiple cycles of drive, facilitation, evaluation processes, POA lets the students find the problems, solve the problems, master the problems, and help the students to internalize the classroom knowledge (Xie,2021). In the whole cycle process, teachers should make full preparations, make good, detailed teaching plans, and provide professional guidance for students (Wen,2016).

The teaching process of POA is divided into three steps: driving, facilitating, and evaluating (Wu,2020; Wen,2013; LI & WU,2020). There are several teaching cycles in each learning activity, and the specific number is decided by the teacher. The teaching process of POA is implemented under the guidance of teaching concepts, which is the carrier of testing teaching hypotheses, and is also the means to achieve teaching objectives (Wen, 2017). The three stages are interrelated, and the small links of each stage are constantly cooperating with each other and play a role (Wen,2015). Among the three steps, facilitation is the main link and plays a significant role in the whole teaching process (Yuan & Dung,2022). POA focuses on what students can learn, not simply evaluating speech in class (Goyal et al,2019). The POA teaching process follows the order of "output" - “input" - “output", so that students can perceive the difficulties and challenges of "output" in real situations , engage in targeted input and exercises, and finally achieve the improved "output" (Wen, 2017).



Figures 6 Summary of the composition of the POA

The orderly and reasonable integration of POA theory and blended teaching mode can give full play to the advantages of both approaches, effectively mobilizing the enthusiasm of college students, bridging the gap between teachers and students, and have a significant impact on improving students' learning ability (Cao & Peng, 2019). Teaching under the guidance of POA can stimulate students 'initiative and enthusiasm in learning, internalize knowledge deeply (Wang, 2019), and paying more attention to the cultivation of students' abilities, especially their independent learning ability (Huang,2022). The effective application of POA and blended learning methods can open new ways for curriculum reform and implementation.

In recent years, there have been many articles on POA theory and self-directed learning. POA theory has improved teaching efficiency in college English lectures. The blended teaching mode combined with the advantages of traditional and online learning teaching modes can provide better teaching results for college English listening and speaking classes (Wang,2020).The "output-oriented method" under the blended teaching mode is conducive to improving learners' independent English learning ability (Zhang & Lu,2021).The output-oriented method (POA) integrated into blended teaching strategically allocates teaching resources, design, optimizes and improves classroom teaching modes, improves evaluation mechanisms, and builds a combined online and offline hybrid teaching model for college English (Ren,2020).

Reference opinions are put forward for the influencing factors affecting college students' self-directed learning ability (Tian,2022). Under the blended learning mode, there is a call to innovate the training path of independent foreign language learning through online open course platforms and mobile apps , so as to improve the self-directed English learning ability of students in independent colleges (Wang,2020). Research investigates the current situation of college students learning under the blended learning mode to explore new ways and strategies to improve the online self-directed learning of college students (Chen, 2010).

5. Related Research

5.1 Related research on blended learning

The number of people receiving higher education is increasing, and differentiated teaching through blended learning pays less attention to the differentiated teaching of higher education (Boelens et al.,2018). How does blended learning incorporate flexibility? How to promote interaction? How to create an effective learning atmosphere? Is an important problem facing blended learning (Boelens et al.,2017). Using blended learning techniques in language classes (Sharma & Barrett,2007). The effectiveness of blended learning for college student learning (Nantarat et al.,2019). The role of blended learning on college students' independent learning ability (Dittha,2022). Blended learning environment (GWIMBLE) in writing teaching to improve the English writing ability of Thai learners (Visser&Sukavatee,2020). blended learning in the case of COVID-19 outbreak, to develop student potential management methods (Patphol et al., 2023). The influence of the blended learning environment on student autonomy in learning (Adinda & Najoua,2020). A new model of blended learning physics teaching environment is proposed (Norberg et al., 2011).

Blended learning has no fixed model and structure. Its design will be different because of the institutional specifics, subject characteristics, and student needs (Cobo-Rendón et al.,2022). Blended learning is not just a framework for the teaching process or instructional design; it aims to effectively use models to enhance teaching effects (Allan et al.,2019). The Self-Blend Model (Staker & Horn,2012) focuses on expanding materials taught in the classroom using online resources. Students also participate in the traditional school environment and choose to supplement their studies through online courses offered remotely. Teachers can easily maintain students' learning enthusiasm and continuous learning through various online and offline ways, which is the most suitable way to cultivate independent learning skills (Ju,2005; Dina & Pascal,2018; Khairul et al.,2021). Online courses (MOOCs) are a novel blended learning model (Feitosa et al.,2021; Anh & Nguyen, 2022). Blended learning can improve the collaboration ability of college students (Veridian,2018). The potential to achieve blended learning in higher education is great (Torrisi-Steele,2013). Digital technology

and blended learning provide opportunities for new and unique models of learning and teaching (Truss & Anderson,2022). While blended learning is increasingly widespread, practice and quality of teaching are uneven and require high quality blended learning models (Feng,2023).

In summary, Blended learning is feasible and beneficial in the following aspects: on the one hand, in blended learning, teachers will form a powerful whole to mobilize students' enthusiasm and initiative to meet their personalized learning needs. This includes learning resources, learning tools, learning communities, and learning methods to improve their self-directed learning ability. On the other hand, students choose diversified learning resources and seek their own personalized learning methods. In other words, blended learning is to activate students' self-directed learning, change passivity into initiative, take students as the main body, and encourage students to acquire knowledge happily. This is the original intention and the goal of this study.

5.2 Related research on self-directed learning

About the tool to measure self-directed learning ability: Self-directed learning preparation scale is a useful tool to help assess whether students are ready for self-directed learning (Kumar et al.,2021). The scale consists of 40 items that are divided into three dimensions: self-management, self-control, and desire to learn (Justus et al.,2022). The continuous learning checklist is a 24-item Likert scale with higher scale scores indicating strong self-directed continuous learner characteristics (Oddi,2022).

On the mode of self-directed learning: The stage self-directed learning model has four different learning stages and corresponding teaching styles, which are dependent, interested, participatory and self-oriented (Grow,1991). The Personal Responsibility-Oriented Learning model includes five main concepts: personal responsibility, self-directed learning, learner self-orientation, self-orientation in learning, and social context (Holt & Brockett,2012). Emphasizing personal responsibility is a key element in guiding work (Brockett & Hiemstra,2018). The Personnel, process, and context models begin with taking individual responsibility as a starting point to lead to

self-orientation in learning through the characteristics of teaching-learning transactions and the characteristics of learners (Brockett & Hiemstra,1991).

Research on cultivating college students' autonomous learning ability: how to use a blended learning environment to promote self-directed learning (Donnavan et al.,2022). Cultivating students' self-directed learning ability is an important goal of undergraduate curriculum reform, and the basic element of innovative talent development (Chen et al.,2022). Good self-directed learning ability is the objective requirement for college students to realize their own development, understand and internalize new knowledge and effectively apply it into practice (Oates,2019).The Ministry of Education of China clearly points out that in the teaching process, students 'innovative thinking and critical thinking ability should be cultivated to improve students' self-directed learning ability (Butson et al., 2020).

In conclusion, the research on self-directed learning ability has focused on several aspects of measurement, models, and methods, including self-management ability, self-adjustment learning ability and self-control ability. Self-directed learning ability has self-discipline and realizes self-sublimation by stimulating the initiative of supervisors.

5.3 Related research on POA theory

Production-Oriented Approach (POA) believes that writing is a kind of output ability that plays a vital role in students' English level (Zhang& Li,2022). POA has a positive effect on stimulating students 'learning motivation and enhancing students' communicative ability (Sun,2022). POA is considered a task-based or project-centered learning approach (Sun & Asmawi, 2022).

The Teacher-Student Collaborative Assessment (TSCA) aims to address POA's low efficiency and poor effectiveness of students' homework (Sun,2020). The Incentive stage is the most creative stage in the POA (Sun & Asmawi,2022). Teacher-Student Collaborative Assessment organically combines teacher evaluation, students' self-evaluation, peer mutual evaluation and machine evaluation (Sun,2020). The basic textbook of Malay major focuses on the design of POA driving link and modifies texts in

the original textbook (Wen,2020b).The POA model can effectively strengthen the L2MSS of the participants (Li et al,2021).

In summary, POA theory begins with output and ends at output. The teaching concept of POA is the guiding ideology, which determines the direction and overall goal of classroom teaching. The core of POA teaching concept is that: teachers are the designers and guides of classroom teaching, responsible for stimulating students 'learning enthusiasm and enhancing students' self-directed learning desire by creating hunger for knowledge. Students are the main body of learning activities and actively participate in the teaching process. In recent years, research on POA has focused on comprehensive evaluation, research guidance, suggestions, practical application, and impact. Based on this, this study aims to establish a POA and blended learning innovation model by integrating the POA teaching concept to improve the self-directed learning ability of college students.

CHAPTER 3
METHODOLOGY

Research Design

This research has three objectives, so the researcher designs the research study into three phases.

This research uses the research and development method. The research topic is “The Development of a Blended Learning Model by Using a Production-Oriented Approach to Improve the Self-Directed Learning Ability for Faculty of Chinese Language and Literature Undergraduate Students in China". The objectives of this study are:

1.To study the conditions and requirements of a blended learning model by using a Production-Oriented Approach to improve self-directed ability.

2.To develop a blended learning model by using Production-Oriented Approach to improve the self-directed learning ability.

3.To study the effectiveness of a blended learning model by using Production-Oriented Approach to improve self-directed learning ability.

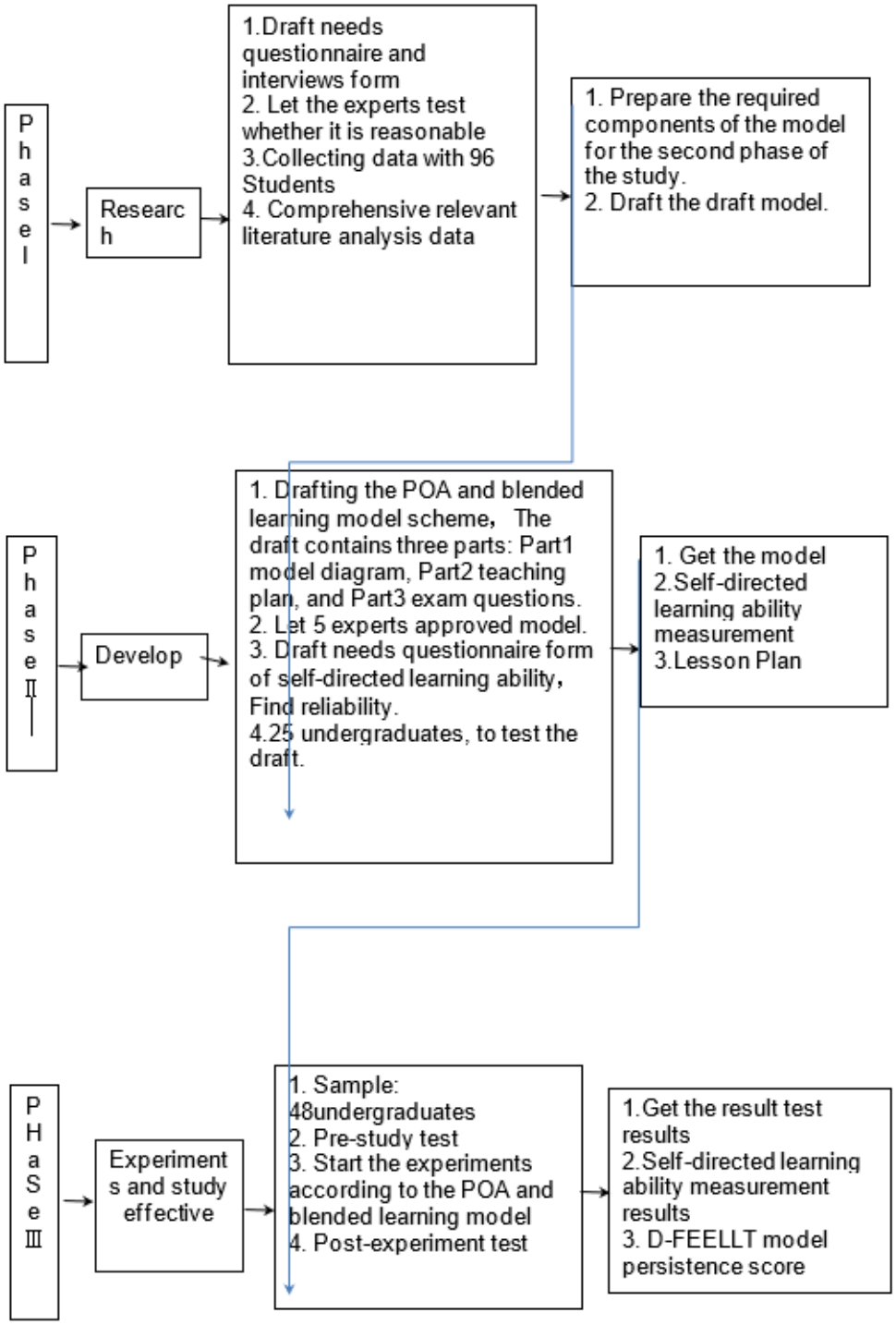
According to the study objectives, it is divided into three stages:

Phase I (R1): To study the conditions and requirements of a blended learning model.

Phase II (D1): To develop a blended learning model by using Production-Oriented Approach to improve the self-directed learning ability.

Phase Ⅲ (R2\D2): To study the effectiveness of a blended learning model by using the Production-Oriented Approach to improve the self-directed learning ability.

The specific process is as follows:



Figures 7 The process of research methodology

Phase I (R1): To study the conditions and requirements of a blended learning model.

Research Purpose: Based on POA and blended learning, the aim is to improve college students' self-directed learning ability. This phase will provide information on the principles, elements, processes, methods, and organization of teaching activities. The goal is to help facilitate, support, measure, and evaluate the development of the POA and blended learning research framework and data frameworks.

1.Participants of the Study

Population

The research population was 96 students in 2nd year; there were two classes of 48 students in each class, majoring in secretary science of Xinzhou Teachers University.

Content experts group: The content experts group comprised 3 Chinese language and literature experts and 2 educational Technology experts. These individuals were selected to obtain information through interviews and group discussions to guide the development of the support system, track, evaluate and verify the quality of education. The specific selection requirements are provided as follows:

Possessed more than 5 years of teaching; Engaged in Chinese language and literature and educational technology professional research.

2.Research Instruments

Instrument 1 Needs Questionnaire about the learning status of college students.

Instrument 2 Interview form for content experts.

Construction and quality approval of the research tools

Instrument 1 Needs Questionnaire about the learning status of college students

The questionnaire was developed through research, analysis, and synthesis of relevant literature and research results. It was designed to investigate the learning status and needs of college students, providing research support for the study. The specific steps are described as follows:

1) Drafting the questionnaire of "Needs Questionnaire about the learning status of college students" and obtaining approval from the advisor.

The scoring criteria using Harold Jan Terano (2015), is as follows:

Scale	Range-Value	Verbal Interpretation
5	4.50-5.00	Always
4	3.50-4.49	Often
3	2.50-3.49	Sometimes
2	1.50-2.49	Rarely
1	1.00-1.49	Never

2) Sending Needs Questionnaire about the learning status of college students to IOC experts to ensure the consistency of the data. The three experts include content experts, measurement experts, and technology experts. The inspection level is divided as follows:

+ 1: Ensure that the evaluation project achieves its objectives.

0: It is not sure whether the evaluation project has achieved its purpose.

-1: Indicates that the evaluation item is inconsistent with the purpose.

3) Modification by suggestion from experts.

4) The Project Objective Consistency Index (IOC) was used for the evaluation, and the Project Objective consistency (IOC) value was between 0.67 and 1.00. Therefore, all the assessment items are valid.

Instrument 2 Interview form for content experts

1) Study documents and analyze from the theory, concept conclusion from documents and related research.

2) Drafting the interview form and sending it to the advisor approved and modified.

3) Sending Interview forms to IOC experts to ensure the consistency of the data, The three experts include, content experts, measurement experts, and technology experts. the inspection level is divided as follows:

+ 1: Ensure that the evaluation project achieves its objectives.

0: It is not sure whether the evaluation project has achieved its purpose;

-1: indicates that the evaluation item is inconsistent with the purpose.

1) Modify by suggestion from experts.

2) The Project Objective Consistency Index (IOC) was used for the evaluation, resulting in an IOC value between 0.67 and 1.00. Therefore, all of the assessment items are valid.

3.Data collection

3.1 The needs questionnaires were administered to survey 96 students and collect data.

3.2 The interview forms were utilized to interview the 5 experts, including 3 content experts and 2 technology experts and collect data.

4.Data Analysis

4.1 Analyze the needs questionnaires using PNI. The formula calculation based on the method by Nonglak Wiratchai and Suwimon Vongvanit (2007), the algorithm is as follows:

$$PNI_{modified} = \frac{I-D}{D}$$

I = Score of needs self-directed learning ability

D = Score of actual self-directed learning ability

4.2 Analyze the interview forms to find key concepts related to POA and blended learning, which will inform the design of the lesson plan.

Phase II(D1): To develop a blended learning model by using Production-Oriented Approach to improve self-directed learning ability.

Data obtained in phase 1 were used to determine the details of the POA and blended learning model, and to develop the POA and blended learning model.

1. Participants of the Study

Samples:

1) 5 model experts, including 3 content experts and 2 educational experts, evaluated the effectiveness and feasibility of POA and blended learning model through discussion. The specific selection requirements are provided as follows:

Had more than 5 years' experience in teaching; Engaged in professional research in Chinese language and literature and educational technology.

2) 3 content experts

2. Research Instruments

Instrument 3 Draft version of the POA and blended learning model

Instrument 4 Lesson Plan

Instrument 5 Archives Test

Instrument 6 "Self-directed learning ability" questionnaire form

Construction and quality approval of the research tools

Instrument 3: Draft version of the POA and blended learning model

Combined with the analysis and research of relevant materials, the POA and blended learning model was created, using learning communication as the teaching medium to improve the self-directed learning ability of college students. The specific steps are described as follows:

1)Comprehensive collection and analysis of relevant literature and data, mainly including:

-Concepts, roles, models, and teaching methods of blended learning

-The POA concept, role, effects, and evaluation

-The concept and function of self-directed learning

-The function of XUE XI TONG

2) Researchers reviewed, analyzed, and summarized the information obtained from the collected literature and results. They integrated and edited the teaching design framework of POA and blended learning according to the course content of archives. Mainly include and used the result of phase I included on the POA and blended learning model:

Part1: POA and blended learning model chart

Part2: POA and blended learning model evaluation

Integrate the above content to create the draft implementation steps of POA and blended learning model. There were 2 parts, part1 was the graphic model and part 2 was the details of the model by using a 5-point Likert scale table To ensure the consistency of the data, the criteria using Harold Jan Terano (2015) by these scores:

Scale	Range-Value	Verbal Interpretation
5	4.50-5.00	Always
4	3.50-4.49	Often
3	2.50-3.49	Sometimes
2	1.50-2.49	Rarely
1	1.00-1.49	Never

3) Propose the draft to the advisor to get approval.

4) Bring the draft "Draft version of the POA and blended learning model" questionnaire form to 3 IOC experts. The inspection grade is divided as follows:

+ 1: Ensure that the evaluation project achieves its objectives.

0: It is not sure whether the evaluation project has achieved its purpose.

-1: Indicates that the evaluation item is inconsistent with the purpose.

6) Modify according to the recommendations from experts.

7) The Project Objective Consistency Index (IOC) was used for the evaluation, and the Project Objective consistency (IOC) value was between 0.67 and 1.00. Therefore, all of the assessment items are valid.

Instrument 4 Lesson plan

Draft the teaching plan and formulate the specific steps of the teaching experiment. The specific steps are described as follows:

1) The draft teaching plan includes time, training purpose, training content, training activities, learning media and tools, measurement, and evaluation, including six parts.

Part1: The time is 6 weeks, 2 hours per week, 1 hour 45 minutes.

Part2: The training purpose is conducted in three parts:

-Drive (preparation and preview before class)

-Facilitate (internalization of knowledge in class)

-Evaluate (review and evaluation after class)

Part3: Official document appellation, official document characteristics, document handling, document disposal, document sorting and filing.

Part 4: Develop training activities according to the training purpose.

Part 5: Learning media and tools will be selected based on the training activities.

Part 6: Measurement and evaluation should be scored according to the achievement of the training purpose.

Draft the examination question using the lesson plan.

4) Bring Lesson plan and examination to advisors for approval.

4) Modify according to the recommendations from advisors.

5) The Project Objective Consistency Index (IOC) was used for the evaluation, and the Project Objective consistency (IOC) value was between 0.67 and 1.00. Therefore, all of the assessment items are valid.

6) Control group: the conventional teaching method is still adopted.

Instrument 5: Archives Test

Drafting Archives Test to test the independent learning status of college students. The specific steps are described as follows:

1) Research, analyze and compile literature and materials related to independent learning.

2) Graft Archives Test, the questions are listed according to the course content in two dimensions of "knowledge" and "understanding". The questions are divided into five types: filling in the blank, multiple-choice questions, noun explanation, short answer, and case analysis questions.

3) Submit the Archives Test to consultants for approval.

4) Send Archives test to 3 IOC experts for review. To ensure the consistency of the data, the inspection level is divided as follows:

+ 1: Ensure that the evaluation project meets its objectives.

0: It is not clear whether the evaluation project has achieved its purpose.

-1: Indicates that the evaluation item is inconsistent with the purpose.

5) Revised according to expert recommendations.

6) The Project Objective Consistency Index (IOC) was used for the evaluation, and the Project Objective consistency (IOC) value was between 0.67 and 1.00. Therefore, all the assessment items are valid.

Instrument 6 "Self-directed learning ability" questionnaire form

Draft "Self-directed learning ability" questionnaire form to investigate the current situation of students' self-directed learning ability. The specific steps are described as follows:

1) Research, analyze and synthesize relevant literature and materials related to self-directed learning, to guide the structure and questions of the paper.

2) According to the questions raised in the literature, propose relevant questions of the self-directed learning questionnaire survey.

3) Draft the "self-directed learning ability" needs questionnaire form.

4) Send the "self-directed learning ability" questionnaire form to 3 IOC experts. To ensure the consistency of the data, the inspection level is divided as follows:

+ 1: Ensure that the evaluation project achieves its objectives.

0: It is not sure whether the evaluation project has achieved its purpose.

-1: Indicates that the evaluation item is inconsistent with the purpose.

5) Modify based on suggestions from experts.

6) Test validity of the "self-directed learning ability" questionnaire on 25 students.

7)Modify the "self-directed learning ability" questionnaire.

8) The Project Objective Consistency Index (IOC) was used for the evaluation, and the Project Objective consistency (IOC) value was between 0.67 and 1.00. Therefore, all the assessment items are valid.

3. Data collection

3.1 Present the POA and blended learning model to 5 experts for data collection .

3.2 Provide the lesson plan to 3 content experts.

3.3 Submit archives test to 3 content experts.

4. Data Analysis

4.1 Analyze the model using the mean and S.D method.

4.2 Analyze lesson plan by using conceptual analysis and summary.

4.3 Analyze the self-directed learning needs questionnaire by using Reliability Coefficient.

Phase Ⅲ (R2): To study the effectiveness of a blended learning model by using Production-Oriented Approach to improve self-directed learning ability.

This phase aims to test the efficacy of the developed system and verify that it achieves the expected results. It involves tracking, evaluating, and conducting quality test certification of the POA and blended learning model, and experimenting with it among students. The experimental subjects were 48 second-year students majoring in secretarial science in the Chinese language and literature of Xinzhou Teachers University. Standard certification and evaluation information is used to assess the effectiveness of the support system.

1.Participants of the Study

Populations

The study subjects are Secretarial majors in the faculty of Chinese Language and Literature of Xinzhou Teachers University. The population consists of 96 second-year students who have blended learning experience, are familiar with the blended learning environment of online and offline integration, and are quite skilled in the use of XUE XI TONG.

Samples

From this population, a cluster random sampling method was employed to select 48 second-year students majoring in Secretarial Studies at Xinzhou Teachers University as the experimental group.

2. Research Instruments

2.1 POA and blended learning model

2.2 Lesson Plan

2.3 Archives Test

2.4 Self-directed learning ability questionnaire

3. Data collection

During the implementation of the experimental POA and blended learning model, the self-directed learning ability of college students is assessed. This assessment will involve conducting an ability test before class and after class, using a lesson plan provided by the researcher . The experiment process is divided into three stages: the preparation work before the class, in-class learning stage and model learning evaluation. The following describes each phase of the study process:

Stage 1: Preparation work before class (Online + offline)

1) Prepare the POA and blended learning model lesson Plan to determine and verify the test samples with the following characteristics:

48 students in the 2nd year majoring in Secretarial Science of the faculty of Chinese Language and Literature at Xinzhou Teachers University were selected as the experimental group.

Colleges used for experiments must have hardware, software, and technical infrastructure to stabilize the network.

Utilize XUE XI TONG to offer online and offline learning courses,xpert seminars and teaching activities.

2) Guide students to learn and clarify the experimental learning steps and operation methods of the POA and blended learning model.

3) Assess students' behavior and ability to use information technology to understand IT use behavior and the usability port tool for learning support. Learners can assess which parts they should present or recommend to learners.

4) Let the students measure their own self-directed learning ability before learning.

5) using a self-directed learning questionnaire for a pre-test.

The second stage: Learning stage in the class

1) Group practical training is conducted according to students' preferences.

2) Before starting the class activities, the teacher should review or test every time.

3) According to the teaching training plan, students complete the design scheme, organize the situational drill, familiarize themselves with and master the knowledge points of the textbook.

4) Teachers collect data by evaluating the work of given activities during the experiment. Self-directed learning ability assessment using situational training.

Stage 3: Model learning evaluation

1) Students use the comprehensive quality interview evaluation scale to assess their self-directed learning ability. After completion of the 6-week experimental schedule, the evaluation effect will be evaluated.

2) Students' learning satisfaction was assessed based on the POA and blended learning model.

3) The test questions are used to evaluate the student's grades.

4) The self-learning ability questionnaire was used to assess students' satisfaction with self-directed learning ability.

4. Data Analysis

Analyze the self-directed learning test by using the mean and standard deviation (S.D) method.

Phase Ⅲ (D2): To study the effectiveness of a blended learning model by using Production-Oriented Approach to improve self-directed learning ability.

The purpose of this stage is to explore professionals' views on improving self-directed learning ability based on the POA and blended learning model and promote the enhancement of self-directed learning ability. Based on the previous 3 phases, the results of the experiment were modified and improved to ensure the integrity of the system.

1.Participants of the Study

The five experts include: 3 content experts and 2 technology experts. The specific selection requirements are as follows:

-Had more than 5 years of teaching experience.

-Engaged in Chinese language and literature and educational technology professional research.

2.Research Instruments

Instrument 7 Confirmation model form

Construction and quality approval of the research tools

1) Draft the Confirmation model form.

To ensure the consistency of the data, the criteria established by Harold Jan Terano (2015) will be used with the following scores:

Scale	Range-Value	Verbal Interpretation
5	4.50-5.00	Always
4	3.50-4.49	Often
3	2.50-3.49	Sometimes
2	1.50-2.49	Rarely
1	1.00-1.49	Never

2) Propose the draft to the advisor for approval.

3) Present the draft of the Confirmation model form to 3 IOC experts, the inspection level is divided as follows:

+ 1: Ensure that the evaluation project achieves its objectives.

0: It is not sure whether the evaluation project has achieved its purpose.

-1: Indicates that the evaluation item is inconsistent with the purpose.

4) Modify based on suggestions from experts.

3. Data collection

Present the confirmation model form to 5 experts.

4. Data Analysis

Analyze using statistical methods, mean, and standard definition (S.D.)

CHAPTER 4
FINDINGS

The topic of this article is “The Development of a Blended Learning Model by Using a Production-Oriented Approach to Improve the Self-Directed Learning Ability for faculty of Chinese Language and Literature Undergraduate Students in China.” This study has the following specific objectives:

1.To study the conditions and requirements of a blended learning model by using a Production-Oriented Approach to improve self-directed ability.

2.To develop a blended learning model using the Production-Oriented Approach to improve self-directed learning ability.

3.To study the effectiveness of a blended learning model by using Production-Oriented Approach to improve the self-directed learning ability.

This chapter presents the results of data analysis for the development of production guidance method, organized in three stages:

Phase I (R1): To study the conditions and requirements of a blended learning model.

Phase II(D1): To develop a blended learning model using the Production-Oriented Approach to improve the self-directed learning ability.

Phase Ⅲ(R2\D2): To study the effectiveness of a blended learning model by using Production-Oriented Approach to improve the self-directed learning ability.

Phase I (R1): To study the conditions and requirements of a blended learning model

Results of Needs Questionnaire about the learning status of college students

Table 5 Results of the self-directed learning ability of college students (n = 48)

Self-directed learning ability	Actual		Meaning	Needs		Meaning	PNI	Rank of PNI
	$\overline{X}$	S. D		$\overline{X}$	S. D			
Self-adjustment ability	2.61	0.67	Sometimes	4.20	0.80	Often	0.6092	2
Self-management ability	2.40	0.87	Rarely	4.48	0.98	Often	0.8667	1
Self-control ability	2.53	0.62	Sometimes	3.80	0.76	Often	0.5020	3
Overall average	2.51	0.72	Sometimes	4.16	0.85	Often	0.6552	

In Table 5, the overall average needs score (mean = 4.16, S.D = 0.85), with regard to self-directed learning ability, was higher than the actual score (mean = 2.51, S.D = 0.72). Priority Needs Index (PNI) ranking displayed, self-management ability (PNI = 0.8667) was ranked first, self-adjustment ability (PNI = 0.6092) was ranked second, and self-control ability (PNI = 0.5020) was ranked third.

Table 6 Results of self-adjustment ability (n = 48)

Self-adjustment ability	Actual		Meaning	Needs		Meaning	PNI	Rank of PNI
	$\overline{X}$	S.D		$\overline{X}$	S.D			
Through classroom teaching, I can learn a complete and systematic knowledge.	2.35	1.02	Rarely	4.55	1.19	Always	0.9362	1
Through online learning, I can learn a complete and systematic knowledge.	2.40	0.98	Rarely	4.31	1.13	Often	0.7958	3
Through blended learning, you can improve your learning motivation.	2.48	1.17	Rarely	4.01	1.42	Often	0.6169	5
Through blended learning, I can make a reasonable study plan.	2.42	1.09	Rarely	4.20	1.29	Often	0.7355	4
Through blended learning, I think that learning is much easier.	2.46	1.07	Rarely	4.50	1.18	Always	0.8293	2
I often feel that the learning process is hard work.	2.56	1.01	Sometimes	3.87	1.19	Often	0.5117	6
Overall average	2.45	1.06	Rarely	4.24	1.23	Often	0.7342	

In Table 6, the overall average needs score (mean = 4.24, S.D. = 1.23) was higher than the actual score (mean = 2.45, S.D. = 1.06). Regarding the PNI ranking displayed, “Through classroom teaching, I can learn a complete and systematic knowledge.” (PNI = 0.9362) was ranked first; “Through blended learning, I think that

learning is much easier."(PNI = 0.8293) was ranked second; and "Through online learning, I can learn a complete and systematic knowledge."(PNI = 0.7958) was ranked third.

Table 7 Results of self-management ability (n = 48)

Self-management ability	Actual		Meaning	Needs		Meaning	PNI	Rank of PNI
	$\overline{X}$	S.D		$\overline{X}$	S.D			
In group collaboration, I can work very well with others.	2.29	1.05	Rarely	3.73	1.33	Often	0.6288	6
I can actively participate in the activities according to the learning activities arranged by the teacher, such as teamwork, achievement display, practice, etc.	2.50	1.03	Sometimes	4.25	1.18	Often	0.7000	4
I am willing to learn certain courses through the Internet.	2.38	1.08	Rarely	3.92	1.28	Often	0.6471	5
I am willing to take the study task to study online.	2.40	1.13	Rarely	4.31	1.26	Often	0.7958	3
I can learn according to the learning materials provided by the teacher.	2.42	1.09	Rarely	4.35	1.19	Often	0.7975	2
I can determine my own learning goals and learning activities.	2.44	1.03	Rarely	4.42	1.07	Often	0.8115	1
Overall average	2.41	1.07	Rarely	4.16	1.22	Often	0.7311	

In Table 7, it can be seen that the overall average needs score (mean = 4.16, S.D. = 1.22) was higher than the actual score (mean = 2.41, S.D. = 1.07). Regarding the PNI ranking displayed, “I can determine my own learning goals and learning activities.” (PNI = 0.8115) was ranked first; “I can learn according to the learning materials provided by the teacher.” (PNI = 0.7975) was ranked second; and “I am willing to take the study task to study online.” (PNI = 0.7958) was ranked third.

Table 8 Results of self-control ability (n = 48)

Self-control ability	Actual		Meaning	Needs		Meaning	PNI	Rank of PNI
	$\overline{X}$	S.D		$\overline{X}$	S.D			
I can restrain my learning behavior.	2.33	1.08	Rarely	3.79	1.30	Often	0.6266	4
I can study according to my own study plan.	2.23	1.04	Rarely	4.10	1.23	Often	0.8386	2
I can resist all kinds of temptations and concentrate on my studies.	2.21	0.90	Rarely	4.40	1.08	Often	0.9910	1
I can get rid of my bad study habits.	2.29	0.97	Rarely	3.87	1.17	Often	0.6900	3
I do not study according to the teacher's arrangement, and study according to my own plan.	2.56	1.03	Sometimes	3.62	1.33	Often	0.4141	5
Overall average	2.32	1.004	Rarely	3.96	1.222	Often	0.7069	

In Table 8, the overall average needs score (mean = 3.96, S.D. = 1.222) was higher than the actual score (mean = 2.32, S.D. = 1.004). Regarding the PNI ranking displayed, “I can resist all kinds of temptations and concentrate on my studies.” (PNI = 0.9910) was ranked first; “I can study according to my own study plan.” (PNI = 0.8386) was ranked second; and “I can get rid of my bad study habits.” (PNI = 0.6900) was ranked third.

The results of the interview form from five content experts about the POA and a blended learning model were divided into 4 categories, as follows:

1. Learning platform

It mainly adopts the combination of online and offline, online platforms are mainly for learning, and offline for classroom.

2. Teachers and students

Students are leaders and collaborators, while teachers are responsible for the adoption of learning methods, monitoring learning progress, developing teaching plans, utilizing teaching resources, participating in teaching links, problem solving, answering questions, evaluating teaching effectiveness, and reflecting on teaching practices. Meanwhile, students are the main participants in completing ability assessment, evaluating learning models, assessing learning outcomes, and completing the tasks assigned by the teacher, and giving feedback to the learning model.

2.1 The POA process

(1) The main objective of the "drive" phase is to make students realize the gaps between their current level and their target through real communication activities. This phase aims to increase students' new knowledge and promote the development of their thinking ability, to inspire their enthusiasm for active knowledge.

(2) In the "facilitation" stage, teachers should provide content closely related to the learning materials, so as to encourage students to apply their receptive knowledge into output knowledge, providing support for them to efficiently complete the output tasks.

(3) The "evaluation" phase emphasizes the combination of immediate and delayed evaluation. With the guidance of professional teachers, this phase focuses

on highlighting the key points of evaluation, so that the evaluation becomes a feasible means to review, consolidate and strengthen the new knowledge, thereby improving teaching efficiency and learning outcomes. Students are categorized to determine their level based on their performance: excellent (90-100 points), good (80-90 points), general (70-80 points), fail (60 points below).

2.2 Teaching Plan

The teaching plan entails determining the teaching time, objectives, content, tools, and the steps of the homework. Additionally, it is also necessary to determine the students' learning objectives, understanding of classroom knowledge and concepts, online learning resources, practice and application opportunities, evaluating the learning outcomes , and providing timely feedback after evaluation 2.3 What's involved in the model

The model design includes three main aspects: drive, facilitation, and evaluation. Each aspect is specifically subdivided into the student's and teacher's perspective.

In the drive phase: From the students 'perspective includes independent learning, test completion, and preparing to report.

From the teachers' perspective: assigning self-learning tasks, providing preview materials, managing teaching progress and organizing arrangements.

In the facilitation phase From the students' perspectives : engaging in group activities, stimulating thinking and communication skills, and internalizing knowledge. From the teachers' perspectives : delivering intensive lectures for preview, answering students' questions , and facilitating discussions on key and difficult points.

In the evaluation phase : From the students' perspective : completing exercises, taking tests, participating in discussions, and reviewing materials. From the teacher's perspective : conducting after-class practice, administering tests , facilitating discussions, summarizing and reviewing .

3. Learning environment and resources

The learning environment and resources mainly need both hardware and software aspects:

The blended learning model requires students to engage in both online and offline learning experiences in different learning environments for example:

(1) Computer or tablet : Students need to have a computer or tablet computer to access online learning platforms and resources. These devices need to have sufficient processing power and storage space to support playback of multimedia content and downloading of courses.

(2) Internet connection: Students need a stable Internet connection so that they can smoothly access online learning platforms and participate in interactive learning activities such as online discussions and video conferences .

(3) Audio and visual devices: Students need to have reliable audio devices (such as headphones or speakers) and video devices (such as cameras) to support listening, speaking and interactive participation in the online classroom.

Blended learning models rely on a variety of educational technology software and platforms:

(1) Online learning platform: Schools or institutions need to provide a reliable online learning platform that can host course content, learning resources, online assignments, tests and other functions. The platform should be easy to navigate and use, and provide monitoring and evaluation of student progress and performance, such as Learning Pass.

(2) Collaborative tools: The blended learning model encourages cooperation and interaction among students and between students and teachers. Therefore, schools need to provide appropriate collaborative tools, such as online discussion forums and team project management tools, so that students can conduct effective academic and social communication.

(3) Multimedia resources and interactive content: Blended learning models usually support students' learning through multimedia resources (such as video,

audio, and images) and interactive content (such as simulation experiments and virtual reality). Therefore, educational technology software should have the features to provide and support these multimedia and interactive resources.

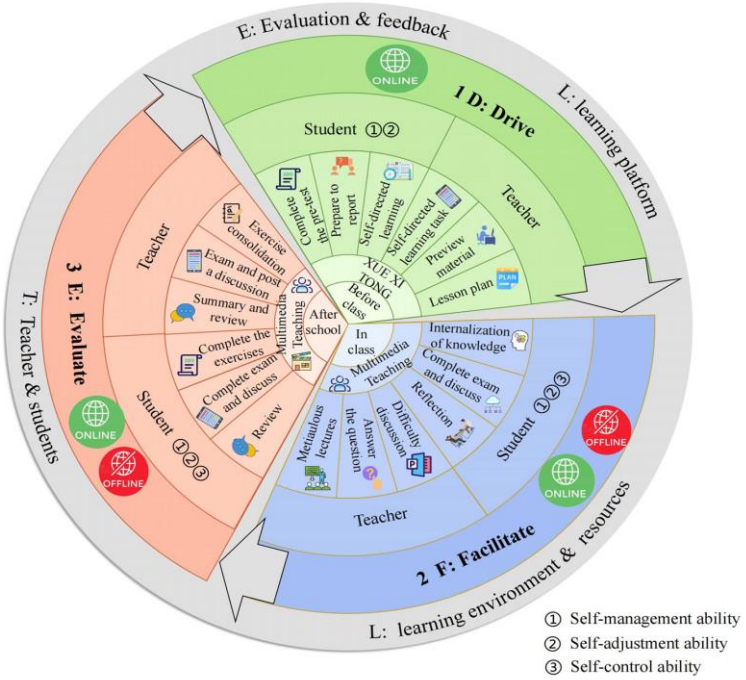
4. Assessment and feedback

This involves providing pre-test and post-test evaluation of students' independent learning ability, designing examination questions for evaluation, and evaluating the effectiveness of the learning model. At the same time, it also includes teachers writing research reports for feedback, maintaining good learning logs or reflection records for feedback.

Phase II(D1): The results of a blended learning model using Production-Oriented Approach to improve self-directed learning ability.

From the results of the first phase, the development results are as follows:

1) A POA and blended learning model was formed.



Figures 8 D-FEELLT model

2)The results of the D-FEELLT model found there were three processes:1) drive, 2) facilitate, and 3) evaluate.

3) Drive (preparation and preview before class): Significant preparation occurs at the front line of classrooms, both teachers and students have to complete the respective tasks before class.

Teacher: Utilizing the XUE XITONG platform before class, teachers can easily release the learning tasks, teaching materials and course schedules. Students can view and complete the tasks anytime and anywhere. This online learning method is not limited by time and place, allowing students to arrange their learning progress more independently. Additionally , the online or offline communication mode makes communication between teachers and students more convenient and efficient. Teachers can answer students' questions and solve problems in time through the online query and other features of XUE XITONG platform. Students can also ask the teachers' questions for help and advice at any time. This interaction can not only help students to better understand the course content, but also enhance students' learning motivation and interest.

Students: After receiving the learning task, they should fully understand the task requirements, and make use of various learning resources and tools to actively learn and preview independently. For example, they can gain a preliminary understanding of the upcoming content by reading textbooks, finding online information, and participating in online discussions.

In the preview process, students need to identify the key points and difficult points, record their own questions and areas of confusion, so as to be more focused in class. Additionally students can also communicate and discuss with teachers and students through the online platform, share their preview results and experience, and further deepen their understanding and grasp of the learning content.

The pre-class driving mode not only helps to improve students' self-directed learning ability and preview effectiveness, but also promotes communication and interaction between teachers and students, laying a solid foundation for learning in

class. At the same time, through the application of online platforms, it can also better adapt to the educational needs of the current digital age, and improve teaching effectiveness and learning experience.

1) Facilitation (internalization of knowledge in class): Several rounds of small-scale activities are conducted in class, to promote the internalization of students' knowledge.

Teacher: Explains the questions raised before class in detail, through vivid cases and metaphors to deepen students' understanding of relevant concepts. At the same time, teachers also use a variety of teaching methods, such as group discussions, classroom demonstrations, etc., to stimulate students' interest and enthusiasm for learning.

Student: Students listen carefully and put forward their own opinions and questions. Through group discussions and class demonstrations, students demonstrate their learning outcomes and thinking ability. In the group discussion, students actively express their views and express their ideas clearly.

2) Evaluate (after-class review and evaluation): Teachers and students reflect on and consolidate after class, evaluating the effectiveness of each class.

Teacher: Reflect on their performance in class according to students' performance and feedback. Think about whether they effectively conveyed key concepts, explained complex concepts clearly enough, and paid enough attention to the students' needs and problems. Additionally , evaluate the teaching effectiveness of each class based on students' assignments and test results, so as to adjust and improve their teaching methods and strategies.

Student: Review the learning content and performance in class, think about whether they understood the knowledge points explained by the teacher, mastered the necessary skills, and actively participated in the class discussions and activities. According to the homework and tests assigned by the teacher, students assess their own learning outcomes , identify their own shortcomings and areas for improvement.

The XUE XI TONG platform will record the reflection and consolidation process of teachers and students throughout the whole process. It will then provide personalized suggestions and guidance for teachers and students based on their data analysis and learning algorithms, so as to help them better improve teaching and learning effectiveness .

D-FEELLT model had four components:

1) Evaluation and feedback

2) Learning platform

3) Learning environment and resources

4) Teacher and students

These four components interact together to build a comprehensive and effective learning ecosystem.

Firstly, the XUE XI TONG platform is the core of this ecosystem, providing ease of use, stability and scalability. It provides students and teachers with the basic tools and environment for online learning. This platform can be either an online learning management system or an integrated platform that integrates various learning tools.

Teachers and students are the subjects of this ecosystem. Teachers are the initiators of knowledge. They publish teaching resources, assign homework, organize discussions, and provide feedback through the platform. Students are the recipients of knowledge, who access learning resources, complete assignments, participate in discussions and receive feedback. During this process, the interaction between teachers and students is particularly important, because it promotes the transmission and understanding of knowledge.

The learning environment and resources are important conditions that support learning. The environment includes both online and offline learning environments, such as classrooms, laboratories, libraries, etc. Resources include teaching materials, courseware, videos, cases, and other forms of learning materials. These resources and environments need to be integrated with the learning platform so that students can learn anytime and anywhere.

Finally, assessment and feedback are an important part of this ecosystem. The evaluation can be conducted through homework, tests, exams, etc., in order to understand the students' learning progress . Feedback is the teacher's response and guidance to the students' learning situation, which helps students to correct their mistakes in time and improve their learning outcomes . The timeliness, accuracy, and effectiveness of the assessment and feedback are essential to enhance the quality of learning.

In conclusion, the four components of the POA and blended learning models together constitute a complete learning ecosystem. In this ecosystem, the learning platform is the foundation, teachers and students are the main body, the learning environment and resources are the supporting conditions, and evaluation and feedback are the important links. Only when these components coordinate and work together, can high-quality and efficient online learning be achieved.

1.The POA and blended learning model was confirmed by five model experts.

Table 9 Model experts Examination results of five model experts

Model experts	Mean	S.D	Meaning
Part 1 Model Chart			
Part 2 The appropriate of the model			
The POA and blended learning model components			
1 Learning platform	4.6	0.5	Strongly agree
2 Teachers and students	4.6	0.5	Strongly agree
3 Learning environment and resources	4.8	0.4	Strongly agree
4 Evaluation and feedback	4.4	0.5	Agree

Table 9 (Continue)

		Model experts	Mean	S.D	Meaning
The POA and blended learning model process					
	Process 1: Drive (preparation and preview)				
1	Teacher	Lesson plan Preview materials Self-directed learning task	4.4	0.5	Agree
	Student	Self-directed learning Prepare to report Complete the pre-test	4.8	0.4	Strongly agree
	Process 2: Facilitate (internalization of knowledge in class)				
2	Teacher	Fine speak Ask the questions Difficult discussion	4.2	0.4	Agree
	Student	Internalization Of knowledge Complete exam and discuss Reflection	5	0.0	Strongly agree
	Process 3:Evaluation (review and evaluation after class)				
3	Teacher	Exercise consolidation Exam and post a discussion Summary and review	4.8	0.4	Strongly agree
	Student	Complete the exercises Complete exam and discuss Summary and review	4.8	0.4	Strongly agree
Integrity of the POA blended learning model					
1		The model forms a complete closed-loop design, with complete and rigorous components.	5	0.0	Strongly agree
2		The model process is reasonable and complete, forming a cycle pattern.	4.6	0.5	Strongly agree
3		The model conforms to the course plan and the teaching schedule.	4.8	0.4	Strongly agree
4		The model focuses on guidance and focuses on cultivating students' self-directed learning ability.	4.4	0.5	Agree
		Overall average	**4.7**	**0.357**	**Strongly agree**

According to Table 9, 5 experts on D-FEELLT model Strongly agree (Mean = 4.7, S.D = 0.357. From the results found in the POA and blended learning model components, Learning platform, Teachers and students, Learning environment and resources the experts Strongly agree, while they agree on evaluation and feedback.

In terms of the POA and blended learning model process, the experts ranked "Student: Internalization Of knowledge Complete exam and discuss Reflection" (Mean = 5) as the first rank; The second rank was held by "Evaluation" and "self-directed learning Prepare to report Complete the pre-test" (Mean = 4.8), while he third rank was "Teacher: Lesson plan Preview materials Self-directed learning task" (Mean = 4.4).

From the results found in Integrity of the POA blended learning model, experts strongly agree that "The model forms a complete closed-loop design, with complete and rigorous components." They also strongly agree that "The model process is reasonable and complete, forming a cycle pattern. "was Strongly agree. Additionally, they strongly agree that "The model conforms to the course plan and the teaching schedule." Lastly, they agree that "The model focuses on guidance and focuses on cultivating students' self-directed learning ability."

Phase Ⅲ (R2\D2): To study the effectiveness of a blended learning model using Production-Oriented Approach to improve self-directed learning ability.

Table 10 The post-test results of students (total score = 100 points)

Archives	$\overline{X}$	S. D	Criteria	T-test
Knowledge(K)	71.69	4.06	60	122.357*
Understanding(U)	85.61	6.31	60	93.945*

*p<0.05

Table 10 shows the post-test results of students. The average post-test scores of knowledges (mean = 71.69, S.D. = 4.06) and understanding (mean = 85.61, S.D. = 6.31) were significant at p<0.05.

Results of "Self-directed learning ability" questionnaire form

Table 11 Results of the "self-directed learning ability" questionnaire form (n = 48)

Self-directed ability	Pre-test score		Post-test score		Meaning
	$\overline{X}$	S.D	□X	S.D	
Self-adjustment ability	2.61	0.67	3.94	0.92	Often
Self-management ability	2.40	0.87	3.89	0.80	Often
Self-control ability	2.53	0.62	3.73	0.73	Often
Overall average	2.51	0.72	4.32	0.82	Often

According to Table 11, the overall average of the post-test score (mean = 4.32, S.D. = 0.82) was higher than the pretest score (mean = 2.51, S.D. = 0.72). The overall self-directed learning ability was often.

Table 12 Self-adjustment ability (n = 48)

Self-adjustment ability	$\overline{X}$	S.D	Meaning
I try to learn what I want to learn.	4.51	1.18	Always
When I study, I know what to learn.	4.57	1.09	Always
I firmly believe that I can study hard.	4.42	1.29	Often
I can know if I'm learning well or not.	3.85	1.27	Often
I can get the information I need for myself.	4.44	1.12	Often
I can stick to my study plan.	4.38	1.13	Often
I prefer to determine the criteria to follow in evaluating my own performance.	3.99	1.22	Often
I often actively regulate my own motivation and behavior to participate in learning activities.	4.42	1.17	Often
I can repeat the learning content in order to keep the information.	3.73	1.18	Often
I can integrate the knowledge to form a new knowledge structure, such as an outline.	4.35	1.20	Often
Overall average	4.27	1.185	Often

According to Table 12, the overall average score of self-adjustment ability was often (mean = 4.27, S.D. = 1.185). The top four items of self-adjustment ability, ranked from highest to lowest score, were as follows: The first item was "When I study, I know what to learn." (mean = 4.57, S.D. = 1.09). The joint second item was "I try to learn what I want to learn." (mean = 4.51, S.D. = 1.18). The third item was "I can get the information I need for myself." (mean = 4.44, S.D. = 1.12).

Table 13 Self-management ability (n = 48)

Self-management ability	$\bar{X}$	S.D	Meaning
I can set up a specific study plan.	3.58	1.22	Often
I can motivate myself in my study.	3.72	1.29	Often
I was able to solve those problems that I had already planned for.	3.27	1.22	Often
I will take the initiative to communicate with my classmates and discuss the problems arising in my study.	3.63	1.16	Often
I will arrange my study according to the order of events.	4.31	0.98	Often
I often set periodic learning goals according to my own learning needs.	4.22	1.02	Often
I am a disciplined and organized person.	3.92	1.26	Often
I have a tight schedule for my studies .	4.65	1.01	Always
I like to study alone.	4.58	1.24	Always
I have great confidence in my time management skills.	4.65	1.20	Always
Overall average	4.05	1.16	Often

According to Table 13, the overall average score of self-management ability was often (mean = 4.05, S.D. = 1.16). The top three items of self-management ability, ranked from highest to lowest score, were as follows: The first item was “I have great confidence in my time management skills.” (mean = 4.65, S.D. = 1.20) and “I have a tight schedule for my study.” (mean = 4.65, S.D. = 1.01). The third item was “I have a

tight schedule for my studies" (mean = 4.58, S.D. = 1.24). The third fourth was "I will arrange my study according to the order of events." (mean = 4.31, S.D. = 0.98).

Table 14 Self-control ability (n = 48)

Self-control ability	$\bar{X}$	S.D	Meaning
I can study according to my own study plan.	3.64	1.26	Often
I can complete the teacher's task.	3.78	1.41	Often
I can control my study time.	4.58	1.10	Always
I can handle the time of study and game well.	4.66	1.26	Always
I can develop good study habits.	3.86	0.98	Often
The teacher supervises me, so that I can study hard.	2.15	0.98	Sometimes
My life is always controlled by a punctuate.	2.00	0.71	Sometimes
I prefer to set my own learning goals.	4.48	1.06	Often
Overall average	3.64	1.095	Often

According to Table 14, the overall average score of self-control ability was often (mean = 3.64, S.D. = 1.095). The top three items of self-control ability, ranked from highest to lowest score, were as follows: The first item was "I can handle the time of study and game well" (mean = 4.66, S.D. = 1.26). The second item was "I can control my study time" (mean = 4.58, S.D. = 1.10). The third item was "I prefer to set my own learning goals." (mean = 4.48, S.D. = 1.06).

Table 15 Results of the model confirmation from model experts

Part 1

The over all of the model	$\bar{X}$	S.D	Meaning
The model elements are complete.	4.60	1.03	Strongly agree
Model tools are properly selected.	4.62	1.03	Strongly agree
The model was evaluated reasonably.	4.60	1.00	Strongly agree
The reasonable modification to the model.	4.49	1.00	Agree
The model achieves the expected goal.	4.63	1.00	Strongly agree
Overall average	4.588	1.012	Strongly agree

According to Table 15, the overall average score of the overall model was strongly agree (mean = 4.588, S.D. = 1.012). The top three items of the overall model, ranked from highest to lowest score, were as follows: The first item was “The model achieves the expected goal” (mean = 4.63, S.D. = 1.00). The second item was “Model tools are properly selected” (mean = 4.62, S.D. = 1.03). The joint third items were “The model elements are complete.” (mean = 4.60, S.D. = 1.03) and “The model was evaluated reasonably” (mean = 4.60, S.D. = 1.00).

Table 16 Results of the model confirmation of the components, process, and the learning environment (n = 5)

Part 2

	$\bar{X}$	S.D	Meaning
The components of the model			
Learning auxiliary materials are detailed and proper.	4.74	0.94	Strongly agree
Rich in content and activities.	4.74	0.92	Strongly agree
The evaluation process is reasonable.	4.76	0.91	Strongly agree
Teachers and students interact well.	4.72	0.84	Strongly agree
The learning process is interesting and vivid.	4.78	0.85	Strongly agree
The process of the model			
The draft design is reasonable, and the process is clear and concise.	4.49	0.86	Agree
The assessment meets the expert requirements.	4.49	0.80	Agree
The improvement conforms to the teaching.	4.67	0.80	Strongly agree
Practice and the experimental requirements.	4.65	0.75	Strongly agree
The Learning environment of the model			
Online: learning through, e-learning	4.77	0.85	Strongly agree
Offline: classroom	4.67	0.80	Strongly agree
Overall average	4.68	0.85	Strongly agree

According to Table 16, the overall average score of the components, process and learning environment of the model was strongly agree (mean = 4.68, S.D. = 0.85). The top three items of the components, process and learning environment of the model, ranked from highest to lowest score, were as follows: The first item was "The learning process is interesting and vivid" (mean = 4.78, S.D. = 0.85). The second item was "Online: learning through, e-learning" (mean = 4.77, S.D. = 0.85). The third item was "The evaluation process is reasonable." (mean = 4.76, S.D. = 0.91).

Overall, the results of interviews with students and lecturers showed that using the D-FEELLT model significantly improved students' self-directed learning ability. Improving self-directed learning ability can be an effective way to improve learning efficiency and the attractiveness of the subject.

CHAPTER 5
CONCLUSION AND DISCUSSION

The main objective of this study was to design a blended learning model under the guidance of the POA theory. It aims to improve the subjective initiative of Chinese college students, so that students can conduct selective learning according to their own learning characteristics and needs. This study had the following three specific objectives:

1)To study the conditions and requirements of a blended learning model by using Production-Oriented Approach to improve self-directed ability.

2) To develop a blended learning model by using Production-Oriented Approach to improve self-directed learning ability.

3) To study the effectiveness of a blended learning model by using Production-Oriented Approach to improve the self-directed learning ability.

1. A Brief Summary of the Study

This research was conducted in three phases, summarized as follows:

1.1 Phase I (R1): To study the conditions and requirements of a blended learning model.

The research population consisted of 96 2nd year students divided into two classes of 48 students. The students major in secretary science at Xinzhou Teachers University. The purpose of this stage was to study the basic data and problems of the teaching learning process and use it to design the draft POA and blended learning model.

The conclusion from the Needs questionnaire found that the current self-directed learning ability of the research subjects was exceptionally low, and there was a significant gap between their actual needs and their actual level.

Regarding “Self-adjustment ability", students expressed an expectation of Needs higher than their actual ability. Hence, the students wanted to engage in blended learning to improve their Self-adjustment ability.

Concerning “self-management ability,” the current status was normal and lower than the students’ expectations. This made students aware and willing to participate in activities through the Internet.

Regarding “self-control ability”, the current status was Normal but lower than expectations. The participants had poor self-control ability, could not learn according to their own study plan, and could not overcome bad learning habits.

The conclusion from the interview form revealed that the POA and blended learning model had three processes: 1) drive, 2) facilitate, and 3) evaluate, encompassing four components: 1) evaluation and feedback, 2) learning platform, 3) learning environment and resources, and 4) teacher and students.

1.2 Phase II(D1): To develop a blended learning model using the Production-Oriented Approach to improve self-directed learning ability.

From the result of phase I, the researcher synthesized the principal issues to design the blended learning model. After approval from model experts, the resulting model was identified as the D-FEELLT model, encompassing elements from both the Production-Oriented Approach (POA) and blended learning methodologies.

1.2.1 The D-FEELLT model comprises four components: 1) evaluation and feedback, 2) learning platform, 3) learning environment and resources, and 4) teacher and students.

1) Evaluation and feedback

The teacher effectively evaluated the students' preview, learning activities, learning process, test questions and homework. Furthermore, teachers wrote study reports and kept good reflection records and logs for feedback. The students self-evaluated and reflected on their own learning content.

Overall, effective evaluation and feedback mechanisms were an integral part of the teaching and learning process. They not only enabled the teachers to better understand the students' learning situation and adjust their teaching strategies, but also empowered students to have a better understanding of their own learning status and develop targeted learning plans. At the same time, through writing research

reports, summarizing and providing feedback, teachers could also constantly improve their teaching level and professional quality.

2) Learning Platform

It adopted the combination of online and offline methods, online was mainly XUE XI TONG tasks and learning discussions, Auxiliary platforms also had WeChat and QQ to answer questions. Offline was the classroom, with the help of multimedia and multi-functional classrooms.

Online, XUE XI TONG provided students with rich learning resources and tasks. XUE XI TONG did not only distribute learning tasks and learning discussions, but also track and evaluate the learning situation of learners, so as to help learners better master knowledge and skills. In addition, social media platforms such as WeChat and QQ had also been fully utilized, providing a convenient environment for learners to communicate and answer questions, so that learning was no longer isolated.

Offline, with the help of multimedia and multi-functional classrooms, learners were provided with a more real and in-depth learning experience. Multimedia classrooms displayed rich teaching materials and cases to help learners better understand knowledge while multi-function classrooms accommodated several types of learning activities, such as group discussion and practical operation. This combination of offline and online not only improves learning efficiency, but also cultivates learners' ability of self-directed learning and collaborative learning.

In general, XUE XI TONG provided learners with a comprehensive and multi-round learning experience through the organic combination of online and offline. It not only helps learners to better master knowledge and skills, but also promotes communication and interaction between teachers and students and improves learners' interest and motivation in learning.

3) Learning environment and resources

The learning environment and resources were crucial to learning outcomes. They covered both hardware and software aspects:

In terms of hardware, the learning environment needs to have good physical conditions, such as suitable lighting, quiet place, comfortable seats, etc. In addition, the necessary learning tools are indispensable, such as computers, tablets, laptops, Internet connections, sounds, visual devices, books, and so on. These hardware devices help us to better record, organize, learn, and share knowledge.

In terms of software, learning resources and tools are also crucial. Examples of online learning platforms and collaborative tools include: Dingding, Tencent conference, WeChat, multimedia resources and interactive content, PPT, projector, etc., These platforms allow us to learn anytime and anywhere, without limitation of time and place. Moreover, these software tools assist in better manage and plan learning progress, such as creating learning plans, recording learning notes, analyzing statistical data, etc.

4) Teacher and Students

Teacher: Teachers made detailed course plans and progressions before class, arranged appropriate teaching tools, designed clear teaching activities and student activities, coordinated the overall rhythm of the classroom in class, and adjusted timely according to students' needs as necessary. Additionally, teachers made thorough after-class evaluation and reflection.

For teachers, XUE XI TONG automatically collated teaching resources, generated teaching plans and lesson preparation materials which reduced the work burden of teachers. Moreover, XUE XI TONG analyzed students 'learning data, provided teachers with accurate teaching advice, and helped teachers to better guide students' learning.

Student: Before class, students received and completed learning tasks through the learning platform and communicated with the teachers through it. In the class, students followed the teacher's explanation, grasping and digesting the knowledge. After class, the students completed reviews and evaluations, and summarized the content covered in class.

For students, XUE XI TONG has become a versatile learning assistant. Whether it was homework or exams, XUE XI TONG provided timely and accurate answers, making it easier for students to complete homework and prepare for the exam. In addition, according to students' learning situation, it intelligently recommended relevant learning materials and topics, which helped students consolidate knowledge points and improved learning efficiency.

1.2.2 The result of the D-FEELLT model had three processes: 1) drive, 2) facilitate, and 3) evaluate.

1) Drive (preparation and preview before class): This part was conducted online. The teacher prepared as follows, releasing information through the XUE XI TONG:

First, they designed the teaching schedule and teaching arrangement. The course plan included 6 weeks, with 90 minutes of class hours per week, learning objectives, learning content, learning activities, learning media and tools were formulated every week for measurement and evaluation.

Second, they pushed selected preview materials so students could communicate with teachers online or offline.

Third, self-directed learning tasks were assigned. Students studied independently according to the information released, completed a pre-test, and prepared for class presentations. When students encounter problems in the learning process, they can communicate with teachers online (via WeChat, learning channel) or offline.

2) Facilitate (internalization of knowledge in class): This part was mainly organized through online and offline arrangements. Following the feedback received from the Drive phase, the teacher prepared as follows:

Firstly, for the preview, the teacher conducted an intensive lecture explaining key and difficult problems step by step.

Secondly, the teacher facilitated question and answer sessions, addressing students' areas of confusion, and gradually transitioning to the next stage of learning.

Thirdly, the teacher led discussions on key and challenging topics. Students were organized into groups based on the teacher's instructions, engaged in interactive discussions, and internalized knowledge through explanations and activities.

3) Evaluate (after-class review evaluation): This part was mainly organized through both online and offline methods. The teacher's preparation was as follows:

Firstly, checking attendance and assigning after-class exercises.

Secondly, testing and publishing discussion topics.

Thirdly, summarizing and reviewing. This phase involved the overall feedback of the teaching session including assessing the quality of the students' learning. The teacher made statistics, marking and topic summaries. Addressing any identified shortcomings, the teacher provided focused explanations and finally, the session was summarized for review.

After that, the researcher sent the evaluation to model experts for confirmation, resulting in a strong agreement with the findings.

1.3 Phase Ⅲ (R2\D2): To study the effectiveness of a blended learning model using the Production-Oriented Approach to improve the self-directed learning ability.

In this stage, 48 second year students of Chinese language and literature at Xinzhou Teachers University were randomly selected as the experimental group. The aim was to assess the improvement of self-directed learning ability within an e-learning environment. To ensure the integrity of the POA and blended learning model system.

For this phase, after the researcher applied the D-FEELLT model and conducted post-tests for students, it was found that the students achieved higher scores in knowledge and understanding compared to the pretest. Additionally, their "self-directed learning ability" was assessed to be at a satisfactory level.

For the topic of "Self-adjustment ability", the level of Self-adjustment ability was good; Students could study according to the study plan, obtain the learning information, and control their learning behavior.

Regarding the topic of "self-management ability" it was observed that the students' level of self-management ability was good. Students were able to follow study plans and confidently manage their time. For the theme of "self-control ability", students exhibited a satisfactory level of self-control ability. Students could organize their study time effectively, develop good study habits, and maintain a consistent study routine. After implementing the D-FEELLT model, the researcher presented the final modified model to be approved by model experts for publication . The results were as follows: The model experts agreed on all components and process of models to be applied, which aimed to improve self-management, self-adjustment, and self-control skills. A pilot study was conducted to assess the quality and the feasibility of using the D-FEELLT model.

2. Discussion of the Statistical Results

The findings from the need's questionnaire in Phase I, revealed a significant gap between the perceived importance of self-directed learning ability and the actual performance among students. Many students lack the ability of self-drive and planning skills when facing learning tasks. Furthermore, students struggle to effectively manage their learning time, and accurately evaluate their learning progress and outcomes. This finding highlights the urgency to improve self-directed learning skills among students. (Tong et al.,2023.

To address this issue, interventions must be multifaceted, encompassing improvements in teaching methods, enhanced learning guidance, and provision of learning resources. It is imperative to help students cultivate and improve their self-directed learning ability. At the same time, guiding them to realize the importance of self-directed learning and stimulating their learning enthusiasm and motivation (Yu et al.,2023).

After undergoing strict expert review, precise experimental verification, and detailed test analysis in the initial phase of the research we finally developed this innovative D-FEELLT model. To ensure that this model provides an excellent learning experience, we conducted multiple rounds of research and continuous improvement. We listened to the students, focused on their needs and feedback, and constantly optimized the design and function of the model. At the same time, we also invited a number of national excellent education experts from Thailand and China to review and give guidance to ensure the scientific and effectiveness of the model. Our results showed that students using the D-FEELLT model showed a significant improvement in learning outcomes.

1.This study found that the establishment of D-FEELLT involved three processes: 1) drive, 2) facilitate, and 3) evaluate. The D-FEELLT model had four key components: 1) evaluation and feedback, 2) learning platform, 3) learning environment and resources, and 4) teachers and students.

Under the D-FEELLT model, teachers in the "Drive" stage set clear learning goals and tasks, provide diversified learning resources and learning methods, meet the learning needs and styles of different students, stimulate students' interest and motivation in learning, and form a "big online drive" (Wu, 2020). Zhang et al. (2023) believes that students can clarify their learning goals and learning paths through their self-assessment and demand analysis. This process helps to cultivate students' self-directed learning ability and purposeful consciousness.

In the "Facilitate" stage, teachers could provide a variety of learning resources and environments through online platforms, such as online videos, e-books, forums, etc., so that students could learn anytime and anywhere, and communicate and discuss with peers. The data analysis function of XUE XI TONG platform could also be used to monitor the students' learning progress and effectiveness in real time, allowing for timely adjustment of teaching strategies and methods. Through the analysis of students 'learning data, teachers could more accurately grasp students' learning needs and problems and provide students with more personalized and differentiated teaching

services. Wang (2023) emphasized the importance of face-to-face communication and interaction in the offline classroom, which coincided with the current focus on practicality and interactivity in the educational field. In this teaching mode, students not only acquire knowledge from teachers, but also internalized what knowledge they had learned into their own understanding and application through practical communication and interaction. This process of internalization not only deepens students' understanding of knowledge, but also cultivated their self-adjustment, self-management, and self-control ability.

According to Yan (2023), the evaluation stage serves not only as a means of testing students' learning outcomes, but also a key link to promote the interaction between teaching and learning, thereby improving the quality of teaching. Through online and offline evaluation, teachers could understand students' learning situations and problems, adjust, and optimize their teaching strategies to better meet students' learning needs and improve their teaching quality and effectiveness. Zhu (2021) offers an inspiring perspective, encouraging students to not only absorb knowledge in the learning process, but also to reflect and summarize their own learning process. Such practices not only help students better understand what they have learned, but also improve their self-cognition and learning ability. In addition, reflection and summary are also a way of self-motivation. We should encourage students to actively reflect and summarize in the learning process, so that they can change from passive learners to active learners.

The beneficiaries of the D-FEELLT model were not only students, but also teachers and schools. For students, the D-FEELLT model provided a more flexible and diverse learning style. Teachers benefit as they can pay more attention to students' learning needs and problems, allowing them to better adjust teaching strategies and methods accordingly. As for schools, implementing the D-FEELLT model could improve the teaching quality and standards of the school, contributing to the cultivation of more excellent talents among students.

2. The results of a blended learning model using Production-Oriented Approach to improve self-directed learning ability.

The results showed that students often feel learning is hard, are unwilling to follow teacher instructions, prefer Internet-based and team activities, indicating a tendency towards blended learning to improve motivation. Modern students are more inclined to seek flexible, interactive and personalized learning experiences and were no longer satisfied with the traditional, rigid teaching methods. This shift underscores the necessity for educators to reconsider how to cultivate a learning environment that caters to student needs. Given the evolving demands of modern students, the creation of a flexible, interactive, and personalized learning environment has become a pressing concern for educational researchers. Wan et al. (2020) also emphasized this point in their research, highlighting the significance of students' adaptive and personalized needs within the learning environment.

The results indicated that the D-FEELLT model improved student performance after the exam. Compared with the pretest, students showed higher knowledge and understanding ability to learn the post-test content. This suggests that the D-FEELLT model not only helps to improve students' academic performance, but also effectively promotes their cognitive development and critical thinking ability. These positive changes will not only have important effects on the students' current studies but will also have a positive impact on their future studies and life endeavors. Ji's (2022) study further confirmed the advantages of the blended learning model in improving students' academic performance, practical skills, and self-directed learning ability. This learning mode not only aids students to achieve better results in the exam, but also cultivates their practical skills and self-directed learning ability, laying a solid foundation for their future learning and career development. With the continuous development and progress of educational technology, we have reason to believe that these innovative teaching methods will play a more vital role in the future of education.

The results revealed that the students demonstrated an elevated level of self-adjustment ability. Through implementing the D-FEELLT model, students were able to obtain the required information, sustain learning motivation, and proactively adjust learning motivation and behavior. Li et al. (2022) believed that diversified learning methods, such as online learning, group discussions and practical activities, stimulated students' interest and motivation to learn while fostering their ability to learn independently. This aligns with the "Drive" concept in POA and blended learning models. However, students displayed deficiencies in assessing their own learning effectiveness and evaluating learning outcomes, indicating a need to further improve these relevant abilities.

The findings indicated that students exhibited an elevated level of self-management ability, and the D-FEELLT model could set learning goals according to learning needs, effectively organized learning, and improved time management skills. The cultivation of self-management ability not only helped students to set learning goals, organized learning, and improved time management skills more effectively within the D-FEELLT model, but also had a profound impact on the overall development of students. Luo's (2023) study further revealed the importance of self-management ability in student development. He found that when students have a prominent level of self-management skills, they demonstrate more involvement in classroom activities, participate in discussions and interactions, and complete learning tasks more independently. This self-driven learning attitude not only helps to improve students' academic performance, but also cultivates their self-directed learning ability and instills lifelong learning habits. Therefore, we should prioritize the cultivation of students' self-management ability, and provide them with educational support, guidance, and practical experiences to better master the skills and methods of self-management, thereby laying a solid foundation for their future development.

The results indicate that students can control their study time, improve their self-control, and develop good study habits. Through continuous and structured learning every day, they could maintain a stable learning rhythm. It is worth mentioning

that this continuous and structured approach to learning every day, not only improves their learning efficiency and ability to regulate their learning time and pace, but also facilitates steady progress in their study. The study conducted by Yu et al. (2023) revealed for us the importance of learning time allocation and regulation in the learning process. Their results highlight the key role of focus and motivation for learning effects, providing valuable insights for educators and learners.

In conclusion, the D-FEELLT model has demonstrated positive effects in improving college students' academic performance and self-directed learning ability. This mode empowers teachers to design more abundant and diversified teaching activities and learning tasks according to students' learning characteristics and needs, thereby providing students with more personalized and effective teaching services.

3.Research suggestions

Development and implementation of D-FEELLT model designed to improve self-directed learning among sophomore college students. To further improve the effectiveness of this model of learning and stimulate students in all expected learning outcomes, the researchers suggest:

3.1 Teacher support and guidance: Although self-directed learning is the core of the D-FEELLT model, the role of teachers is still crucial. Teachers should communicate with students and provide necessary guidance and support. They can help students solve the problems they encounter, provide learning resources, and encourage them to make progress in their learning.

3.2 Evaluation and continuous improvement: Regularly evaluate the effectiveness of the D-FEELLT model, by adjusting and improving according to the evaluation results. This can be achieved by collecting student feedback, analyzing learning data, and evaluating students' learning outcomes. Through continuous improvement of the D-FEELLT model, one can ensure that it is always consistent with students' learning needs and objectives.

In conclusion, through deep integration of learning resources, faculty support and guidance, and implementing evaluation and continuous improvement, we

can further improve the effectiveness of the D-FEELLT model and stimulate students to make greater progress in all expected learning outcomes. This will help to develop students' self-directed learning skills and lay a solid foundation for their future academic and professional careers.

4.Recommendations for Future Study

4.1 The D-FEELLT model showed significant advantages in enhancing students' self-directed learning ability and collaborative skills. Future research could further explore how to use this model to foster students' innovative and critical thinking. For example, researchers could focus on designing some open and challenging learning tasks, so that students can not only consolidate the knowledge they learn while completing the task, but also give full play to their imagination and creativity and improve their problem-solving ability.

4.2 In practical application, the D-FEELLT model can also be integrated with other educational technologies and tools to further improve students' learning outcomes. For example, considering the incorporation of virtual reality (VR) or augmented reality (AR) technology within the D-FEELLT model could facilitate the creation of immersive and lifelike learning environments. This immersive experience would enable students to better comprehend and assimilate knowledge within simulated scenarios. In addition, the D-FEELLT model can also be combined with the intelligent teaching systems to realize personalized learning path recommendation and resource push to meet the learning needs of different students.

4.3 In the process of promoting the D-FEELLT model, attention should also be paid to teacher training and development. Teachers play a key role in implementing the D-FEELLT model, and their professionalism and teaching ability directly affect the learning outcomes of students. Therefore, future research can focus on how to provide effective training and support to help them better understand and apply the D-FEELLT model and improve the quality and effectiveness of teaching.

4.4 Ensuring the ongoing validity of the D-FEELLT model requires long-term follow-up and evaluation. Although existing studies have validated the advantages of the D-FEELLT model in improving students' self-directed learning and collaborative learning, its effects may change over time and as students mature. Therefore, future studies can establish a long-term tracking mechanism, to regularly evaluate the application outcomes of the D-FEELLT model and adjust and optimize according to the evaluation results to ensure that it continuously and effectively promotes the all-round development of students.

In conclusion, the D-FEELLT model, as an innovative teaching model, has immense potential and development space. Future research can explore various avenues to further explore and improve the model, making greater contributions to improving students' learning outcomes and overall learning experience.

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APPENDIX

APPENDIX A

List of experts in evaluating the research Instrument

3 IOC experts

1. Tipparat Sittiwong,Associate professor,Faculty of Education,Naresuan University

2. Nammon Ruangrit,Associate professor,Faculty of Education,Silpakorn University

3. Panida Sakuntanak,Assistant Professor,Faculty of Education, Srinakharinwirot University

2 Model Experts

Anirut Satiman,Associate professor,Technology of the Department of Educational Technology, Faculty of Education, Silpakorn University, Bangkok, THAILAND.

Surapon Boonlue, Associate professor,Faculty of Industrial Education and Technology, King Mongkut's University of Technology Thonburi

5 Content expert

Yao qinzhi,professor,Xinzhou Teachers University

Xiao jianhua ,Associate professor, Xinzhou Teachers University

Zhang Haifeng,Doctor,Xinzhou Teachers University

Yang li,Lecturer,Xinzhou Teachers University

Zhang wenliang,assistant,Xinzhou Teachers University

APPENDIX B

Research Instruments

The Development of a Blended Learning Model by Using a Production-Oriented Approach to Improve the Self-Directed Learning Ability for faculty of Chinese Language and Literature Undergraduate Students in China

(For IOC Experts)

Author name:

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Doctor of Education

Faculty of Education Srinakharinwirote university

Thesis advisor:

Asst. Professor Jaemjan Sriarunrasmee (Major-advisor)

Assoc. Professor Khwanying Sriprasertpap (Co-advisor)

Instruction: The evaluation form is designed to solicit expert opinions on adopting the POA and blended learning model to improve the independent learning ability of Chinese undergraduates.

Research background data

The study objectives are described as follows:

1.To study the conditions and requirements of A blended learning model by using Production-Oriented Approach to improve self-directed ability.

2.To develop A blended learning model by using Production-Oriented Approach to improve the self-directed learning ability.

3.To study the effective of A blended learning model by using Production-Oriented Approach on the e-learning enhancement to improve the self-directed learning ability.

General table of instruments				
Phase	Instrument			Content
Phase I	Instrument 1	Needs Questionnaire about the learning status of college students		Investigate and understand the learning status of college students
	Instrument 2	Interview form for content experts		Discuss how to develop a blended learning model
Phase Ⅱ	Instrument 3	Draft version of the POA and blended learning model	Part1 Model chart	To develop guidelines for the monitoring, evaluation and certification of blended learning models
			Part2 The appropriate of the model	
	Instrument 4	Lesson Plan		Develop the teaching plan of the POA and blended learning model to provide specific steps for the experiment.
	Instrument 5	Archives Test		To test the effect of the POA and blended model on college students' self-directed learning ability.
	Instrument 6	"Self-directed learning ability" questionnaire form		Test the effect of POA blended teaching
Phase Ⅲ	Instrument 7	Confirmation Model form		Confirm the structure of the D-FEELLT model, and the final figures.

Instrument 1

Needs Questionnaire about the learning status of college students

(For IOC Experts)

Instruction: This evaluation form is the quality of the experts used in the study to improve and develop materials to meet the higher quality.Please draw "√" on the blank space and score the quality of the medium according to the quality register below.To ensure the consistency of the data, the inspection level is divided as follows:

+ 1: Ensure that the evaluation project achieves its objectives;

0 It is not sure whether the evaluation project has achieved its purpose;

-1 indicates that the evaluation item is inconsistent with the purpose.

Students' answer criteria are as follows:

5 = High level of action

4 = Moderately high level of action

3 = Average level of action

2 = Low level of action

1 = No level of action

Note: Green "+" indicates positive and positive questions, Red "-" indicates reverse and negative problems.

Needs Questionnaire about the learning status of college students															
Question		Fact					Needs					IOC			Suggestion
		5	4	3	2	1	5	4	3	2	1	-1	0	1	
Gender (male/female)															
Length: four-year system															
Major: Secretarial major															
Self-adjustment ability															
1	Through classroom teaching, I can learn a complete and systematic knowledge. (+)														
2	Through online learning, I can learn a complete and systematic knowledge. (+)														
3	Through blended learning, you can improve your learning motivation. (+)														
4	Through blended learning, I can make a reasonable study plan. (+)														
5	Through blended learning, I think that learning is much easier. (+)														
6	I often feel that the learning process is hard work. (-)														

Needs Questionnaire about the learning status of college students															
Question		Fact					Needs					IOC			Suggestion
		5	4	3	2	1	5	4	3	2	1	-1	0	1	
Gender (male/female)															
Length: four-year system															
Major: Secretarial major															
Self-management ability															
1	In group collaboration, I can work very well with others. (+)														
2	I can actively participate in the activities according to the learning activities arranged by the teacher, such as teamwork, achievement display, practice, etc. (+)														
3	I am willing to learn certain courses through the Internet. (+)														
4	I am willing to take the study task to study online. (+)														
5	I can learn according to the learning materials provided by the teacher. (+)														
6	I can determine my own learning goals and learning activities. (+)														

Needs Questionnaire about the learning status of college students															
Question		Fact					Needs					IOC			Suggestion
		5	4	3	2	1	5	4	3	2	1	-1	0	1	
Gender (male/female)															
Length: four-year system															
Major: Secretarial major															
Self-control ability															
1	I can restrain my learning behavior. (+)														
2	I can study according to my own study plan. (+)														
3	I can resist all kinds of temptations and concentrate on my study. (+)														
4	I can get rid of my bad study habits. (+)														
5	I do not study according to the teacher's arrangement, and study according to my own plan. (-)														

Comment /Suggestion

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Instrument 2

Interview form for content experts

(For 5 content experts)

Instruction: This evaluation form is the quality of the experts used in the study to improve and develop materials to meet the higher quality.Please draw "√" on the blank space and score the quality of the medium according to the quality register below.To ensure the consistency of the data, the inspection level is divided as follows:

+ 1: Ensure that the evaluation project achieves its objectives;

0: It is not sure whether the evaluation project has achieved its purpose;

-1: indicates that the evaluation item is inconsistent with the purpose.

Note: Green "Q" indicates the main problem, Blue "S" indicates is the the scope answer.

Interview form for content experts					
Question		IOC			Suggestion
		-1	0	1	
1	Q: What are the specific components of the POA and blended learning model?				
	S: The POA and blended learning model should include the model map, curriculum plan, teacher, students, teaching tools, questionnaire, interview table, etc.				
2	Q: How to design the POA and blended learning model to Self-directed learning?And show if the design model is appropriate?				
	S: The POA and blended learning model diagram is developed according to the drive, facilitation and evaluation of POA theory.				
3	Q: What does the POA and blended learning model teaching plan include?				
	S: The POA and blended learning model teaching plan includes teaching time, teaching objectives, teaching content, teaching tools, and homework.				

Interview form for content experts					
Question		IOC			Suggestion
		-1	0	1	
4	Q: How to set up the POA and blended learning model test question?				
	S: POA and blended learning model test questions include fill-in-blank, multiple choice, noun explanation, short answer, and case analysis questions.				
5	Q: How does the POA and blended learning model test for autonomous learning ability?				
	S: Self-directed learning is reflected in Self-adjustment ability, self-management ability and self-control ability.				
6	Q: What are the requirements of the POA and blended learning model for the teaching environment and teaching design?				
	S: The POA and blended learning model requires the combination of learning and classroom, and interactive teaching between teachers and students.				
7	Q: How to allocate the experiment time, and more reasonable?				
	S: The experiment time was performed for 6 weeks.				

Comment /Suggestion

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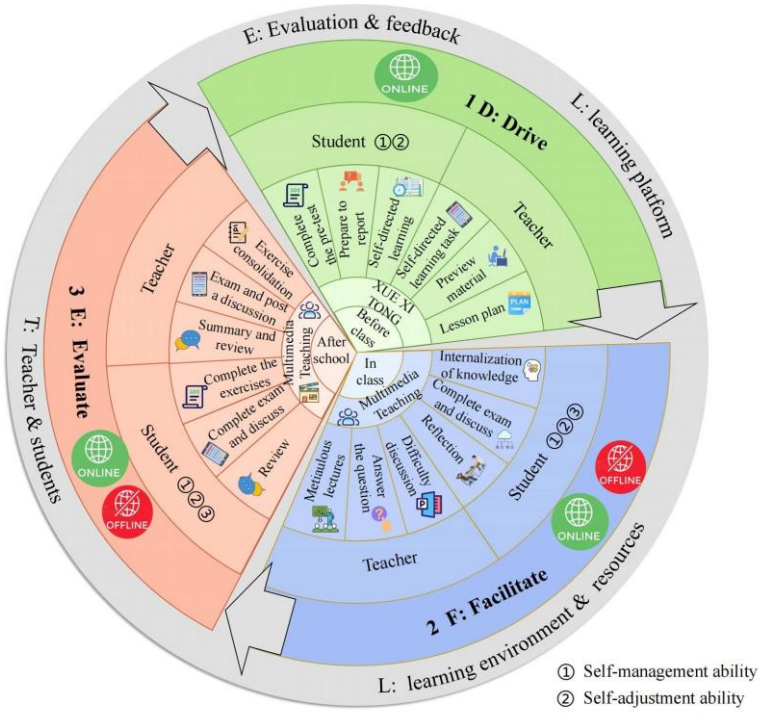
Instrument 3 (Part 1 Model Chart)

Approval model from expert				
Items	**IOC**			**Suggestion**
	-1	**0**	**1**	
				

More suggestions for pattern overview

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Instrument 3 (Part 2 The appropriate of the model)

The appropriate of the model

(For IOC experts)

Instruction: This evaluation form is the quality of the experts used in the study to improve and develop materials to meet the higher quality.Please draw "√" on the blank space and score the quality of the medium according to the quality register below.To ensure the consistency of the data, the inspection level is divided as follows:

+ 1: Ensure that the evaluation project achieves its objectives;

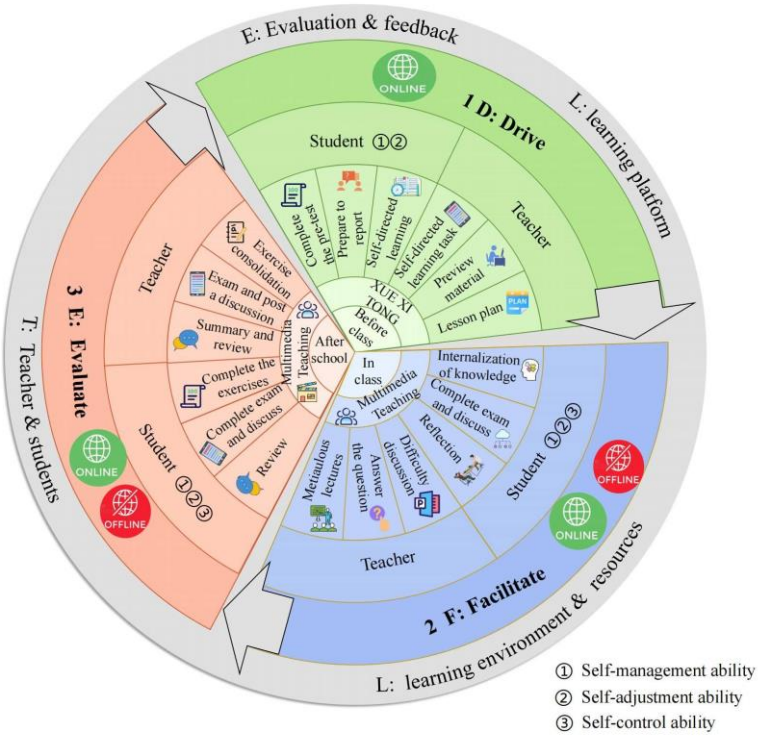
0 : It is not sure whether the evaluation project has achieved its purpose;

-1 : indicates that the evaluation item is inconsistent with the purpose.

The appropriate of the model						
Items			IOC			Suggestion
			-1	0	1	
The POA and blended learning model components						
1	Learning platform					
2	Teachers and students					
3	Learning environment and resources					
4	Evaluation and feedback					
The POA and blended learning model process						
1	Process 1: drive (preparation and preview)					
	Teacher	Lesson plan Preview materials Self-directed learning task				
	Student	Self-directed learning Prepare to report Complete the pre-test				
2	Process 2: Facilitate (internalization of knowledge in class)					
	Teacher	Fine speak Ask the questions Difficult discussion				
	Student	Internalization Of knowledge Complete exam and discuss Reflection				

The appropriate of the model						
Items			IOC			Suggestion
			-1	0	1	
The POA and blended learning model components						
3	Process 3:Evaluation (review and evaluation after class)					
	Teacher	Exercise consolidation Exam and post a discussion Summary and review				
	Student	Complete the exercises Complete exam and discuss Summary and review				
Integrity of the POA blended learning model						
1	The model forms a complete closed-loop design, with complete and rigorous components.					
2	The model process is reasonable and complete, forming a cycle pattern.					
3	The model conforms to the course plan and the teaching schedule.					
4	The model focuses on guidance and focuses on cultivating students' self-directed learning ability.					

Instrument 3 (Part 1 Model Chart)

Approval model from expert						
Items	MODEL					Suggestion
	5	4	3	2	1	
						

More suggestions for pattern overview

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Instrument 3 (Part 2 The appropriate of the model)

The appropriate of the model

(For model expert)

Instruction: This evaluation form is the quality of the experts used in the study to improve and develop materials to meet the higher quality.Please draw "√" on the blank space and score the quality of the medium according to the quality register below.To ensure the consistency of the data, the inspection level is divided as follows:

5 = Strongly agree

4 = Agree

3 = Neutral

2 = Disagree

1 = Strongly not agree

The appropriate of the model									
Items			MODEL					Suggestion
			5	4	3	2	1	
The POA and blended learning model components								
1	Learning platform							
2	Teachers and students							
3	Learning environment and resources							
4	Evaluation and feedback							
The POA and blended learning model process								
1	Process 1: drive (preparation and preview)							
	Teacher	Lesson plan Preview materials Self-directed learning task						
	Student	Self-directed learning Prepare to report Complete the pre-test						
2	Process 2: Facilitate (internalization of knowledge in class)							
	Teacher	Fine speak Ask the questions Difficult discussion						
	Student	Internalization Of knowledge Complete exam and discuss Reflection						

The appropriate of the model									
Items			MODEL					Suggestion
			5	4	3	2	1	
3	Process 3:Evaluation (review and evaluation after class)							
	Teacher	Exercise consolidation Exam and post a discussion Summary and review						
	Student	Complete the exercises Complete exam and discuss Summary and review						
Integrity of the POA blended learning model								
1	The model forms a complete closed-loop design, with complete and rigorous components.							
2	The model process is reasonable and complete, forming a cycle pattern.							
3	The model conforms to the course plan and the teaching schedule.							
4	The model focuses on guidance and focuses on cultivating students' self-directed learning ability.							

Instrument 4 (Lesson Plan)

Lesson Plan

(Use for content experts)

Description: The quality of the content used in the study to improve and develop the material to meet the higher quality. Please draw "" on the blank space and score the quality of the medium according to the quality register below. To ensure the consistency of the data, the inspection level is divided as follows:

Lesson Plan						
Time	**Learning purpose**	**Learning content**	**Learning activities**	**Learning medium and tools**	**Measurement and evaluation**	**Suggestion**
Week1 90 Minutes	Part 1: Drive (Prepare and preview before class) 1.Complete the autonomous study test form. 2.According to the teaching progress and teaching arrangement, selected preview materials are pushed through the learning pass, and independent learning tasks are sent. 3.Improve the self-management ability and self-control ability Part 2: Facilitation (Internalization of knowledge in class) 1.For preview, ask questions, organize key and difficult discussions. 2.Organize key and difficult discussions, group activities, thinking and communication, and internalize knowledge. 3.Improve the self-management ability and self-control ability. Part 3: Evaluation (Review and evaluation after class) 1. Publish after-class discussions and topics, and summarize and review 2. Finish the homework after class 3. Improve your self-management ability and self-control ability.	Official document title	Online: Pre-class drive 1.Set two task points in the "chapter" to upload preview materials. 2.In the study pass "notice" issued specific requirements. 3.Post the homework in the learning pass. Offline: Produce in class 1.Focus on the task points set online (20 minutes). 2.Group the students into groups, divide the 42 students into 6 groups, and carry out the following activities (45 minutes): 2.1Game one game Before class, push the selected preview materials through learning, and compete in groups to answer questions. 2.2Play a play In the first part, I have a preliminary understanding of the content, internalize the knowledge by acting, and treat theofficial document as the growth of a child to know its name. 2.3Draw a picture Use mind mapping to sort out official document titles. Offline: after-class evaluation Group evaluation for the learning content in the class.(25 minutes)	1.XUE XITONG 2.PPT 3.Preview materials 4.XMind	Studentscan drawa mind map of official document titles	

Lesson Plan						
Time	**Learning purpose**	**Learning content**	**Learning activities**	**Learning medium and tools**	**Measurement and evaluation**	**Suggestion**
Week2 90 Minutes	The POA and blended learning model Part 1: Drive (Prepare and preview before class) 1.According to the teaching progress and teaching arrangement, selected preview materials are pushed through the learning pass, and independent learning tasks are sent. 2.Improve the self-management ability and self-control ability Part 2: Facilitation (Internalization of knowledge in class) 1.For preview, ask questions, organize key and difficult discussions. 2.Organize key and difficult discussions, group activities, thinking and communication, and internalize knowledge. 3.Improve the self-management ability and self-control ability. Part 3: Evaluation (Review and evaluation after class) 1. Publish after-class discussions and topics, and summarize and review 2. Finish the homework after class 3. Improve your self-management ability and self-control ability.	Official document characteristics	Online: Pre-class drive 1.Set two task points in the "chapter" to upload preview materials. 2.In the study pass "notice" issued specific requirements. 3.Post the homework in the learning pass. Offline: Produce in class 1.Focus on the task points set online (20 minutes). 2.Group the students into groups, divide the 42 students into 6 groups, and carry out the following activities (45 minutes): 2.1Game one game Before class, push the selected preview materials through learning, and compete in groups to answer questions. 2.2Play a play In the first part, I have a preliminary understanding of the content, internalize the knowledge by acting, and treat the official document as the growth ofa child to know its name. 2.3Draw a picture Use mind mapping to sort outofficial document titles. Offline: after-class evaluation Group evaluation for the learning content in the class.(25 minutes)	1.XUE XITONG 2.PPT 3.Preview materials	Each group was able to orally explain the four characteristics of the document and give examples.	

Lesson Plan						
Time	**Learning purpose**	**Learning content**	**Learning activities**	**Learning medium and tools**	**Measurement and evaluation**	**Suggestion**
Week3 90 Minutes	The POA and blended learning model Part 1: Drive (Prepare and preview before class) 1.According to the teaching progress and teaching arrangement, selected preview materials are pushed through the learning pass, and independent learning tasks are sent. 2.Improve the self-management ability and self-control ability Part 2: Facilitation (Internalization of knowledge in class) 1.For preview, ask questions, organize key and difficult discussions. 2.Organize key and difficult discussions, group activities, thinking and communication, and internalize knowledge. 3.Improve the self-management ability and self-control ability. Part 3: Evaluation (Review and evaluation after class) 1. Publish after-class discussions and topics, and summarize and review 2. Finish the homework after class 3. Improve your self-management ability and self-control ability.	Document handling	Online: Pre-class drive 1.Set two task points in the "chapter" to upload preview materials. 2.In the study pass "notice" issued specific requirements. 3.Post the homework in the learning pass. Offline: Produce in class 1.Focus on the task points set online (20 minutes). 2. Group the students, divide the 42 students into 6 groups, and carry out the scenario simulation activity (40 minutes):Before class, this section pushes selected preview materials through learning pass, students draft the plan before class, prepare props, write the script according to the content of the textbook, make PPT, and show in class. Offline: after-class evaluation 1.The solitaire evaluation：Each group of solitars to comment on the link and content of the scenario simulation, put forward opinions, and say their own harvest(20 minutes).. 2.Teacher comments：On the basis of the above two links, the teacher summarized the key and difficult points of the document handling, and put forward the deficiencies and improvements of the situation simulation of the practical training group(10 minutes).	1.XUE XITONG 2.PPT 3.Preview materials 4.Prepare the props according to the practical training requirements	1. Follow the practical training requirements.appendix 2. Submit the practical training plan and PPT	

Lesson Plan						
Time	**Learning purpose**	**Learning content**	**Learning activities**	**Learning medium and tools**	**Measurement and evaluation**	**Suggestion**
Week4 90 Minutes	The POA and blended learning model Part 1: Drive (Prepare and preview before class) 1.According to the teaching progress and teaching arrangement, selected preview materials are pushed through the learning pass, and independent learning tasks are sent. 2.Improve the self-management ability and self-control ability Part 2: Facilitation (Internalization of knowledge in class) 1.For preview, ask questions, organize key and difficult discussions. 2.Organize key and difficult discussions, group activities, thinking and communication, and internalize knowledge. 3.Improve the self-management ability and self-control ability. Part 3: Evaluation (Review and evaluation after class) 1. Publish after-class discussions and topics, and summarize and review 2. Finish the homework after class 3. Improve your self-management ability and self-control ability.	Receive	Online: Pre-class drive 1.Set two task points in the "chapter" to upload preview materials. 2.In the study pass "notice" issued specific requirements. 3.Post the homework in the learning pass. Offline: Produce in class 1.Focus on the task points set online (20 minutes). 2. Group the students, divide the 42 students into 6 groups, and carry out the scenario simulation activity (40 minutes):Before class, this section pushes selected preview materials through learning pass, students draft the plan before class, prepare props, write the script according to the content of the textbook, make PPT, and show in class. Offline: after-class evaluation 1,The solitaire evaluation：Each group of solitars to comment on the link and content of the scenario simulation, put forward opinions, and say their own harvest(20 minutes),. 2,Teacher comments：On the basis of the above two links, the teacher summarized the key and difficult points of the document handling, and put forward the deficiencies and improvements of the situation simulation of the practical training group(10 minutes).	1.XUEXITONG 2.PPT 3.Preview materials 4.Prepare the props according to the practical training requirements	1. Follow the practical training requirements.appendix 2. Submit the practical training plan and PPT	

Lesson Plan						
Time	**Learning purpose**	**Learning content**	**Learning activities**	**Learning medium and tools**	**Measurement and evaluation**	**Suggestion**
Week3 90 Minutes	The POA and blended learning model Part 1: Drive (Prepare and preview before class) 1.According to the teaching progress and teaching arrangement, selected preview materials are pushed through the learning pass, and independent learning tasks are sent. 2.Improve the self-management ability and self-control ability Part 2: Facilitation (Internalization of knowledge in class) 1.For preview, ask questions, organize key and difficult discussions. 2.Organize key and difficult discussions, group activities, thinking and communication, and internalize knowledge. 3.Improve the self-management ability and self-control ability. Part 3: Evaluation (Review and evaluation after class) 1. Publish after-class discussions and topics, and summarize and review 2. Finish the homework after class 3. Improve your self-management ability and self-control ability.	Document handling	Online: Pre-class drive 1.Set two task points in the "chapter" to upload preview materials. 2.In the study pass "notice" issued specific requirements. 3.Post the homework in the learning pass. Offline: Produce in class 1.Focus on the task points set online (20 minutes). 2. Group the students, divide the 42 students into 6 groups, and carry out the scenario simulation activity (40 minutes):Before class, this section pushes selected preview materials through learning pass, students draft the plan before class, prepare props, write the script according to the content of the textbook, make PPT, and show in class. Offline: after-class evaluation 1,The solitaire evaluation：Each group of solitars to comment on the link and content of the scenario simulation, put forward opinions, and say their own harvest(20 minutes).. 2,Teacher comments：On the basis of the above two links, the teacher summarized the key and difficult points of the document handling, and put forward the deficiencies and improvements of the situation simulation of the practical training group(10 minutes).	1.XUE XITONG 2.PPT 3.Preview materials 4.Prepare the props according to the practical training requirements	1. Follow the practical training requirements.appendix 2. Submit the practical training plan and PPT	

Lesson Plan						
Time	**Learning purpose**	**Learning content**	**Learning activities**	**Learning medium and tools**	**Measurement and evaluation**	**Suggestion**
Week4 90 Minutes	The POA and blended learning model Part 1: Drive (Prepare and preview before class) 1.According to the teaching progress and teaching arrangement, selected preview materials are pushed through the learning pass, and independent learning tasks are sent. 2.Improve the self-management ability and self-control ability Part 2: Facilitation (Internalization of knowledge in class) 1.For preview, ask questions, organize key and difficult discussions. 2.Organize key and difficult discussions, group activities, thinking and communication, and internalize knowledge. 3.Improve the self-management ability and self-control ability. Part 3: Evaluation (Review and evaluation after class) 1. Publish after-class discussions and topics, and summarize and review 2. Finish the homework after class 3. Improve your self-management ability and self-control ability.	Receive	Online: Pre-class drive 1.Set two task points in the "chapter" to upload preview materials. 2.In the study pass "notice" issued specific requirements. 3.Post the homework in the learning pass. Offline: Produce in class 1.Focus on the task points set online (20 minutes). 2. Group the students, divide the 42 students into 6 groups, and carry out the scenario simulation activity (40 minutes):Before class, this section pushes selected preview materials through learning pass, students draft the plan before class, prepare props, write the script according to the content of the textbook, make PPT, and show in class. Offline: after-class evaluation 1,The solitaire evaluation：Each group of solitars to comment on the link and content of the scenario simulation, put forward opinions, and say their own harvest(20 minutes),. 2,Teacher comments：On the basis of the above two links, the teacher summarized the key and difficult points of the document handling, and put forward the deficiencies and improvements of the situation simulation of the practical training group(10 minutes).	1.XUEXITONG 2.PPT 3.Preview materials 4.Prepare the props according to the practical training requirements	1. Follow the practical training requirements.appendix 2. Submit the practical training plan and PPT	

Lesson Plan						
Time	**Learning purpose**	**Learning content**	**Learning activities**	**Learning medium and tools**	**Measurement and evaluation**	**Suggestion**
Week5 90 Minutes	The POA and blended learning model Part 1: Drive (Prepare and preview before class) 1.According to the teaching progress and teaching arrangement, selected preview materials are pushed through the learning pass, and independent learning tasks are sent. 2.Improve the self-management ability and self-control ability Part 2: Facilitation (Internalization of knowledge in class) 1.For preview, ask questions, organize key and difficult discussions. 2.Organize key and difficult discussions, group activities, thinking and communication, and internalize knowledge. 3.Improve the self-management ability and self-control ability. Part 3: Evaluation (Review and evaluation after class) 1. Publish after-class discussions and topics, and summarize and review 2. Finish the homework after class 3. Improve your self-management ability and self-control ability.	Handle official documents	Online: Pre-class drive 1.Set two task points in the "chapter" to upload preview materials. 2.In the study pass "notice" issued specific requirements. 3.Post the homework in the learning pass. Offline: Produce in class 1.Focus on the task points set online (20 minutes). 2. Group the students, divide the 42 students into 6 groups, and carry out the scenario simulation activity (40 minutes):Before class, this section pushes selected preview materials through learning pass, students draft the plan before class, prepare props, write the script according to the content of the textbook, make PPT, and show in class. Offline: after-class evaluation 1,The solitaire evaluation：Each group of solitars to comment on the link and content of the scenario simulation, put forward opinions, and say their own harvest(20 minutes),. 2,Teacher comments：On the basis of the above two links, the teacher summarized the key and difficult points of the document handling, and put forward the deficiencies and improvements of the situation simulation of the practical training group(10 minutes).	1.XUE XITONG 2.PPT 3.Preview materials 4.Prepare the propsaccording to the practical training requirements	1. Follow the practical training requirements.appendix 2. Submit the practical training plan and PPT	

Lesson Plan						
Time	**Learning purpose**	**Learning content**	**Learning activities**	**Learning medium and tools**	**Measurement and evaluation**	**Suggestion**
Week6 90 Minutes	The POA and blended learning model Part 1: Drive (Prepare and preview before class) 1.According to the teaching progress and teaching arrangement, selected preview materials are pushed through the learning pass, and independent learning tasks are sent. 2.Improve the self-management ability and self-control ability Part 2: Facilitation (Internalization of knowledge in class) 1.For preview, ask questions, organize key and difficult discussions. 2.Organize key and difficult discussions, group activities, thinking and communication, and internalize knowledge. 3.Improve the self-management ability and self-control ability. Part 3: Evaluation (Review and evaluation after class) 1.Publish after-class discussions and topics, and summarize and review 2.Finish the homework after class 3.Improve your self-management ability and self-control ability.	Documentsorting and archiving	Online: Pre-class drive 1.Set two task points in the "chapter" to upload preview materials. 2.In the study pass "notice" issued specific requirements. 3.Post the homework in the learning pass. Offline: Produce in class 1.Focus on the task points set online (20 minutes). 2. Group the students, divide the 42 students into 6 groups, and carry out the scenario simulation activity (40 minutes):Before class, this section pushes selected preview materials through learning pass, students draft the plan before class, prepare props, write the script according to the content of the textbook, make PPT, and show in class. Offline: after-class evaluation 1,The solitaire evaluation：Each group of solitars to comment on the link and content of the scenario simulation, put forward opinions, and say their own harvest(20 minutes).. 2,Teacher comments：On the basis of the above two links, the teacher summarized the key and difficult points of the document handling, and put forward the deficiencies and improvements of the situation simulation of the practical training group(10 minutes).	1.XUE XITONG 2.PPT 3.Preview materials 4.Preparethe propsaccordingto the practical training requirements	1. Follow the practical training requirements.appendix 2. Submit the practical training plan and PPT	

Instrument 5

Archives Test

(For IOC Experts)

Instruction: This evaluation form is the quality of the experts used in the study to improve and develop materials to meet the higher quality.Please draw "√" on the blank space and score the quality of the medium according to the quality register below.To ensure the consistency of the data, the inspection level is divided as follows:

+ 1: Ensure that the evaluation project achieves its objectives;

0: It is not sure whether the evaluation project has achieved its purpose;

-1: indicates that the evaluation item is inconsistent with the purpose.

Note:

Green "K" means "Knowledg"

Red "U" means "Understand"

Examination questions					
Question		IOC			Suggestion
		-1	0	1	
1. Fill in the blanks (1 point for each blank, 15 points)					
1	According to the degree of confidentiality, official documents are divided into five levels: ( ), ( ), ( ) restriction and disclosure. (K) Answer:(top secret), (secret), (secret)				
2	The characteristics of the document processing process are ( ), ( ), ( ), and ( ). (K) Answer:(stability), (order), (adaptability),(standardization)				
3	( ) is known as the first academic work in Chinese history to systematically study the origin, development, literary changes of official documents and writing requirements and laws. (K) Answer:("Wen Xin Diao Long")				
4	The documents formed and used in a series of activities from the preparation of the meeting to the aftermath are called ( ). (K) Answer:(conference management documents)				

Examination questions					
	Question	IOC			Suggestion
		-1	0	1	
5	Direct writing is also called ( ). (K) (publish an official document)				
6	( ) is the link to form the approval and distribution requirements after the finalization of official documents. (K) Answer:(Note and distribution)				
7	The most widely used classification is the ( ). (K) Answer:(annual classification)				
8	The three major schools of document life cycle theory are ( ), ( ) and ( ). (K) Answer:(American and British), (Latin language), (traditional Chinese)				
2. Single topic choice (1 point for each question, 10 points in total)					
1	Document management is also called ( ). (K) A. Receiving management B. Post management C. Sending and receiving management D. Document management Answer:C				
2	The issuer of the official document within the legal scope of his authority is called ( ). (K) A. Countersignature B. Nuclear sign C. Generation signature D. Signed Answer:D				

Examination questions					
	Question	IOC			Suggestion
		-1	0	1	
3	What is an independent organ, organization or figure in the social activities formed in the archives of the organic whole.( ) (K) A. Document B. General archive C. File D. Volume group Answer:B				
4	Official documents are divided into ( ) and reading documents according to the processing method. (K) A. Handling document B. Reading document C. Reading document D. Initials Answer:B				
5	Review ( ), to the important document from the content to the text of a comprehensive check. (U) A. "A pen" B. "One mouth" C. "A pass" D. "A door" Answer:C				
6	Documents are the predecessor of archives, archives are part of the ( ). (U) A. Essence B. Combination C. Home D. Foundation Answer:C				

Examination questions					
	Question	IOC			Suggestion
		-1	0	1	
7	The problem classification is based on the ( ) classification reflected in the document content. (K) A. Problem characteristics B. Time characteristics C. Newsletter characteristics D. Location characteristics Answer:A				
8	In order to solve the contradiction between the chaos of archives and the systematic requirements of management and utilization, the archives ( ) is formed. (U) A. Statistical work B. Collection work C. Storage work D. Sorting work Answer:D				
9	The fundamental difference between file and book is ( ). (U) A. Systematic B. Original recording C. Deterministic D. Knowledge Answer:B				
10	Call-on method does not include ( ). (K) A. Call B. Text call C. Go to the door D. Email call Answer:D				

Examination questions					
	Question	IOC			Suggestion
		-1	0	1	
3. Noun explanation (5 points for each question, 20 points in total)					
1	Issue (U) Answer: that is, by the person in charge of the organ unit or the head of the department who was granted special authority to the review of the document after the final review, signed the approval opinion, name and complete date of the link.				
2	Legal author (U) Answer:refers to the organs and other social organizations or their legal representatives established according to law and able to exercise their rights and obligations in their own name. The establishment of "law" is a broad concept, mainly through two ways: one is according to laws and regulations or administrative examination and approval. If the state organs are generally established by laws and regulations or administrative examination and approval. Second, after approval and registration. If the company and other approved by the administrative department for industry and commerce, become an enterprise legal person. Legal authors may make official documents according to their scope of functions and powers, and bear responsibility for the legal consequences of writing in their own name.				

Examination questions					
	Question	IOC			Suggestion
		-1	0	1	
3	Multi-level writing (U) Answer: namely according to the need up, subordinate multi-level organ unit writing. This form transmits quickly and reduces the time cost of issuing, printing and forwarding step by step. Multi-level writing is mostly used for the following writing without the specific provisions; only if the problem is serious and needs to be understood by the higher authorities and units.				
4	Issuance (U) Answer: that is, after the document is printed, the text, format and printing quality should be checked and distributed, including in accordance with the relevant regulations and requirements, pick and separate documents to be issued, registration and seal, in order to formally issue a series of links.				

Examination questions					
	Question	IOC			Suggestion
		-1	0	1	
4. Short answer questions (10 points for each, 40 points in total)					
1	Brief describe the characteristics of official documents. (K) Answer: Specific authors —— official documents shall be issued by legal or diversified authors; Specific utility —— Document has legal authority and practical execution utility; Specific style —— official documents have a specific style and standard format; Specific procedures —— The production and effectiveness of official documents shall go through legal procedures and procedures.				
2	Simply describe the order of the archived documents. (K) Answer:Archived documents shall be bound by piece. The printed text (deposit) is the first, the final draft is the later; the main text is the first, the attachment is the later; the original is before, the copy is the second; the forward text is the first, the forwarded text is the second; the reply text is the first and the minority text is the first; in the absence of special provisions, the Chinese text is the first and the foreign text is the later; for the document processing order, the document processing order is the first and the text is the later.				

Examination questions					
Question		IOC			Suggestion
		-1	0	1	
3	Briefly describe the three elements of the electronic official document. (K) Answer: Content: Information contained in the official document expressing the author's intention. Structure: the organization and expression of document content information, such as the paragraph arrangement of text, the code and format used in electronic documents, as well as the carrier, attachment and other information. Background information: information that can prove the relationship between the document formation process and the document, including information indicating the source and the destination of the document, other information related to the content information, such as the sender, the signer, the date of document generation, the recipient, etc.				

Examination questions					
	Question	IOC			Suggestion
		-1	0	1	
4	Brief the effectiveness level of the current utility of the official document. (K) Answer: (1) The higher the status of the issuing authority, the higher the effectiveness level of the document; (2) In the official documents issued by the same master system, the effectiveness level of the official documents formulated in accordance with specific and stricter procedures is higher than the official documents issued in accordance with the general procedures; (3) The principle of "the new law is superior to the old law" in the official documents issued on the same issue; (4) For official documents made and issued by the same issuing agency, the effectiveness of special documents is usually better than general documents, that is, "special is better than general"; (5) The effect of the authorized document is equivalent to the effectiveness of the official document issued by the authorized authority.				

5. Material Analysis Questions (15 points)

160

Us women found internal documents from officials, revealing the mayor's wages far exceeding those of the president (U)

Jane Alice, 53, a pauper in Los Angeles, whose husband died long ago and has been scavenging for years. One day in early July 2010, Alice was passing by the gate of the Bell city government. Inside, a Qing student stopped her, pointed to a lot of waste paper sorted by the office, and asked her to move away. When Alice wassorting through the discarded papers, she found a salary breakdown of bell city officials, which clearly showed the annual salary records of Mayor Hernandez, Police Chief Randy Adams, assistant consul Angelaspath and others. When Alice saw the salary document, she was very angry and disgusted. She could not understand how the government officials were comfortably paid in Bell City when many people were struggling to survive like her! Alice took to the streets and spread the story as a speech: " The presidents of the United States earn less than the Bell officials. I think it's enough to show that Bell officials are paid too much and that our Bell City Council has completely abandoned its responsibility on taxpayers!"

Alice's move caught the attention of the Los Angeles Times, which soon joined theLos Angeles district attorney to investigate and confirmed that the information was accurate, and subsequently reported the incident. RESULTS Los Angeles and the United States. Forced by public opinion, Bell City Hall officials and lawmakers held a"introspection meeting" on July 26. At the meeting, four well-paid officials, including the chief executive and assistant chief executive and the police chief, announce their resignation. At the same time, the pressure of lawmakers unanimously passed the resolution: all high-paid government officials and legislators, including Mayor Hernandez, will be cut by 90%!(Excerpt from The Yangcheng Evening News, August 17,2010, slightly deleted)

Please analyze the case based on the relevant theories of internal document management.

Answer: This case should be explained by using the relevant theory of the internal document management of the organization.First of all, whether or not the practice of Bellcity government is legal or not, the city government's attitude and custody of internal documents is wrong. Secondly, for the documents with no preservation value, the secretary should bedestroyed in time, this kind of document destruction work can not be handled by outsiders, or sold as waste products, and should be destroyed by the shredder, and then shipped to the designated place for processing, can not be treated as other typesof waste paper. Finally, for the internal documents that should be made public, the secretary should report to the relevant leaders for approval, so as to ensure the operation of the organization.

Comment /Suggestion

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Instrument 6

"Self-directed learning ability" questionnaire form

(For IOC Experts)

Instruction: This evaluation form is the quality of the experts used in the study to improve and develop materials to meet the higher quality.Please draw "√" on the blank space and score the quality of the medium according to the quality register below.To ensure the consistency of the data, the inspection level is divided as follows:

+ 1: Ensure that the evaluation project achieves its objectives;

0: It is not sure whether the evaluation project has achieved its purpose;

-1: indicates that the evaluation item is inconsistent with the purpose.

Students' answer criteria are as follows:

5 = High level of action

4 = Moderately high level of action

3 = Average level of action

2 = Low level of action

1 = No level of action

Note: Green "+" indicates positive and positive questions, Red "-" indicates reverse and negative problems.

"Self-directed learning ability" questionnaire form										
Question		Student					IOC			Suggestion
		5	4	3	2	1	-1	0	1	
Your gender A male B female										
Self-adjustment ability assessment										
1	I try to learn what I want to learn. (+)									
2	When I study, I know what to learn. (+)									
3	I firmly believe that I can study hard. (+)									
4	I can know if I'm learning well or not. (+)									
5	I can get the information I need for myself. (+)									
6	I can stick to my study plan. (+)									
7	I prefer to determine the criteria to follow in evaluating my own performance. (+)									
8	I often actively regulate my own motivation and behavior to participate in learning activities. (+)									
9	I can repeat the learning content in order to keep the information. (+)									
10	I can integrate the knowledge to form a new knowledge structure, such as an outline. (+)									
Self-management ability assessment										

"Self-directed learning ability" questionnaire form											
Question		Student					IOC			Suggestion
		5	4	3	2	1	-1	0	1	
1	I can set up a specific study plan. (+)									
2	I can motivate myself in my study. (+)									
3	I was able to solve those problems that I had already planned for. (+)									
4	I will take the initiative to communicate with my classmates and discuss the problems arising in my study. (+)									
5	I will arrange my study according to the order of events. (+)									
6	I often set periodic learning goals according to my own learning needs. (+)									
7	I am a disciplined and organized person. (+)									
8	I have a tight schedule for my study. (+)									
9	I like to study alone. (+)									
10	I have great confidence in my time management skills. (+)									

"Self-directed learning ability" questionnaire form										
Question		Student					IOC			Suggestion
		5	4	3	2	1	-1	0	1	
Self-control ability assessment										
1	I can study according to my own study plan. (+)									
2	I can complete the teacher's task. (+)									
3	I can control my study time. (+)									
4	I can handle the time of study and game well. (+)									
5	I can develop good study habits. (+)									
6	The teacher supervises me, so that I can study hard. (-)									
7	My study is always controlled by a fixed plan. (-)									
8	I can study reasonably every day. (+)									

Comment /Suggestion

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Instrument 7

Approval model from expert

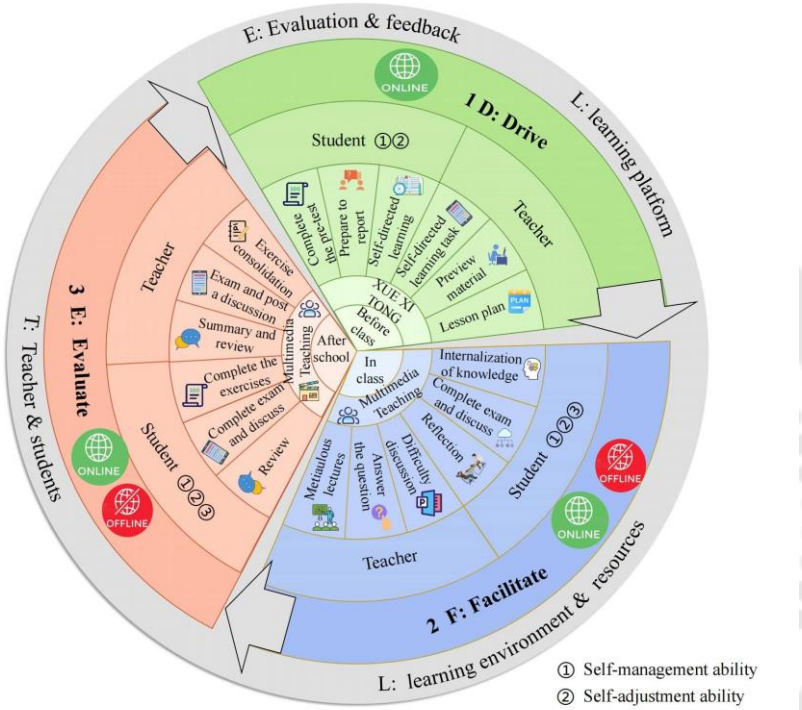
(Suitable for 3 quality assessment experts)

Instruction: This evaluation form is the quality of the experts used in the study to improve and develop materials to meet the higher quality.Please draw "√" on the blank space and score the quality of the medium according to the quality register below.To ensure the consistency of the data, the inspection level is divided as follows:

+ 1: Ensure that the evaluation project achieves its objectives;

0: It is not sure whether the evaluation project has achieved its purpose;

-1: indicates that the evaluation item is inconsistent with the purpose.

Approval model from expert				
Model	IOC			Suggestion
	-1	0	1	
				

More suggestions for pattern overview

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Instrument 7

Confirmation Model form

(Use for experts)

Instruction: This evaluation form is the quality of the experts used in the study to improve and develop materials to meet the higher quality.Please draw "√" on the blank space and score the quality of the medium according to the quality register below.To ensure the consistency of the data, the inspection level is divided as follows:

5 = Strongly agree

4 = Agree

3 = Neutral

2 = Disagree

1 = Strongly not agree

Confirmation Model form							
Items		Evaluation					Suggestion
		5	4	3	2	1	
The over all of the model							
1	The model elements are complete.						
2	Model tools are properly selected.						
3	The model was evaluated reasonably.						
4	The reasonable modification to the model.						
5	The model achieves the expected goal.						
The components of the model							
1	Learning auxiliary materials are detailed and proper.						
2	Rich in content and activities.						
3	The evaluation process is reasonable.						
4	Teachers and students interact well.						
5	The learning process is interesting and vivid.						

Confirmation Model form							
Items		Evaluation					Suggestion
		5	4	3	2	1	
The process of the model							
1	The draft design is reasonable, and the process is clear and concise.						
2	The assessment meets the expert requirements.						
3	The improvement conforms to the teaching.						
4	Practice and the experimental requirements.						
The Learning environment of the model							
1	Online: learning through, e-learning						
2	Offline: classroom						

APPENDIX C

Score by expert

First submission IOC scoring (Instrument 1、 2、 5、 6)

Instrument 1 Questionnaire survey of college students' learning status needs, and the evaluation results are shown in the following table:

Item	Experts			IOC	Result	Suggestion
	1	2	3			
Self-adjustment ability						
1	+1	+1	+1	1.00	Agree	
2	+1	+1	+1	1.00	Agree	
3	+1	+1	+1	1.00	Agree	
4	+1	+1	+1	1.00	Agree	
5	+1	+1	+1	1.00	Agree	
6	+1	+1	+1	1.00	Agree	
Self-management ability						
1	+1	+1	+1	1.00	Agree	
2	+1	+1	+1	1.00	Agree	
3	+1	+1	+1	1.00	Agree	
4	+1	+1	+1	1.00	Agree	
5	+1	+1	+1	1.00	Agree	
6	+1	+1	+1	1.00	Agree	
Self-control ability						

1	+1	+1	+1	1.00	Agree
2	+1	+1	+1	1.00	Agree
3	+1	+1	+1	1.00	Agree
4	+1	+1	+1	1.00	Agree
5	+1	+1	+1	1.00	Agree

Instrument 2 Interview form for content experts, and the evaluation results are shown in the following table:

Item	Experts			IOC	Result	Suggestion
	1	2	3			
1	+1	+1	+1	1.00	Agree	
2	+1	+1	+1	1.00	Agree	
3	+1	+1	+1	1.00	Agree	
4	+1	+1	+1	1.00	Agree	
5	+1	+1	+1	1.00	Agree	
6	+1	+1	+1	1.00	Agree	

Instrument 5 Archives test, and the evaluation results are shown in the following table:

Item	Experts			IOC	Result	Suggestion
	1	2	3			
1.Fill in the blanks						
1	+1	+1	+1	1.00	Agree	
2	+1	+1	+1	1.00	Agree	
3	+1	+1	+1	1.00	Agree	
4	+1	+1	+1	1.00	Agree	
5	+1	+1	+1	1.00	Agree	
6	+1	+1	+1	1.00	Agree	
7	+1	+1	+1	1.00	Agree	
8	+1	+1	+1	1.00	Agree	
2.Single topic choice						
1	+1	+1	+1	1.00	Agree	
2	+1	+1	+1	1.00	Agree	
3	+1	+1	+1	1.00	Agree	
4	+1	+1	+1	1.00	Agree	
5	+1	+1	+1	1.00	Agree	
6	+1	+1	+1	1.00	Agree	
7	+1	+1	+1	1.00	Agree	

8	+1	+1	+1	1.00	Agree
9	+1	+1	+1	1.00	Agree
10	+1	+1	+1	1.00	Agree
3.Noun explanation					
1	+1	+1	+1	1.00	Agree
2	+1	+1	+1	1.00	Agree
3	+1	+1	+1	1.00	Agree
4	+1	+1	+1	1.00	Agree
4.Short answer questions					
1	+1	+1	+1	1.00	Agree
2	+1	+1	+1	1.00	Agree
3	+1	+1	+1	1.00	Agree
4	+1	+1	+1	1.00	Agree
5. Material Analysis Questions					
1	+1	+1	+1	1.00	Agree

Instrument 6 "Self-directed learning ability" questionnaire form, and the evaluation results are shown in the following table:

Item	Experts			IOC	Result	Suggestion
	1	2	3			
Self-adjustment ability assessment						
1	+1	+1	+1	1.00	Agree	
2	+1	+1	+1	1.00	Agree	
3	+1	+1	+1	1.00	Agree	
4	+1	+1	+1	1.00	Agree	
5	+1	+1	+1	1.00	Agree	
6	+1	+1	+1	1.00	Agree	
7	+1	+1	+1	1.00	Agree	
8	+1	+1	+1	1.00	Agree	
9	+1	+1	+1	1.00	Agree	
10	+1	+1	+1	1.00	Agree	
Self-management ability assessment						
1	+1	+1	+1	1.00	Agree	
2	+1	+1	+1	1.00	Agree	
3	+1	+1	+1	1.00	Agree	
4	+1	+1	+1	1.00	Agree	

5	+1	+1	+1	1.00	Agree	
6	+1	+1	+1	1.00	Agree	
7	+1	+1	+1	1.00	Agree	
8	+1	+1	+1	1.00	Agree	
9	+1	+1	+1	1.00	Agree	
10	+1	+1	+1	1.00	Agree	
Self-control ability assessment						
1	+1	+1	+1	1.00	Agree	1
2	+1	+1	+1	1.00	Agree	
3	+1	+1	+1	1.00	Agree	
4	+1	+1	+1	1.00	Agree	
5	+1	+1	+1	1.00	Agree	
6	+1	+1	+1	1.00	Agree	
7	+1	+1	+1	1.00	Agree	
8	+1	+1	+1	1.00	Agree	

Second submission IOC scoring (Instrument 3、 4)

Instrument 3 (part 1 The appropriate of the model):

Item	Experts			IOC	Result	Suggestion
	1	2	3			
1	+1	+1	+1	1.00	Agree	

Instrument 3 (part 2 The appropriate of the model):

	Item	Experts			IOC	Result	Suggestion
		1	2	3			
The POA and blended learning model components							
	1	+1	+1	+1	1.00	Agree	
	2	+1	+1	+1	1.00	Agree	
	3	+1	+1	+1	1.00	Agree	
	4	+1	+1	+1	1.00	Agree	
The POA and blended learning model process							
1	Process 1: drive	+1	+1	+1	1.00	Agree	
	Teacher	+1	+1	+1	1.00	Agree	
	Student	+1	+1	+1	1.00	Agree	
2	Process 2: Facilitate	+1	+1	+1	1.00	Agree	
	Teacher	+1	+1	+1	1.00	Agree	

	Student	+1	+1	+1	1.00	Agree
3	Process 3:Evaluation	+1	+1	+1	1.00	Agree
	Teacher	+1	+1	+1	1.00	Agree
	Student	+1	+1	+1	1.00	Agree
Integrity of the POA blended learning model						
	1	+1	+1	+1	1.00	Agree
	2	+1	+1	+1	1.00	Agree
	3	+1	+1	+1	1.00	Agree
	4	+1	+1	+1	1.00	Agree

Instrument 4 (Lesson plan) The evaluation results are shown in the following table

Item	Experts			Chinese content expert	Result	Suggestion
	1	2	3			
1	+1	+1	+1	1.00	Agree	
2	+1	+1	+1	1.00	Agree	
3	+1	+1	+1	1.00	Agree	
4	+1	+1	+1	1.00	Agree	
5	+1	+1	+1	1.00	Agree	
6	+1	+1	+1	1.00	Agree	

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