Cómo referenciar este artículo / How to Reference this Article
Wang, J.,& Jiang, M. (2025). Construction of a Faculty Development Model for Application-Oriented Undergraduate Universities in China Based on Educational Ecology Theory. *Foro de Educación*, 23(1), 198-218. doi: https://doi. org/10.14201/fde.23111

Construction of a Faculty Development Model for Application-Oriented Undergraduate Universities in China Based on Educational Ecology Theory

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Recibido / Received: 19/02/2025
Aceptado / Accepted: 26/04/2025

Abstract: In the context of application-oriented undergraduate Universities in China, faculty development programs are often generic and fail to address the specific needs of educators in application-oriented disciplines. The purpose of this study is to analyse the practices, challenges, and ecological aspects that influence the professional growth of faculty in universities. This study aims to elaborate on a faculty development model based on Educational Ecology Theory by incorporating multiple sources that influence the faculty's development process. The qualitative research design was used, and the primary data collection method was semi-structured interviews. Purposefully, 23 participants were selected, including faculty members, administrators from application-oriented undergraduate universities in China, and representatives of partner enterprises. Thematic analysis of the data leads to themes concerning the strengths and weaknesses of current development programmes and challenges faced, as well as the effect ecological factors had on faculty development. Current faculty development programmes are disengaged from the needs of current application-oriented disciplines, as shown by the study. There were time constraints, limited resources, and no tailored professional development. In addition, institutional policies, inflexible curricula, and resource constraints restrict the development of novel teaching practices. A context-specific, industry-relevant faculty development programme that integrates ecological factors is emphasised by the findings. Faculty in application-oriented disciplines must be well supported through flexible and tailored professional development opportunities, which should be backed by policymakers and universities.

Keywords: Faculty Development, Application-oriented Undergraduate Universities, Educational Ecology Theory, China.

1. Introduction

Rooted in an understanding of how learning and teaching processes are influenced by their surrounding environments, Educational Ecology Theory emphasises the interconnectedness of individuals, institutions, and wider societal systems in education (Levinson, Geron & Brighouse, 2022). Based on this theoretical framework, this study was intended to construct a model of faculty development at application-oriented undergraduate Universities in China that reflects the dynamic interactions among institutional policies, teaching environments, and professional growth practices. Based on Educational Ecology Theory, this study was intended to construct a model of faculty development at application-oriented undergraduate Universities in China.

1.1. Background Study

The case of faculty development in Chinese higher education has received much discussion for decades, with constant attempts to enhance the quality of teaching and learning. However, when it comes to developing good faculty training models for application-oriented Universities in China, which usually stress skill-based and practical knowledge, it presents itself with a few unique challenges (Zhang et al., 2021). More particularly to the case is the undergraduate universities, because they essentially prepare students to fill highly specialised roles in the workforce that include areas like engineering, technology, and business (Ahmad, 2019). Nevertheless, there has been a lack of tailored frameworks for faculty in these settings that focus on teaching quality and professional development (Poole, 2021).

Educational ecology offers an appealing paradigm for understanding the manifold relations within an educational system. In line with the educational ecology theory, the educational ecology theory is a holistic theory of looking at the professional development of faculty, and it centres on the interwoven or connected life of the learner, faculty and environment outside of the classroom (Tisdell, Merriam & Stuckey-Peyrot, 2025). In recent research, it is noted that both the internal (i.e., curriculum design, teaching methods) and external (i.e., institutional policies, societal expectations) factors need to be taken into consideration when it comes to the analysis of teaching practices and faculty development (Arnold & Norton, 2021; Wimpenny, 2022). However, few attempts have been made to apply this theory to the setting of the application-oriented undergraduate Universities in China.

The target of the model is to address the issues of institutions of this kind in providing effective professional development for their teaching staff (Xue, Yang & Umair, 2023). This research attempts to provide an overall, contextually relevant model of the factors for faculty growth by highlighting the environmental and contextual factors specific to the Chinese higher education context. Using semi-structured interviews with key stakeholders, the study gathered insights into the faculty development programmes being run currently, their issues, and their possible ways of improvement.

1.2. Problem Statement

With the development of faculty development in higher education (HE), particularly at application-oriented undergraduate institutions growing, there is a large gap in the literature on tailored models of faculty training to the unique context of Chinese application-oriented universities (Bhutoria, 2022). However, most existing models are overly generic and do not account for the unique ecological determinants present in teaching practices in these settings (Zhou, Rashid & Cheng, 2024). Moreover, there has been no efficient linkage between educational ecology and faculty development in previous studies. This disconnection is problematic, as being able to understand broader environmental influences on teaching can be used to develop more specific and effective strategies for professional development (Li & Mohammed, 2025). Since this implies a lack of context-specific models which include ecological theory in faculty development frameworks, it is a crucial issue that this study set out to address.

1.3. Aims and Research Objectives

The main objective of this study is to provide a faculty development model for the application-oriented undergraduate Universities in China based on Educational Ecology Theory. This study seeks to achieve the following qualitative research objectives:

- To explore the experiences and perceptions of faculty and educational leaders in application-oriented undergraduate Universities in China regarding current faculty development practices and challenges.
- To examine how the ecological factors within these universities (such as institutional policies, curriculum structure, and teaching environment) influence the professional development of faculty, and how these factors can be integrated into a faculty development model.

Using semi-structured interviews, these objectives were achieved to obtain more comprehensive insight into the lived experiences and the views of key stakeholders involved in faculty development within Chinese higher education.

1.4. Significance of the Study

There are several reasons why this study is important. It contributes to the body of knowledge about faculty development in Chinese higher education, especially for the application-oriented undergraduate Universities. As such, this study provides a uniquely situated framework for understanding how inner and outer factors combine to affect a faculty's growth in such institutions, based on Educational Ecology Theory, and easily cues the form of any faculty development model intended for those institutions.

In addition, findings from this study allow policymakers, university administrators, and for themselves, educators, to understand and develop more effective professional development programmes for application-oriented universities in China. The model developed through this research would then be put to practical use to promote improvement in teaching quality and student educational experience in such institutions. Additionally, a theory-driven approach employed in this study would also help contribute to the larger field of educational theory by shedding light on the utilisation of the ecological framework in faculty development.

2. Literature Review

Application-oriented undergraduate Universities in China have come to focus on developing effective faculty development models. The skill and vocational-based education provided by these institutions comes with its own set of challenges regarding the alignment of their faculty development programmes with the dynamic demand of the labour market and the tailored needs of students (Yuan et al., 2022). In this light, Educational Ecology Theory provides a vehicle for building a more nuanced, holistic, and thus more complete faculty development model (Luo & Chan, 2022). Based on the existing body of research on faculty development in higher education, particularly in application-oriented universities in China, this literature review discusses gaps in this study and outlines gaps that the existing body of research needs to address.

2.1. Faculty Development in Chinese Higher Education

Research on Chinese higher education faculty development has become a relatively hot topic lately, especially in the context of higher education reforms in the early 21st century. In China, there is a strong push to improve quality teaching, particularly for those application-oriented undergraduate institutions to train infrastructure supporting students for a specific career in technology, engineering and business (Liu & Trent, 2023). Most of these universities contend with the dual challenge of teaching academics at par with contemporary creations and agile, employment-ready education (Hadland, 2020). Therefore, faculty development programmes in these settings not only require knowledge of pedagogical skills but also incorporate industry-related knowledge and teaching skills.

Recently, there have been studies that the application-oriented universities' professional development programmes fit faculty's and students' needs. Consider Fan, Liu and Johnson (2020), who contend that traditional models of faculty development, which primarily emphasise content knowledge, are insufficient to accommodate the faculty's difficulties at work in an application-oriented context. These programmes should rather initiate teaching methodologies which are adaptable to real-world applications to combine both the knowledge from theoretical and practical approaches. Similarly, Zhang et al. (2024) indicate that professional development in Chinese universities has mainly been top-down and with limited provision for faculty to engage in collaborative and reflective practice. Although the implementation of standardised policies on the top-down approach is effective, this approach often falls short of taking into consideration the specific needs and voices of individual faculty in faculty development programs, thus minimising effectiveness and a low level of engagement.

2.2. Ecological Factors in Faculty Development

Ecological factors in faculty development have been gaining more awareness in education. According to Educational Ecology, teaching and learning are interrelated with different environmental factors such as institutional policies, curriculum design, community influences, and social beliefs (Liu & Trent, 2023). From this perspective, faculty are related to students in a complex, dynamic way, which is either part of their wider work environment, a job within a larger work environment, or both. Perera, Nayak and Nguyen (2023) and Scott et al. (2023) have recently pointed out in their studies that institutional policies and the teaching environment influence novice faculty's development in Chinese universities. Factors that affect faculty's continuous learning and improving the teaching practice are the availability of professional development resources, flexibility in curriculum, and administrative support (Gudadur, 2023).

Especially in the context of specific application-oriented undergraduate universities in China, ecological factors are very important to equate their programmes with industry needs and technological development. Fang, Zhang and Kim (2021) contend that faculty in the fields of engineering and business need must remain abreast with tun industry trends and new pedagogical methods. This is an environment which requires have supportive and flexible environment for faculty to have the opportunity to adapt

quickly and accordingly if necessary (Grannäs, Frelin & Östlin, 2025). Additionally, the ecological picture forwards the need for symbioses or collaborations between faculty, administrators, and industry partners that result in a more conducive and responsive faculty development ecosystem (Jiang, 2024).

2.3. Theoretical Framework

In Educational Ecology Theory, which serves as a theoretical framework for this study, educational ecology theory offers a comprehensive lens for examining the interdependence of the factors affecting faculty development. The Educational Ecology Theory posits that the educational system is constituted of one system and is a network of various pieces, such as the faculty, the learner, the curriculum, the institution and the wider social environment (Zhao, 2025). The theory is that the changes in one part of the system can ripple through the whole system so that teaching practices and learning outcomes are changed.

Like all theories, this theory also states that the faculty's growth is not solely affected by personal factors, such as personal motivation and teaching ability, but it is also influenced by the overall ecological environment. For instance, the faculty's capacity to put in place and implement effective teaching strategies would not only hinge on the enabling environment within the school (i.e. in terms of the organisational culture of the university, the quality of administrative support, the availability of professional development opportunities) but also on the nature of the teaching strategies by themselves. Based on this theory, this study intends to explore how these different factors affect the faculty development process in application-oriented undergraduate Universities in China.

In the literature, the application of educational ecology to faculty development has gained attention in recent years. According to Van Orman, Gotch and Carbonneau (2025), researchers have used ecological frameworks to examine how systemic factors like institutional culture, resource allocation, and professional development opportunities impact faculty growth. From the perspective of Chinese application-oriented undergraduate universities, Educational Ecology Theory provides a more holistic view of how these reciprocal multiple factors influence faculty development and how a corresponding model can be created to work on these reciprocal multiple factors.

2.4. Research Gap

Currently, there is a large body of literature related to university faculty development in general and yet gaps still exist in particular on the specific needs of the application-oriented undergraduate university. But first, little research exists regarding how ecological factors affect faculty development in such settings. However, most of the existing studies are in general universities or do not consider other ecological factors which affect teaching practices (Fan et al., 2020). While there is some research on professional development in Chinese universities, there has been a limited attempt to link ecological factors, including institutional policy and environmental support, with the outcomes of faculty development.

Second, there are no widely adopted, specific models of faculty development

for application-oriented undergraduate universities. The research by Jiang (2024) and Fang et al. (2021) has remarked that existing models usually neglect the real needs of vast industry-involved application-oriented university faculty. Because of this, the training that faculty may receive in these institutions may not be significantly related to their teaching contexts or relevant to the training needs of the industry.

In addition, while Educational Ecology Theory has been widely deployed in other educational settings, its deployment in developing models of faculty training for those application-oriented undergraduate universities in China should be less explored. This theory provides a novel basis for explaining how the teaching environment, institutional policies, and other ecological variables coordinate in determining faculty development. This study seeks to offer a more theoretical, theory-based approach to faculty development in Chinese application-oriented undergraduate universities and breaks new ground on the theoretical side of educational ecology and the practical side of faculty training models.

3. Research Methodology

Compared with other methodologies, a qualitative research method is taken in this study, accompanied by semi-structured interviews, which are used to develop a faculty development model for China's application-oriented undergraduate Universities based on Educational Ecology Theory. Considering the complexity and context-related nature of the subject, qualitative methods provide detailed insights into the experiences, perceptions and challenges faced by educators in this setup. The flexibility of this semi-structured interview approach offers an opportunity to explore further dimensions of the issue, but a structured approach points out the technique to be used consistently across the interviews. This portion of the paper defines the research design, how the data was compiled, and the methodology that is utilised in the data analysis, as well as any ethical considerations associated with the study.

3.1. Research Method and Design

Qualitative is the research method adopted for this study because the qualitative method involves the collection of primary data through semi-structured interviews. For the study's aims, this design is particularly appropriate since it delivers a highly understandable perspective on the participants' lived experiences when it comes to faculty development at application-oriented undergraduate Universities. Since complex, context-dependent phenomena such as faculty development are difficult to investigate through a structured interview, semi-structured interviews are a good tool to explore them. The interviews can achieve what a structured interview cannot perform—allowing the participants to provide detailed answers while at the same time making sure the study responds to specific research questions (Roni, Merga & Morris, 2020). As semi-structured interviews are flexible, they can delve deeply into matters like institutional support, teaching practices, and the influence of external circumstances on the development of faculty, all of which are needed to gain an understanding of the ecological perspective.

Qualitative research has been employed largely in educational settings to discover

subjectivity and knowledge of complex issues, especially in developing faculty (Silverman & Patterson, 2021). This method allows the researcher to access a better understanding of the effect of ecological factors, institutional culture, administrative support, and professional development opportunities on faculty's professional growth and professionalism at Chinese application-oriented undergraduate Universities (Bueno & Ramos, 2023).

3.2. Data Collection Method

In this round of data collection, a total of 23 participants were interviewed, including university faculty members, administrators, and enterprise representatives, all of whom are directly involved in the implementation of industry-education integration in Jiangsu Province. The selection ensured representation across different institutional roles and development stages of applied universities. Interviews were conducted from March to May 2025. Most interviews were held face-to-face on campus, while a few were conducted via secure online platforms due to participants' availability. To ensure data quality, all interviews followed a consistent protocol based on the refined interview guide. Participants were provided with a brief overview of the research aims and ethical procedures before the interview began. Each session was digitally recorded, with prior consent, and later transcribed verbatim. The transcriptions were anonymised and securely stored.

3.2.1. Target Population

This study targets faculty members, administrators, and representatives of partner enterprises from application-oriented undergraduate universities in China as its population. Faculty, however, are considered key stakeholders in the faculty development process because they are directly associated with educational programme design and implementation as well as the professional development of faculty. The study thus conducts itself on these groups to provide diversity in perspectives of the challenges and opportunities that are faced in faculty development in the application-oriented universities. Taking a comprehensive view, faculty's experiences, program leaders' strategic perspectives, and administrators' policy-making roles are highlighted in these factors that shape faculty development in these institutions.

3.2.2. Sampling Technique

This study employed a purposive sampling technique to identify and select participants who possessed direct experience and insight into the implementation of university–industry collaboration in application-oriented undergraduate institutions. Purposive sampling, also referred to as judgmental or expert sampling, is commonly used in qualitative research to ensure that information-rich cases are included, thereby increasing the relevance and depth of the data collected (Naz, Gulab & Aslam, 2022; Ruslin et al., 2022). In the context of this study, three representative application-oriented universities in Jiangsu Province were selected, each at a different stage of development—from early-stage transformation to mature integration of industry collaboration. Although all institutions are based

in Jiangsu, their internal structures, strategies, and developmental stages ensure diversity in the data, while their geographical coherence strengthens the contextual comparability. This sampling strategy not only ensures the inclusion of typical cases but also enables the study to capture variations across different stages of institutional development, enhancing the applicability and theoretical contribution of the findings.

3.2.3. Samples

The sample selection was guided by Educational Ecology Theory, emphasising the dynamic interaction among individuals, institutions, and external environments to ensure diversity and representativeness of data (Naz et al., 2022). The sample size followed the principle of data saturation (Kovacs & Le Mens, 2024): Initial coding was conducted after every 5–6 interviews; if no new themes emerged in three consecutive interviews, saturation was considered reached. Saturation was assessed separately for each participant group, and interviews ceased when the final two participants added no new information. Theoretical coverage was ensured across individual, organisational, industry, and policy dimensions.

A total of 23 participants were interviewed: 9 university administrators (coded as D1–D9) from teaching development centers, industry colleges, or human resources departments, all of whom had led major university–enterprise collaboration projects within the past three years; 9 frontline university teachers (coded as T1–T9) who had either led enterprise-funded projects or accumulated more than six months of industry work experience; and 5 enterprise representatives (coded as M1–M5) from companies engaged in annual cooperation worth over RMB 500,000 or co-established joint training bases, all of whom held executive or key functional positions.

3.2.4. Data Collection Tool

In this study, data were collected through both online and face-to-face semi-structured interviews. Before the formal interviews, researchers built rapport with participants by briefly introducing the study and ensuring confidentiality to create a relaxed atmosphere (Beresford et al., 2022; Hemmler et al., 2022). Participants were informed about the interview purpose, audio recording, and data use, and written consent was obtained (Dessler, 2020). Each interview lasted 40–60 minutes and was recorded with consent. The recordings were transcribed into Word documents, anonymised, and edited to remove filler words while preserving original meaning. Transcripts followed the interview guide structure for consistency and were returned to participants for accuracy checks (Creswell, 2021).

3.3. Data Analysis Method

Thematic analysis, a frequently used method in qualitative research for deriving and analysing patterns within the data (Squires, 2023), was used to examine the data. The thematic analysis is suitable for exploring the meanings of gaps and textural dimensions of qualitative data through the researcher's identification of the main themes that address the research objectives. The steps of this method

include transcribing the interview data and coding to identify themes that recur across ecological factors that influence teaching. Now that these themes have been identified, they were organised into individual categories which correspond with the various components of the ecological model: institutional policy, curriculum design, faculty experiences, and external support systems. The study applies thematic analysis to explore both explicit and implicit factors influencing application-oriented university faculty development to construct a model that represents these findings.

3.4. Ethical Considerations

Any research involving human participants must have ethical considerations to the utmost. This study followed guidelines when it came to the ethical principles of informed consent, confidentiality, and participant well-being. All the interviewees were given an information sheet, which explained the purpose of the research, their roles in participating in it and their rights as participants. All participants were given informed consent, namely that their participation is voluntary, and that they have the right to withdraw at any time with no consequences. The interview was taking place in a friendly and respectful manner to allow participants to express themselves.

The data, as well as the interview transcripts, were secured and can be accessed only by the research team and all identifying information was removed from the interview transcripts. The results were also reported on a group level only, making it impossible for individual responses to be further traced to individual participants. The research procedures are intended to ensure that all the procedures happen according to ethical standards that have been put in place in terms of educational research (Silverman & Patterson, 2021).

4. Data Analysis

The data analysis in this study focuses on interpreting the responses collected from semi-structured interviews with faculty members, administrators, and representatives of partner enterprises from application-oriented undergraduate universities in China. To meet the objectives, the responses were analysed through thematic analysis, which identified key patterns and themes of the practices of faculty development, challenges and ecological factors that influence professional growth in those institutions. The interview responses are taken up into several themes that relate to the two main research objectives. These themes developed out of the participant responses, which offered a wide perspective of the challenges and opportunities at hand in ecological teaching development.

4.1. Development of Themes

Table 1 shows that the Research Objectives 1 (RO1) themes are based on current practices, challenges, and their correspondence to institutional goals, on faculty development practices. Themes for Research Objective 2 (RO2) include ecological themes related to institutional policies, curriculum structures and the teaching environment on professional development.

Themes associated with each of the research objectives were developed by analysing the patterns of the interview responses.

Table 1: Themes.

Research Objective 1: Faculty Development Practices and Challenges	Research Objective 2: Ecological Factors Influencing Faculty Development
4.2.1. Strengths and Weaknesses of Faculty Development Programs	4.3.1. Impact of Institutional Policies on Professional Development
4.2.2. Challenges in Professional Development	4.3.2. Influence of Curriculum Structure and Resources
4.2.3. Alignment with Student Needs and University Goals	4.3.3. Integration of Ecological Factors in Faculty Development

4.2. Faculty Development Practices and Challenges

4.2.1. Strengths and Weaknesses of Faculty Development Programs

Participants responded that the currently application-oriented universities in China's faculty development programmes have both strengths and weaknesses. Some of the positive points noted by some participants included seminars and structured workshops, as in D1, who highlighted practical workshops. Yet, these programmes rarely fulfil the specific needs of application-oriented disciplines, and there was a strong consensus that this was the case.

Table 2: Responses.

T2: *"While the university provides decent training opportunities, they are often generic and don't cater to the specific demands of applied programs."*
T5: *"The programs are well-structured but tend to focus more on theory than practical skills, which is less helpful for applied university teaching."*
D4: *"I find the programs to be useful but limited in scope, and there's no follow-up or continuous development after the initial training."*
M2: *"The training programs are relatively well integrated with enterprises and focus on production processes; however, they lack programs that keep pace with the latest industry trends."*

From Table 2, it can be seen that T2 stated that the training is usually too general, and T5 noted that the focus is theoretical and, what is more, does not have a practical and industry-related approach. D4 agreed that the programmes were well structured, though not far enough to draw faculty in for ongoing support after the initial training. M2 believes that the training content does not keep up with the latest industry developments. One weakness that stood out from the responses was the discrepancy between theory and practice, in particular, the lack of preparation for the rigours of the application-oriented fields in which students deserve more industry-aligned teaching by hands-on means. Overall, the programmes provide the content but do not provide continual, relevant development for the experienced problems that faculty are handling in (application-oriented) universities.

4.2.2. Challenges in Professional Development

Discussion was also wide and far-ranging regarding the challenges to professional development in application-oriented universities. A major motivating factor was given as time constraints in many of the responses.

Table 3: Responses.

T1: *"Limited time for professional development and lack of tailored resources for specific subjects. More practical, job-relevant programs could help."*
T4: *"The biggest challenge is balancing teaching duties with development opportunities. Having flexible, self-paced learning options would help."*
D3: *"Funding and time constraints make it difficult to attend development programs. More accessible online courses could alleviate this."*
D6: *"Teaching, research, and student management leave little time for growth; more time for development is needed."*

From Table 3, it can be seen that T1 and T4 shared the challenge of time that faculty had to dedicate to meaningful professional development, and T1 also noted the balancing act of fitting in professional development time. D3's comment also mirrors this challenge of the difficulty of accessing development programmes due to inadequate financial support and resources. Participants were asked how more flexible, accessible development opportunities could help win over the young urban professionals. According to D6, teaching, research, and student management often take priority over professional development, leaving faculty with limited time for growth activities. Additionally, the initiative for more degree-applicable and job-specific development programmes was common. Participants suggested that the lessons that development programmes must impart should be relevant to the framework of application-oriented disciplines, teaching knowledge and pedagogical strategies that are easily applied in the classroom.

4.2.3. Alignment with Student Needs and University Goals

Regarding alignment, the responses of the participants indicated that there is no alignment between faculty development programmes with the needs of the students and the general objectives of the universities.

Table 4: Responses.

T3: *"They don't always align well, especially in applied fields. Programs should focus more on practical teaching methods and industry knowledge."*
T4: *"Development programs seem to focus on theoretical aspects, while our students need teachers who are prepared for practical, real-world scenarios."*
D5: *"These programs cover basic teaching principles but can improve by better aligning with skills students need for future careers."*
M3: *"Development programs don't always match the applied university curriculum. We need more industry-specific training that reflects students' practical needs."*

In Table 4, several participants observed that faculty development in general rarely emphasises industry-specific needs. This notion was substantiated by T4, who shared that the development programmes do not provide faculty with the necessary practical skills to teach students who end up in the workforce. In her third example, D5 mentions the absence of real-world applications in development programmes and states that there is a discussion of teaching methods, but these methods lack real-life applicability to the challenges students face. M3 also raised the need for a curriculum that is more closely aligned with students' career goals and suggested that faculty development should be related to students' career preparation. The consensus was

that faculty development must advance to keep pace with the practitioner's needs of students, particularly the former in the application-oriented fields and on the university's institutionalisation of professional development programmes as a part, for example, of an educational objective.

4.3. Ecological Factors Influencing Faculty Development

4.3.1. Impact of Institutional Policies on Professional Development

The professional development of the faculty in application-oriented undergraduate universities is mainly influenced by institutional policies.

Table 5: Responses.

T1: *"Policies on research and teaching leave little room for professional development. Greater administrative support and time allocation for training would be beneficial."*
D2: *"Support for faculty development varies across departments—some offer strong programs, while others lack sufficient resources and incentives."*
D3: *"Policies often prioritise research over teaching. Greater administrative support for teaching-focused development would improve overall quality."*
M1: *Some departments provide solid training programs, but often lack resources and incentives, hindering the effective development of application-oriented talents needed by enterprises.*

From Table 5, it can be seen that one of the participants, T1 and D3, confirmed that administrative policies tend to focus more on research than teaching, giving less scope for professional development. D2 also agreed with this view, as the level of support for faculty development is highly inconsistent across departments. A recurring problem was the lack of a standardised manner of professional development at the institutional level. Policies were also not considered to have always accounted for the needs of the application-oriented disciplines. For example, M1 points out that the lack of resources and incentives in training makes it difficult to effectively cultivate application-oriented talents. As institutional policies exist to support professional growth, the responses suggest that the policies do not necessarily evolve into an environment for supporting faculty development, which is prioritised and integrated into daily academic practices.

4.3.2. Influence of Curriculum Structure and Resources

It is argued that the curriculum structure and available resources were significant ecological factors that influenced faculty development.

Table 6: Responses.

T2: *"The curriculum is rigid, and resources are difficult to use effectively. Increased flexibility and improved resource utilisation would support development."*
T7: *"The teaching environment fosters innovation, yet limited resources constrain the adoption of new methods. Enhanced technology investment is necessary."*
D4: *"While support for innovation is present, a shortage of resources hinders the implementation of new methods. Investment in technology is crucial."*
M3: *"The curriculum is inflexible and lacks resources, failing to meet the needs of enterprises. Greater support in technology and resources is required to align training with industry standards."*

From Table 6, it can be seen that there is a concern brought up by T2, who stated that it is about the rigidity of the curriculum, which makes it impossible for faculty to engage in innovative teaching methods. Consequently, this rigidity renders faculty increasingly powerless in their ability to make room to learn professionally, which is reflective of the changing conditions of students. T7 mentions that faculty working in the fields involve themselves in application-oriented learning, and they need access to industry-related things and teaching materials, which is very tough to achieve because of the constraints at the institutions. D4 and M3 pointed out that investment in technology is crucial, and that increasing investment in technology and resources is needed to align training with industry standards. This problem is made worse by the lack of updated resources to assist in supporting the curriculum already in place. The inability of faculty to effectively teach students using resources in preparing them for careers in rapidly changing industries is due to the lack of resources. In summary, the responses indicated that the curriculum structure and provided resources should be better aligned with the aims of application-oriented education, to assist faculty's professional development more.

4.3.3. Integration of Ecological Factors in Faculty Development.

They were then asked how this integration of ecological factors like institutional policies, curriculum design and the teaching environment in faculty development models could be improved.

Table 7: Responses.

D1: *"Integrating more industry partnerships and updating policies to provide time for professional development would better support teachers."*
D2: *"By aligning curriculum goals with real-world demands and offering ongoing administrative support, the university can better facilitate teacher development."*
M1: *"Creating more opportunities for interdisciplinary collaboration and adjusting institutional policies to prioritise teaching development would enhance professional growth."*
M3: *"A more flexible curriculum that allows teachers to experiment with new teaching methods, combined with institutional policies that support continuous learning, would be effective."*

From Table 7, the responses suggest that a context-specific, more holistic approach is needed. The other D1 suggested that universities ought to create more flexible policies that enable more involvement of faculty in professional development. It involves giving time for development activities that do not interfere with teaching responsibilities. Industry and academia should work more closely, D2 suggested, and faculty development programmes should be determined by trends and challenges in the industry. M1 and M3 pointed out that more resources are needed, and more flexibility in the curriculum is necessary. M1 suggested that the cases of the teaching process at universities could be better if universities integrated real-world application studies and industry collaborations into part of the curriculum content so that faculty are more prepared for the practical teaching requirement. These views of T5 support the fact that ecological factors should be considered in designing the model of faculty development; institutional policies and the teaching environment, together with curriculum design, should work to contribute to the continuous development of the faculty. There was a consensus amongst the participants that faculty development

programmes should be more flexible and responsive to the needs of the faculty, the student and the industry.

The integration of ecological factors into faculty development programmes in application-oriented universities is vital for a more effective, contextually relevant approach to professional growth, since the sentiment of any analysis of participant responses is that faculty development programmes are not well established. The main implication is that institutions should focus on ensuring policies, the curriculum, and teaching environments are aligned with the needs of both faculty and students for effective and sustainable development of faculty.

5. Discussion, Conclusion, and Recommendations

The Educational Ecology Theory served as the foundation of the construction of an application-oriented faculty development model for application-oriented undergraduate Universities in China. It aimed to explore faculty development practices, challenges and ecological determinants of professional growth. The findings of semi-structured interviews provide key themes about the strengths and weaknesses of current faculty development programmes, the effect of institutional and curriculum policy, the teaching environment and how they can be integrated into a comprehensive development model. In this section, the findings are discussed in a conclusion together with recommendations for educators, policymakers and suggestions for further research.

This study addressed the problem of the lack of a context-specific faculty development model which can be used to cater to the needs of application-oriented undergraduate Universities in China. However, in the field of application-oriented fields as an educator, only a small effort is made to understand how ecological factors, such as institutional policies, curriculum structure, and teaching environment, impact the professional development of practising educators. In addition, most existing models of faculty development are generic and do not comply with the requirements of faculty working in application-oriented universities, where the teaching process is mediated by the industry and practice requires the development of acquired, application-oriented competencies.

A qualitative research methodology was used in the study, aided using semi-structured interviews as the main tool for data collection. Through the semi-structured approach, it was feasible to delve deeper into the participants' experiences and senses of faculty development in the application-oriented undergraduate Universities at the time. Purposive sampling of 23 participants—including faculty members, administrators, and representatives of partner enterprises from application-oriented undergraduate universities in China—was conducted to obtain diverse perspectives on the topic. Through thematic analysis of the interviews, recurring themes were identified and key findings of the programmes of faculty development were elicited from this, including the strengths and weaknesses of the programmes currently in place, as well as ecological factors that influence faculty growth.

5.1. Discussion of the Results

This study finding matches the previous research on the development of faculty within higher education, in application-oriented universities. Fan et al. (2020) pointed out that the current faculty development programmes in Chinese higher education

aimed at application-oriented disciplines fall short of the needs of application-oriented disciplines that need more practical and industry-oriented approaches in teaching. Like Zhang et al. (2024), they also pointed out that faculty training programmes and the actual demand of students in the application-oriented fields are largely disconnected. Secondly, this finding is consistent with the previous studies in other contexts (Fang et al., 2021; Scott et al., 2023) in terms of faculty development, which is concerned with these issues of time constraints and resource limits.

The literature also explores how institutional policies and curriculum design affect the development of faculty. For example, as Zhang et al. (2024) noted, the more ready these institutional policies are to support faculty's development, the better the conditions for professional growth. The findings in terms of the rigidity of the curriculum and shortage of industry-specific resources are also consistent with the prior studies by Perera et al. (2023), wherein they suggested more dynamic and adaptable curricula capable of accommodating both faculty and students in the application-oriented undergraduate universities.

According to these results, there are several critical issues in faculty development in Chinese application-oriented undergraduate Universities. The findings show one of the disconnects between the content of faculty's development programmes and the needs of students (practice-oriented, industry-based). Faculty in application-oriented universities commonly struggle to have their students ready for careers in such fields as technology, engineering and business, although most of their professional development courses focus on general pedagogical skills less related to what it means to teach in these highly specialised fields. This gap provides an opportunity to develop more context-specific and industry-relevant faculty development programmes that match the objectives of an application-oriented education.

A second important finding concerns the influence of institutional policies on faculty development. However, the study also found that policies and support for administrative development are not standardised across departments, with some universities having more extensive development programmes than others. The lack of this consistency indicates that faculty development needs to be moved to an integral place in the university's mission within an articulated and more consistent set of policies. Additionally, the rigidity of the structure of curricula, and limited resources for support of faculty continued growth and development, limits faculty relationships with their professional development. Thus there is a need to develop curricula that are more iterative and flexible allowing for creativity and making space for applied learning. Additionally, the disconnection of environmental factors - institutional policies, curriculum, and curriculum design, and teaching space - indicates a need for a more integrated approach to faculty development. Universities need to begin thinking collaboratively about how these areas are aligned to develop a more supportive context for faculty ongoing development.

5.2. Summary of Main Results

The analysis highlighted a number of significant findings regarding the faculty development practices and the ecological factors pertinent to these practices. Participants also pointed to the strengths and weaknesses of existing faculty development programs in the application-oriented institutions. Respondents reported that the positives of faculty development in their institutions included structured

workshops or sometimes practical components, but these do not meet the needs of the application-oriented disciplines. Common weaknesses that were present included inadequate ongoing support after on-the-job training, and lack of 'real life' (applicable) action after training. Possible challenges to professional development that they attested to included time constraints, inadequate resources, and the absence of appropriate tailored training based on the immediate needs of industry. The participants had difficulty balancing their teaching responsibilities with development programs, and some suggested what they described as generic, one fits all training models failed to account for their specific needs pertaining to application-oriented disciplines.

Under the category of ecological factors, the study notes that institutional policies and administrative support varied among departments; some institutions have at least somewhat viable pathways for development while it could be presumed that other institutions would have very little. The inflexibility in the curriculum structure and the lack of resources, in this regard, also presented difficult barriers for faculty innovation and professional development. In addition to institutional policies about faculty development, all curricular decisions in addition to the design of the teaching space at the institution were also fragmented.

5.3. Recommendations for Educators and Policymakers

According to the findings, some recommendations can be made for educators and policymakers in the field of application-oriented undergraduate Universities in China. First of all, the structure of faculty development programmes must account for the types of disciplines the faculty are being developed for. The projects must support faculty in developing useful practices and resources that relate to that practice and could be utilized in the classroom. Continuing education needs to be affordable, therefore it should be an attractive option for faculty, it needs to acknowledge their flexibility around their time and it must be accessible to allow faculty to develop without taking them away from their teaching.

In addition, universities need to be more proactive in stating that they encourage faculty development as a strategic goal and connect the work with their mission. In this case, this could be defined by the degree to which they are providing administrative support for faculty development, the amount of time, if any, during the year the faculty is allocated for professional development or if they regard their policies as being uniform within the department. Faculty development should require administrative funding and having access to technology which allows the faculty to stay abreast of innovating activities and ensure practitioners are supporting the faculty in developing the quality of their practice. In closing, what is needed is a more integrated model for faculty development; one that is supported by policies of the institution, curriculum design, and teaching space to enable faculty development. Universities should establish a culture of collaboration with departments, industry partners and faculty to design programs that are not one-off events, but rather meaningful and enduring in the long term.

5.4. Implications of Research and Practice

The ramifications of this research are significant both theoretically and practically. By utilizing an Educational Ecology Theory approach to the issue of faculty development in application-oriented universities, the research helps advance the educational theory

domain. The research highlights the role and influence of ecological variables including institutional policy, curriculum, and academic context to faculty development, and so takes a holistic view to illustrate the role of these aspects in faculty growth. It could potentially contribute to the development of future models for faculty development in application-oriented universities, as well as in other similar educational contexts. Practically, the findings demonstrate that faculty development in application-oriented universities should not be a traditional one-size fits all training programme, and to properly address faculty preparation needs in application-oriented disciplines, policymakers and educators should collaborate together to develop not only industry-specific and context-specific, but also flexible training programmes.

5.5. Suggestions for Further Research

Though this study contributes to the elucidation of the faculty development landscape of Chinese application-oriented universities, there is still a need for more research. Future studies may analyse how robust faculty development programmes are at the application-oriented universities in training faculty to meet such environmental demands. Furthermore, the research could analyse the role of industry partnerships in faculty development, treating the subject of collaboration between universities and industries to boost faculty training. An additional possible area of research is how institutional culture affects faculty development in connection with the impact of leadership and administrative support on the professional growth of educators.

5.6. Limitations

Although this study has made certain explorations in theoretical construction and empirical analysis, several limitations remain that warrant improvement and expansion in future research: First, the sample scope is somewhat limited. This study employed purposive sampling to select three application-oriented undergraduate universities at different stages of development in Jiangsu Province as case studies. While these samples have a certain degree of representativeness, they are insufficient to fully reflect the overall situation of faculty development under industry-education integration across different regions and types of application-oriented universities nationwide. Therefore, the generalizability and external validity of the findings are limited. Second, the data mainly come from semi-structured interviews, which, although helpful in deeply exploring the authentic views and experiences of respondents, still have issues such as high subjectivity and a limited sample size, potentially affecting the comprehensiveness and objectivity of the analysis. Future research could attempt to incorporate multiple methods, such as surveys, classroom observations, and bibliometric analysis, to achieve data triangulation and supplementation, thereby providing a more comprehensive picture of faculty development in application-oriented universities.

References

Ahmad, T. (2019). Scenario based approach to re-imagining future of higher education which prepares students for the future of work. *Higher Education, Skills and Work-based Learning, 10*(1), pp. 217-238. doi: https://doi.org/10.1108/HESWBL-12-2018-0136

Arnold, L. & Norton, L. (2021). Problematising pedagogical action research in formal teaching courses and academic development: a collaborative autoethnography. *Educational Action Research, 29*(2), pp. 328-345. doi: https://doi.org/10.1080/09650792.2020.1746373

Beresford, M., Wutich, A., du Bray, M. V., Ruth, A., Stotts, R., SturtzSreetharan, C., et al. (2022). Coding Qualitative Data at Scale: Guidance for Large Coder Teams Based on 18 Studies. *International Journal of Qualitative Methods, 21*, pp. 16094069221075860. doi: https://doi.org/10.1177/16094069221075860

Bhutoria, A. (2022). Personalized education and Artificial Intelligence in the United States, China, and India: A systematic review using a Human-In-The-Loop model. *Computers and Education: Artificial Intelligence, 3*, pp. 100068. doi: https://doi.org/10.1016/j.caeai.2022.100068

Bueno, D. C. & Ramos, J. (2023). Enhancing Graduate Students' Competencies in Corporate Planning and Management: A Case Study. *Institutional Multidisciplinary Research and Development Journal, 6*, pp. 51-61. Retrieved from https://files.eric.ed.gov/fulltext/ED643286.pdf

Creswell, J. W. (2021). *A Concise Introduction to Mixed Methods Research*. SAGE Publications.

Dessler, G. (2020). *Fundamentals of Human Resource Management*. Pearson.

Fan, X., Liu, X. & Johnson, R. L. (2020). A mixed method study of ethical issues in classroom assessment in Chinese higher education. *Asia Pacific Education Review, 21*(2), pp. 183-195. doi: https://doi.org/10.1007/s12564-019-09623-y

Fang, B., Zhang, P. & Kim, S. (2021). National human resource development in China: government–industry–university relations and roles. *European Journal of Training and Development, 47*(1-2), pp. 183-202. doi: https://doi.org/10.1108/EJTD-07-2021-0110

Grannäs, J., Frelin, A. & Östlin, T. (2025). Unpacking flexibility in innovative learning environments - teachers' experiences in practice. *Educational Studies*, pp. 1-17. doi: https://doi.org/10.1080/03055698.2024.2448781

Gudadur, S. S. (2023). A Study on Effective Strategies for Ongoing Faculty Training and Development: A Comprehensive Study. *Pangaea International Journal of Advanced and Applied Research, 1*(11), pp. 15-29.

Hadland, J. E. (2020). *Contemporary Journalism Education and the Employability Agenda in Scotland's Universities* (Doctoral dissertation, University of Stirling). Retrieved from https://hdl.handle.net/1893/32391

Hemmler, V. L., Kenney, A. W., Langley, S. D., Callahan, C. M., Gubbins, E. J. & Holder, S. (2022). Beyond a coefficient: an interactive process for achieving inter-rater consistency in qualitative coding. *Qualitative Research, 22*(2), pp. 194-219. doi: https://doi.org/10.1177/1468794120976072

Jiang, L. (2024). Factors influencing EFL teachers' implementation of SPOC-based blended learning in higher vocational colleges in China: A study based on grounded theory. *Interactive Learning Environments, 32*(3), pp. 859-878. doi: https://doi.org/10.1080/10494820.2022.2100428

Kovacs, B. & Le Mens, G. (2024). Working at the frontier: An interview with Michael Hannan. *Available at SSRN 4821079*. doi: https://doi.org/10.2139/ssrn.4821079

Levinson, M., Geron, T. & Brighouse, H. (2022). Conceptions of Educational Equity. *AERA Open, 8*, pp. 23328584221121344. doi: https://doi.org/10.1177/23328584221121344

Li, Q. I. N. & Mohammed, L. A. (2025). The Key Elements About How to Improve English Language Educators' Teaching Competence through Continuous Professional Development (CPD). *Journal of Ecohumanism, 4*(3), pp. 117-139. doi: https://doi.org/10.62754/joe.v4i3.5877

Liu, X. & Trent, J. (2023). Being a Teacher in China: A Systematic Review of Teacher Identity in Education Reform. *International Journal of Learning, Teaching and Educational Research, 22*(4), pp. 267-293. doi: https://doi.org/10.26803/ijlter.22.4.14

Luo, J. & Chan, C. K. Y. (2022). Influences of shadow education on the ecology of education – A review of the literature. *Educational Research Review, 36*, pp. 100450. doi: https://doi.org/10.1016/j.edurev.2022.100450

Naz, N., Gulab, F. & Aslam, M. (2022). Development of Qualitative Semi-Structured Interview Guide for Case Study Research. *Competitive Social Science Research Journal, 3*(2), pp. 42-52. Retrieved from https://cssrjournal.com/index.php/cssrjournal/article/view/170

Perera, C. H., Nayak, R. & Nguyen, L. Thang V. (2023). The impact of social media marketing and brand credibility on higher education institutes' brand equity in emerging countries. *Journal of Marketing Communications, 29*(8), pp. 770-795. doi: https://doi.org/10.1080/13527266.2022.2086284

Poole, T. L. (2021). *Effective online professional learning and development for in-service teachers: a conceptual framework of design considerations* (Doctoral dissertation, University of Southern Queensland). doi: https://doi.org/10.26192/q713x

Roni, S. M., Merga, M. K. & Morris, J. E. (2020). *Conducting Quantitative Research in Education*. Springer. doi: https://doi.org/10.1007/978-981-13-9132-3

Ruslin, Mashuri, S., Rasak, M. S. A., Alhabsyi, F. & Syam, H. (2022). Semi-structured Interview: A Methodological Reflection on the Development of a Qualitative Research Instrument in Educational Studies. *IOSR Journal of Research & Method in Education (IOSR-JRME), 12*(1), pp. 22-29. doi: https://doi.org/10.9790/7388-1201052229

Scott, T., Guan, W., Han, H., Zou, X. & Chen, Y. (2023). The Impact of Academic Optimism, Institutional Policy and Support, and Self-Efficacy on University Instructors' Continuous Professional Development in Mainland China. *SAGE Open, 13*(1), pp. 21582440231153339. doi: https://doi.org/10.1177/21582440231153339

Silverman, R. M. & Patterson, K. (2021). *Qualitative Research Methods for Community Development*. Routledge. doi: https://doi.org/10.4324/9781003172925

Squires, V. (2023). Thematic Analysis. In J. M. Okoko, S. Tunison, & K. D. Walker (Eds.), *Varieties of Qualitative Research Methods: Selected Contextual Perspectives* (pp. 463-468). Springer International Publishing. doi: https://doi.org/10.1007/978-3-031-04394-9_72

Tisdell, E. J., Merriam, S. B. & Stuckey-Peyrot, H. L. (2025). *Qualitative Research: A Guide to Design and Implementation*. John Wiley & Sons.

Van Orman, D. S. J., Gotch, C. M. & Carbonneau, K. J. (2025). Preparing Teacher Candidates to Assess for Learning: A Systematic Review. *Review of Educational Research, 95*(3), pp. 427-463. doi: https://doi.org/10.3102/00346543241233015

Wimpenny, K. (2022). Foreword by Prof. Katherine Wimpenny. *Lecture Notes in Educational Technology*, pp. vii-ix. Retrieved from https://www.scopus.com/pages/publications/85127212367

Xue, C., Yang, T. & Umair, M. (2023). Approaches and Reforms in Undergraduate Education for Integration of Major and General Education: A Comparative Study among Teaching, Teaching—Research, and Research Universities in China. *Sustainability, 15*(2), pp. 1251. doi: https://doi.org/10.3390/su15021251

Yuan, R., Lee, I., De Costa, P. I., Yang, M. & Liu, S. (2022). TESOL teacher educators in higher education: A review of studies from 2010 to 2020. *Language Teaching, 55*(4), pp. 434-469. doi: https://doi.org/10.1017/S0261444822000209

Zhang, M.-C., Zhu, B.-W., Huang, C.-M. & Tzeng, G.-H. (2021). Systematic Evaluation Model for Developing Sustainable World-Class Universities: An East Asian Perspective. *Mathematics, 9*(8), pp. 837. doi: https://doi.org/10.3390/math9080837

Zhang, Y., Zhou, S., Wu, X. & Cheung, A. C. K. (2024). The effect of teacher training programs on pre-service and in-service teachers' global competence: A meta-analysis. *Educational Research Review, 45*, pp. 100627. doi: https://doi.org/10.1016/j.edurev.2024.100627

Zhao, T. (2025). Ecological Civilization Education: The Innovative Integration and Development in Rural China. In *Encyclopedia of Educational Innovation* (pp. 1-8). Springer. doi: https://doi.org/10.1007/978-981-13-2262-4_322-1

Zhou, R., Rashid, S. M. & Cheng, S. (2024). Entrepreneurship education in Chinese higher institutions: challenges and strategies for vocational colleges. *Cogent Education, 11*(1), pp. 2375080. doi: https://doi.org/10.1080/2331186X.2024.2375080

Appendices

Appendix 1: Interview Questions

For Research Objective 1

1. Can you describe your experience with the current faculty development programs at your university? What are some strengths and weaknesses of these programs?
2. What are the biggest challenges you face as an educator in terms of professional development, and how do you think these challenges could be addressed?
3. How do you think the current faculty development programs align with the needs of the students and the overall educational goals of your university?

For Research Objective 2

4. In what ways do institutional policies and administrative support impact your professional development as a faculty member? Can you provide examples?
5. How do factors such as the curriculum structure, the teaching environment, and available resources influence your teaching practices and professional development?
6. How can the university integrate these ecological factors (institutional policies, curriculum design, etc.) more effectively to support faculty development?

Foro de Educación, v. 23, n. 1, enero-junio / january - june 2025, pp. 198-218.
e-ISSN: 1698-7802