

**A COMPARATIVE STUDY OF
VOCATIONAL EDUCATION IN
CHINA, THE UNITED KINGDOM,
AND THE UNITED STATES**

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DECLARATION FORM



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I certify that the whole of this work is the result of my individual effort, and that all sources have been acknowledged.

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I am satisfied that this work is the result of the Student's effort.

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Abstract

This research presents a comparative analysis of the vocational education systems in the United Kingdom, China, and the United States, with a focus on their policy frameworks, governance structures, curriculum designs, teaching and learning strategies, as well as industry collaborations and partnerships. Leveraging a multifaceted theoretical framework grounded in vocational education theories, human capital theory, and situated learning theory, the study sought to understand the implications of different approaches to vocational education on graduate employability and industry relevance. Through an extensive review of recent scholarly and governmental publications, thematic analyses were conducted to discern critical patterns and divergences in the approaches adopted by the three countries in their vocational education landscapes. The analysis revealed marked differences in policy orientation and governance structures, which inherently influence curriculum design, teaching strategies, and industry collaboration. The findings of the study furnish a rich tapestry of insights with substantial implications for policy and practice, offering a roadmap to strengthening vocational education systems to better serve the needs of students and the wider industry. Moreover, the research identifies potential areas for further exploration, laying the groundwork for future studies in this critical field of education.

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1. Introduction

1.1 Background and Context

Vocational Education (VE) is often positioned as being a solution for people who are “alienated from or unsuccessful in more traditional forms of academic education” (Wheelahan, 2015:750). It is also positioned as being a form of education with little focus on theoretical knowledge, although this is changing (Wheelahan, 2015). Another issue is that many believe that VE is a “lesser” form of education than academic forms and therefore less worthy of pedagogical study (Kasim and Fachriah, 2018). There are, therefore, many gaps in the literature regarding VE, particularly in the comparative sense. Despite this lack of interest, VE provides many opportunities for students both inside and outside of more academic approaches to education: there are ways that VE can be blended with academic qualifications, for example (Wheelahan, 2015). It is becoming an increasingly diversified and well-respected route to employment, and thus it is important to understand how this type of education is provided and delivered, including where improvements can be made to ensure the success of all students in VE.

China has a particularly well-developed vocational education system, catering to around 10 million graduates every year (Minglun, 2017). The system has been subject to several reforms, with the most recent highlighting a desire to expand the size and quality (Katy, 2022). The Vocational Education Law of 2022 upgraded the status of VE and aligned it with ambitions for economic development (Katy, 2022). There are, therefore, benefits in understanding how this system compares with others, partly to assess whether there are any lessons to be learned from Western systems. This type of comparison is also useful for developing a framework of VE systems, including their challenges and strategies and how best to use these to ensure that VE is meeting the needs of students.

1.2 Aims and Objectives

This literature review dissertation aims to critically analyse and compare the vocational education systems in China, the United States, and the UK. These latter two countries have been selected because they are the two primary destinations for Chinese students studying abroad, thus these education systems clearly have something to offer to Chinese students more generally (Chen, 2022). By examining the policies, structures, curriculum designs, teaching methodologies, and industry partnerships present in these countries, this study seeks to present a comparative analysis of VE practices. The dissertation will provide insights into the strengths and weaknesses of the Chinese vocational education system, while also exploring models

abroad. The research aims to contribute to the ongoing dialogue on improving vocational education and enhancing the employability of graduates in both China and global contexts. The following objectives have been developed to guide the present research and ensure that a full comparison can be made between these systems:

1. To analyse and compare the policy frameworks and governance structures of vocational education in China, the UK, and the United States.
2. To evaluate and synthesise the curriculum designs and delivery approaches of vocational education in China and abroad, with the goal of understanding key similarities and differences and their impact on graduates' employability and industry relevance.
3. To examine and assess the teaching and learning strategies employed in vocational education in China and selected foreign countries, aiming to analyse their effectiveness in facilitating skill acquisition, student motivation, and preparation for the workforce.
4. To critically evaluate the extent of industry collaboration and partnerships in vocational education systems in China and abroad, aiming to understand their contribution to graduates' future careers.

1.3 Research Questions

Based on the above aims and objectives of this research, the following research questions have been developed:

1. How do the policy frameworks and governance structures of vocational education in China compare to those in the UK and the United States?
2. What are the key similarities and differences in the curriculum designs and delivery approaches of vocational education in China, the United States, and the UK, and how do these factors contribute to graduates' employability and industry relevance?
3. What teaching and learning strategies are employed in VE in China, the UK, and the United States, and how do these strategies impact students' skill acquisition, motivation, and preparation for the workforce?
4. To what extent do industry collaboration and partnerships exist in vocational education systems in China, the UK, and the United States, and how do these partnerships contribute to graduates' job prospects and the alignment of skills with industry demands?

1.4 Significance of the Study

This research is significant in two main ways. The first is in the academic sense. As noted above, there is a dearth of research on vocational education when compared to academic forms, which means that any assessment of VE and how it is implemented will broaden the scope of understanding about how best to teach a vocation. There are also no known studies that compare the VE systems of these three countries. Conducting this research could allow for a cross-cultural insight into the types of VE systems that are used and whether there are any factors that impact the curriculum designs. It is also the first known study to include insight into industry collaboration and partnerships and how these apply to the systems, and again this will contribute to the overall understanding of VE and how it can be provided in the best interest of students.

There are also significant implications for stakeholders in VE. Governments and policy-makers will benefit from a comparative analysis of these systems as this will give insight into how VE can be structured. It will also ensure that VE is designed with the benefit of students in mind, particularly in terms of the employability and industry relevance of the courses. Educators will benefit for understanding the teaching and learning strategies that are utilised and whether there are any forms that are particularly impactful for students in terms of skill acquisition, motivation, and preparation for the workplace. Finally, students will benefit from having access to the most appropriate VE available; this research aims to give insight into the different systems in a way that contributes to our understanding of how best to deliver VE.

1.5 Dissertation Overview

This chapter presents the basis for the present study, including the aims, objectives, and research questions that guide the following chapters. Chapter two is the literature review, which focuses on giving an overview of the policy frameworks, curriculum designs, teaching and learning strategies, and industry collaboration and partnerships in vocational education. Chapter three is the methodology for this study, while chapter four presents the findings in line with each of the research questions outlined above. Chapter five is the discussion chapter, while chapter six presents conclusions from this analysis. It also presents recommendations for further research and practice.

2. Literature Review

2.1 Introduction

The purpose of this chapter is to present and analyse the current literature on vocational education in the three contexts of interest. The methodology for the literature review in this dissertation was firmly rooted in a systematic and rigorous examination of relevant literature. Initially, a comprehensive search was conducted using the Trinity St. David Library database, Google Scholar, and JSTOR, with the aim of identifying peer-reviewed articles, books, reports, and official documents pertinent to vocational education in China, the UK, and the US. The search process involved the use of specific keywords like "vocational education," "technical education," "China," "UK," and "US" as part of a Boolean search approach. This was confined to peer-reviewed articles and recent publications to maintain relevance to the current context. Effort was also made to focus on studies published in English and Mandarin Chinese within the last 15 years, although older texts were utilised where there were substantial and seminal studies relating to vocational education that were considered relevant to the topic of interest.

2.2 Policy Frameworks and Governance Structures in Vocational Education

2.2.1 China

Vocational Education (VE) in China has undergone significant transformations in recent decades, reflecting the country's rapid economic development and evolving industrial needs. The Chinese VE system is characterized by a strong policy framework and governance structure, with the government playing a central role in shaping vocational education policy and its implementation (Guo and Wang, 2020). This system is primarily structured into secondary vocational education, which caters to junior high school graduates, and higher vocational education, designed for senior high school graduates (Guo and Wang, 2020). These programs offer a wide range of courses in fields such as engineering, agriculture, business, and health care, emphasising the acquisition of practical skills and industry-specific knowledge. A distinct feature of the Chinese VE system is the close alignment between the curriculum and the country's economic and developmental goals, often reflecting the needs of key industries (Guo and Wang, 2020).

The current policy environment in China is considered very favourable to VE, and there has been a subsequent rapid development in the system (Shi, 2013). This has also occurred at a time when there have been “major breakthroughs...in vocational institutions’ educational

philosophy, basic capacity building, talent development, and faculty development” (Shi, 2013:12). Starting in 2005, the Chinese government has been expanding enrolment in vocational high schools to one million students with the aim of creating a balance between vocational and general education in the country (Li and Pilz, 2021). There has also been an expansion in higher VE, and since 2009 there has been an equal number of students in general higher education and vocational higher education (Shi, 2013). There are, however, concerns about whether the quality of the VE system can keep pace with the speed of enrolment, with a central problem “that vocational education has ignored customer requirements and that it lacks distinguishing features” (Shi, 2013:13). Essentially, this means that vocational education is considered of lower quality than academic forms of education, and that they are viewed as a monolith. This means that people with a particular talent for something may not be able to find a school that can engage this talent.

There have been general debates since education reforms in the 1980s about the ratio of general education to VE in China, with some suggesting that the 1:1 ratio currently in place is too high, with some suggesting that the 3:7 ratio in Germany may be more appropriate for a global economy (Shi, 2013). In addition to this, there have been debates about how much academic information should be included in these courses. The vocational schools in China have generally focused on academic training, despite their name, and also on younger people (Li and Pilz, 2019). This has led to certain imbalances that need to be addressed through policy changes, including changing the focus towards non-academic training and expanding the system to include post-education training for adults (Shi, 2013). Another issue that concerns the Chinese education system in general is the differences between rural and urban areas (Li and Pilz, 2019). There are major differences between the “people and the economic and social development needs in Shanghai, for example, and those of the central provinces” (Shi, 2013:15). This not only impacts the appropriate ratio for each province or region but also the professions and vocations that are needed within the VE system in each area (Xiong, Yang and Shen, 2022).

Based on these needs, a specific policy was created to ensure that students have access to the training that they need, also known as the *Circular on Implementing Comprehensive Performance Assessment of the Talent Cultivation Work of Higher Vocational and Technical Education* (Fan, 2020). The first stage of this was to reorganise and reform existing vocational colleges and supplement higher vocational education by encouraging 4-year regular universities to set up adjacent vocational colleges (Fan, 2020). The second stage focused on

improving the quality of higher vocational education and the development of model vocational colleges through the *Decision of the State Council on Rapidly Developing Vocational Education* and *Several Opinions on Comprehensively Improving the Teaching Quality of Higher Vocational Education* (Fan, 2020). The focus of this period was to improve teaching quality. The third stage aimed at capacity building for socio-economic development in China through several policy initiatives (Fan, 2020). The protocol is currently in stage four, where the emphasis is on expanding the scale and improving quality in higher vocational education (Fan, 2020). The aim of this to expand the system academically and through vocational training, although the pandemic disrupted these plans to a certain extent (Xiong, Yang and Shen, 2022).

2.2.2 United Kingdom

The VE system in the UK is older than that of China but is somewhat less centralised (Mason, 2020). In contrast with the approach used in China, students generally stay in general education until the age of 16 and can use VE to meet the requirement to stay in compulsory education until the age of 18 (Mason, 2020). VE at the university level is more complex and is typically not provided for at universities in the same way as it is in China or the United States (Wallenborn, 2010). It is grounded in a robust policy framework, overseen by several government bodies including the Department for Education. Vocational education in the UK offers a diverse range of qualifications such as BTECs, NVQs, and City & Guilds, which span various sectors including health and social care, engineering, hospitality, and creative arts, among others (Chankseliani, James Relly and Laczik, 2015). One of the distinctive features of the UK's VE system is the emphasis on a competency-based curriculum that focuses on the development of specific skills and competencies relevant to the industry. This system encourages learning by doing, often involving work placements, apprenticeships, and real-world projects (Chankseliani, James Relly and Laczik, 2015).

Additionally, the UK places a high priority on industry collaborations and partnerships in vocational education. This includes strong links with employers, industry representatives, and professional bodies, leading to curricula that are relevant and aligned with industry needs (Chankseliani, James Relly and Laczik, 2015). Such collaborations also provide valuable work experience opportunities for students and ensure a smoother transition from education to employment. However, the UK's VE system faces its own set of challenges. These include a perceived divide between vocational and academic education, with the former often viewed as a less prestigious pathway, as well as the need for greater standardization and quality control across different qualifications and providers (Chankseliani, James Relly and Laczik, 2015).

2.2.3 United States

As the U.S. is federalised, the vocational education system differs depending on the state. Generally, In the United States, vocational education, often termed as Career and Technical Education (CTE), has historically been guided by a series of federal legislative actions, with the state and local governments having a significant role in its implementation. Since the enactment of the Smith-Hughes Act of 1917, the federal governance of vocational education has evolved considerably (Guile and Unwin, 2019). A pivotal milestone in recent decades was the Carl D. Perkins Vocational and Technical Education Act first authorised in 1984 and reauthorised several times, with the latest reauthorisation coming in the form of the Perkins V act in 2018 (Guile and Unwin, 2019). The Perkins V Act brought forth several innovations, including a stronger emphasis on the alignment of vocational education with the labour market needs, urging states to create a seamless pathway for students from secondary education to post-secondary education and career placements (Gregson and Ruppel, 2017). It offered a more flexible approach to the use of federal funds, thereby encouraging states to craft programmes that are uniquely tailored to meet local economic demands (Gregson and Ruppel, 2017).

Under the Perkins V framework, there is a substantial focus on accountability and the delivery of high-quality CTE programmes (Fletcher and Gordon, 2017). The states are required to meet certain performance metrics, which include student graduation rates and their preparedness for postsecondary education or the workforce. Moreover, it encourages community collaborations, fostering partnerships with local businesses and industries to ensure that the CTE curricula remain aligned with the evolving industry needs and standards (Fletcher and Gordon, 2017). This collaborative approach intends to facilitate a symbiotic relationship between education institutions and industries, promoting mutual growth and preparing students for a competitive, dynamic, and ever-evolving job market.

The policy frameworks governing vocational education in the US also exhibit a conscious effort to promote inclusivity and equity. Initiatives under Perkins V aim to remove barriers that historically, marginalised groups face, encouraging participation from a diverse cohort of students, including those from low-income families, students with disabilities, and those from rural areas. (Lanford and Tierney, 2015) Additionally, there is an impetus on fostering innovation in CTE programmes through the implementation of state-led strategies that support the exploration and adoption of new pedagogical approaches, including the integration of STEM (Science, Technology, Engineering, Mathematics) into vocational education (Lanford and Tierney, 2015). However, despite these advancements, critics argue that the CTE system

in the US faces challenges such as the potential risk of tracking, where students are channelled into career paths too early, limiting their future opportunities. In light of these concerns, it remains essential to conduct ongoing evaluations of the policy frameworks to ensure that the CTE systems uphold the principles of equity and inclusivity while fostering excellence in vocational education (Kim et al., 2021).

2.3 Curriculum Designs and Delivery Approaches in Vocational Education

As noted above, there has been a rapid expansion of the VE system in China with significant policy support, but this has led to concerns about whether the quality is adequate as a result. Currently, research suggests that “the curriculum content at many schools does not match students’ development goals, which affects the quality of their talent development” (Shi, 2013:13). The central issue is that the allocation of specialties does not take market demand into account, and there has been an expansion in the number of subjects offered (Chankseliani, James Relly and Laczik, 2015). This means that the schools are not building a brand around a specific specialty and developing expertise in this area, meaning that the curriculum structure is not based on standards for talent (Shi, 2013). For example, if a student wants to gain plumbing skills, there may not be a specific school that has expertise in plumbing available to them; rather, they will likely attend a vocational school that provides a wide range of vocational education. This issue presents a challenge in the curriculum design process, wherein teachers may not have an appropriate schema to follow that will benefit students.

In part, this may be due to the lower expectations for vocational education when compared with more academic forms of learning (Li and Pilz, 2021). One literature review suggested that vocational education in the Association of Southeast Asian Nations community tends to focus on practical skills and soft skills – such as communication skills, how to work with others, and so on - rather than on any underlying principles, which can limit students in terms of application or if they wish to enter into a different profession (Fitriyanti Zulaikha et al., 2021). An opinion paper with experts in the vocational curriculum suggests that changing demands and the lack of academic elements in the vocational curriculum may even lead to its eventual disappearance; in the English context, “efforts are being made to replace it by an academic curriculum for all students with its formal sequences and stipulated knowledge” in schools, which may lead to frustrations among teachers (Young and Hordern, 2020:17). On the other hand, however, the implementation of T levels – a new scheme in the UK to provide technical alternatives to A Levels is “an attempt to introduce a technical version of an academic curriculum on the

assumption that such a curriculum is demanded by employers” (Young and Hordern, 2020:17). These too face challenges, in that they may not be valued by employers, which can lead to students leaving school without valuable academic or vocational qualifications (Young and Hordern, 2020).

As with other forms of learning, the COVID-19 pandemic shifted vocational education online, which meant an additional layer of challenges for teachers and learners. A study of mechanical engineering students in Indonesia highlighted that online learning did not meet the needs of students, and they felt that they had poor experiences and low productivity in mastering the competencies required (Syauqi, Munadi and Triyono, 2020). Hofmeister and Pilz found similar issues faced vocational learning for teachers in Poland, Italy, and Germany, where vocational education did not have formal frameworks which led to low satisfaction, despite the fact that “online learning as a form of teacher training was met with great interest” among these teachers in training (2020:182). While the pandemic was an unusual situation which put great pressure on teachers and students to adapt quickly (Mahmood, 2020), these findings generally suggest that online learning has not been adapted well to vocational training and that there needs to be further development for this to become a viable delivery approach in vocational education (Hofmeister and Pilz, 2020).

2.4 Teaching and Learning Strategies in Vocational Education

Another theme in the literature is the teaching and learning strategies that are used in vocational education, including assessments of the efficacy of these approaches for teaching students what they need to know. Perhaps the most well-established approach is that of problem-based learning, which involves students working in groups to solve an open-ended problem, which helps them to learn collaboration and with a hands-on approach which involves real-world problems and situations (Jabarullah and Iqbal Hussain, 2019). This approach has been shown to be more effective for vocational students than more academic or teacher-centred approaches as shown by scores on assessments and skills measurements (Jabarullah and Iqbal Hussain, 2019). Another study showed that this was particularly relevant in the so-called industry 4.0 era, the present era of work which includes increasing automation (Nurtanto, Fawaid and Sofyan, 2020). Another study showed that problem-based learning increased perseverance and motivation in addition to critical thinking skills (Seibert, 2020). Despite this research, there has been relatively little research that offers a comparative approach to different types of teaching and learning strategies in vocational education, and thus there is room to understand more about these and how they are used in context.

As noted above, online learning has been approached as a potential delivery method, which means that it has been integrated into curriculum design. For providers, one of the central challenges is in meeting the technical and didactic needs of students through online learning, as it offers far fewer opportunities for hands-on approaches to developing a skill (Belaya, 2018). Some providers physically provide students with the materials that they need through the post, so that students can gain the practical skills with guidance from tutors online; others may instruct students to buy the equipment that they need for the same reasons (Belaya, 2018).

2.5 Industry Collaboration and Partnerships in Vocational Education

The final theme in the literature is the industry collaboration and partnerships that are available for those in vocational education. There is a general expectation that students from vocational education systems will enter into specific careers and thus the skills that they develop will likely be industry specific (O'Dwyer, 2021). A study conducted in Sweden and Norway, which have relatively well-developed VE systems, found that the incorporation of industry in the development of VE helped to increase the reputation and results of these programs (Rusten and Hermelin, 2017). Despite this, there was concern about the robustness of the collaboration, as organisations may pull out of the partnership when it is no longer economically viable for them (Rusten and Hermelin, 2017). Further studies have shown that the intensity of relationships between vocational education and industry organisations is typically weak, and this can make it challenging for students to have trust in the system and to find appropriate funding for these systems outside of government programs (Olazaran et al., 2018). Additional studies, however, have shown that student satisfaction increases with the involvement of a year in industry or similar partnership (Wang et al., 2019), which means that this is an area that needs to be explored and strengthened in VE systems.

2.6 Theories and Approaches to Vocational Education

As may be expected, there have been a number of theories and approaches to vocational education posited within the literature with the aim of providing a framework for further research and pedagogies in delivering high quality VE to all students. Perhaps one of the most relevant theories as applied to vocational education is Human Capital Theory (HCT), which suggests that investing in education, training and skill development can help to enhance productivity and economic growth (Boldrin, Chen and Wang, 2004). Under this theory, the humans themselves become the capital in which governments or other organisations can invest; education is a form of capital akin to physical assets where investments yield future benefits (Boldrin, Chen and Wang, 2004). In terms of vocational education, the investment is training

in specific skills and knowledge that can prepare them for a specific career or set of careers that will benefit the economy (O'Dwyer, 2021). There are, of course, critics of HCT, who suggest that this reduces education to an economic transaction rather than viewing it as something that benefits the individual socially and personally (Boldrin, Chen and Wang, 2004). Despite this, HCT has underpinned the development of the vocational curriculum in many states as it presents opportunities and increased earning power to those who may not be successful in academic training (Boldrin, Chen and Wang, 2004).

Another approach that has been used to outline and explore VE is Situated Learning Theory (SLT), which posits that learning is a social process that requires an individual to engage with communities of practice, where they can acquire knowledge in real-world contexts and through active involvement with authentic and meaningful activities (Lave and Wenger, 1991). It has become particularly applicable to VE because it suggests that all learning will benefit from the immersive, hands-on approach that is common in vocational studies (O'Dwyer, 2021). Online learning can present a significant challenge here because many skills cannot be demonstrated online, and students would have to be posted the equipment. A central concept here is legitimate peripheral participation, which occurs when newcomers to a profession or skill become experienced through sequentially increased engagement with their learning communities (Lave and Wenger, 1991). As with HCT, there are critics of SLT; these typically focus on the idea that it undermines the cognitive processes that are associated with learning (Li and Pilz, 2021). It does, however, have the benefit of being a learning theory that does not overlook the vocational and practical as in other theories.

A final concept that is incorporated into theoretical frameworks and models of VE is the idea of vocationalism, which underscores the alignment of educational objectives with the needs and demands of the labour market. Vocationalism advocates for an educational approach that prioritises the cultivation of skills and competencies that are directly applicable in the professional sphere, thereby enhancing the employability of graduates (Li and Pilz, 2021). As per Neuhouser, Latz and Mulvihill (2022), the early 21st century saw a development in vocationalism called the New Vocationalism, wherein there is an increased focus on avoiding arguments between academic and occupational forms of education and attempts to integrate the two. The purpose of this is to stimulate lifelong learning and ensure that vocational students are not limited in the job market by a lack of academic flexibility and critical thinking; New Vocationalism highlights the need for both types of skills for all students (Neuhouser, Latz and Mulvihill, 2022). Unfortunately, while these ideas have merit, they have less successfully been

integrated into vocational education than may be expected (Neuhouser, Latz and Mulvihill, 2022), although the UK has attempted to increase academic components of learning through T-levels and other such strategies that will be investigated in further detail in subsequent chapters. These models all provide valuable lenses through which to critique and compare the vocational education systems of China, the UK, and the United States.

2.7 Gaps in the Literature

The existing body of literature on vocational education predominantly operates within silos focused on individual countries, with a considerable emphasis on national policy frameworks, governance structures, and the delivery of curriculum in isolation. There exists a paucity of comprehensive studies that endeavour to draw parallels and pinpoint distinctions in the policy frameworks and governance structures across the trio of China, the UK, and the US. Furthermore, while there is an array of research dissecting the particulars of curriculum designs and delivery approaches within these regions separately, a cohesive synthesis evaluating and comparing the vocational education systems of these countries remains largely unexplored. This delineated focus in current research leaves a gap in understanding the broader picture, which could bring to light the pivotal elements that foster successful vocational education systems through a comparative lens.

In addition, while several studies scrutinise the industry collaborations and partnerships within vocational education systems, a critical, cross-country comparative analysis, which could unearth distinct approaches and best practices from a global perspective, is conspicuously absent. Understanding the holistic impact of such collaborations on graduate outcomes is essential to tailor education systems that are both responsive and adaptive to changing industry dynamics. Therefore, the lack of multi-faceted, cross-border studies examining the teaching strategies employed in vocational education from a comparative viewpoint signifies a noticeable gap in the literature. This study intends to bridge these gaps by offering a comprehensive, comparative analysis of vocational education systems in China, the UK, and the US, focusing on policy frameworks, governance structures, and curriculum designs, and unearthing the potentials and limitations of each, thus adding a rich, globally-informed perspective to the existing body of research.

3. Methodology

3.1 Introduction

In order to respond adequately to the research aims and objectives, this study will adopt a comparative research design that synthesises a range of qualitative and quantitative data drawn from the policy frameworks, curriculum designs, teaching and learning strategies, and industry collaborations in vocational education (VE) systems across China, the UK, and the United States. The purpose of this chapter is to outline the various components of this research project and highlight the decisions that were made in the development of this methodology.

3.2 Research Design and Approach

The decision to employ a comparative research design is grounded in the necessity to understand the intricate and nuanced differences and similarities that exist within the vocational education frameworks of China, the UK, and the US. The epistemological underpinning of this approach lies in interpretivism, which fosters understanding and interpretation of the socio-cultural contexts, policy landscapes, and educational settings in different regions. Recognising that vocational education systems do not operate in a vacuum but are rather influenced by a myriad of factors including governmental policies, socio-economic factors, and industry demands, this approach aims to offer a deep, contextual understanding of the various elements at play (Cohen, Manion and Morrison, 2007).

Within this framework, the initial phase of the research will involve a detailed literature review which seeks to gather existing data and theory surrounding vocational education in the selected regions. Subsequently, the cross-national comparison will enable a critical synthesis of the information, facilitating a richer understanding of how vocational educational systems are structured, the pedagogies employed, and the extent of industry collaboration and its impact on graduate outcomes. This comparison will be strategically structured to discern the similarities and differences at different operational levels, thereby addressing the research objectives in a comprehensive manner. By integrating a comparative lens, the research stands to not only highlight the existing practices but to draw from the strengths and weaknesses of each system, potentially proposing a foundation for more harmonised and effective vocational education policies globally (Cohen, Manion and Morrison, 2007). This design, thus, leverages the strengths of interpretivism to foster a holistic understanding while providing a concrete ground for practical implications and future research directions.

3.3 Theoretical Framework

3.3.1 Interpretivism

Central to this research was the adoption of an interpretivist epistemological stance. Grounded in the belief that reality is constructed through human actions and interactions, interpretivism permitted a deep, nuanced exploration of the multifaceted realities within vocational education systems in China, the UK, and the US. Applying this theoretical underpinning facilitated a comprehensive analysis of the distinct educational paradigms and policy frameworks, with an understanding that these are shaped by unique historical, social, and cultural contexts (Cohen, Manion and Morrison, 2007). Through the lens of interpretivism, the research acknowledged the diverse perceptions and interpretations that different stakeholders - including educators, students, and policymakers - have of the vocational education systems. This approach fostered a critical examination of the complex interplay of elements such as policy frameworks, curricular designs, and teaching strategies, by allowing for an inclusive analysis that honoured the multiplicity of experiences and perspectives in vocational education.

3.3.2 Comparative Education Theory

Integrated within the broader interpretivist framework was the use of comparative education theory, which facilitated the analysis of educational systems in different socio-cultural contexts. Applying this theory permitted the exploration and understanding of vocational education systems from a comparative standpoint, thereby offering rich insights into the nuances of policy, curriculum, and pedagogy across different regions (Arnone, Torres and Franz, 2013). This theory encouraged a meticulous examination of the vocational education landscapes in China, the UK, and the US, presenting an opportunity to delve deep into the fundamental principles governing each system, the delivery approaches adopted, and the impact these have on students and the wider industry. The comparative education theory thus served as a tool to unearth critical similarities and differences, aiding in a broader understanding of the global vocational education landscape (Arnone, Torres and Franz, 2013).

3.3.3 Vocational Education and Training (VET) Theoretical Framework

Adding a critical dimension to the theoretical framework of this study is the integration of theories pertinent to Vocational Education and Training (VET). Central to this is the concept of 'vocationalism', which underscores the alignment of educational objectives with the needs and demands of the labour market. Vocationalism advocates for an educational approach that prioritises the cultivation of skills and competencies that are directly applicable in the

professional sphere, thereby enhancing the employability of graduates (McGrath, 2012). Embedded within this concept are theories of skill formation, which focus on the pedagogical approaches adopted in vocational education to foster skill acquisition and development. These theories are particularly concerned with identifying the most effective strategies for facilitating learning that is deeply grounded in practical, industry-relevant experiences (McGrath, 2012). By focusing on skills formation and vocationalism, the research sought to delve deeply into the structures and curricular designs that underpin vocational education, aiming to understand how these foster industry readiness and enhance the alignment between educational outputs and labour market demands.

3.3.4 Application of Theoretical Framework

Utilising the interpretivist framework, comparative education theory, and the theoretical underpinnings of VET, the research adopted a holistic approach in the analysis of vocational education landscapes. The VET framework, grounded in the principles of vocationalism and skill formation theories, guided the investigation into the practical aspects of vocational education, including curriculum design and industry collaboration. In the data collection stage, this theoretical component steered the selection of literature towards resources that offered insights into the curricular approaches adopted in vocational education systems, and how these are designed to meet industry requirements and enhance graduates' employability. This facilitated a focused exploration of the curricula from the standpoint of vocationalism, understanding the extent to which they fostered skill acquisition and alignment with industry demands.

During the data analysis and synthesis stages, the research applied the VET theoretical lens to scrutinise the strategies adopted in vocational education systems for skill development. It encouraged an investigation into the pedagogical strategies identified in the selected literature, aiming to discern the efficacy of different approaches in fostering skills that are valuable in the labour market. This allowed for a rich and detailed analysis of the curricula, unearthing the underlying philosophies and approaches that govern skill formation in different contexts. In synthesising the findings, this framework encouraged a critical evaluation of the vocational education systems in China, the UK, and the US, analysing not just the structures and policies, but also the practical implementation and outcomes of these systems. It fostered a deep understanding of the ways in which vocational education systems succeed in fostering industry-relevant skills, as well as the areas where they might fall short.

By harmoniously integrating the interpretivist and comparative education theory with the VET theoretical framework, the research crafted a robust theoretical lens through which to view and analyse the complex landscapes of vocational education. This multi-faceted approach allowed for a comprehensive exploration that recognised the multifaceted nature of educational systems, permitting a nuanced analysis that is deeply grounded in theory and rich in contextual understanding. The theoretical scaffold thus constructed provided a strong foundation for a detailed, in-depth analysis of vocational education systems, encouraging a critical approach that sought to uncover the deep structures that underpin these systems and shape the experiences of their stakeholders (McGrath, 2012).

3.4 Data Collection and Selection

3.4.1 Literature Search Strategy

To initiate the data collection, a structured literature search strategy was crafted, focusing on a careful selection of databases and the utilisation of specific search terms to garner a broad and comprehensive base of literature (Schira, 1992). Reputable databases such as Google Scholar, Educational Resources Information Center (ERIC), and relevant educational and policy databases were used to access a rich collection of both academic and grey literature. The search strategy incorporated the use of Boolean operators to refine the search with phrases such as “Vocational Education AND Policy Frameworks”, “Vocational Education AND China/UK/US”, and “Industry Collaboration AND Vocational Education”. The inclusion of specific keywords related to governance structures, curriculum designs, teaching strategies, and industry collaborations further focused the search, ensuring the retrieval of the most pertinent resources.

3.4.2 Inclusion and Exclusion Criteria

Building a reliable foundation of literature required clearly defined inclusion and exclusion criteria (Schira, 1992). Literature to be included was selected based on a publication date within the last fifteen years to maintain timeliness, and a focus on the vocational education landscape in China, the UK, and the US. Peer-reviewed articles, government reports, and policy documents formed the primary corpus of the selection. On the other hand, works not published in English or Mandarin Chinese, lacking empirical grounding, or diverging from the vocational education focus in the specified regions were excluded from consideration. This meticulous approach in defining the criteria ensured a focused and relevant set of data for the research.

3.4.3 Selection Process

Upon gathering a significant volume of literature, a two-step strategy was adopted to distil the collection to the most pertinent resources. Firstly, a screening based on titles and abstracts was undertaken to assess the relevance to the research objectives and questions (Schira, 1992). This was followed by a full-text review to further scrutinise the depth and pertinence of the data each source offered (Schira, 1992). The remaining literature was then categorised thematically, corresponding to the various areas outlined in the research objectives, thus paving the way for a focused comparative analysis. By adopting this systematic and structured approach, the research assures a foundation built on comprehensive and credible resources, poised to offer deep insights into the vocational education systems in the selected countries.

3.5 Data Analysis and Synthesis

3.5.1 Thematic Analysis

Following the comprehensive data collection, the first step undertaken was a thematic analysis of the amassed literature. Utilising a qualitative approach, this analysis sought to identify, analyse, and report patterns within the data. To organise the data effectively, a coding scheme was developed to tag various elements related to the policy frameworks, curriculum designs, teaching strategies, and industry collaborations in vocational education systems of China, the UK, and the US. This stage was pivotal in delineating the primary themes and subthemes that emerged through a meticulous reading and re-reading of the selected literature (Siddaway, Wood and Hedges, 2019).

3.5.2 Comparative Analysis

Subsequent to identifying the primary and secondary themes, a comparative analysis was instituted. This analytical procedure was tailored to meticulously dissect the similarities and differences present in the vocational education systems in the selected regions. The comparative analysis enabled a richer understanding by situating the findings in a broader context, thereby facilitating the synthesis of data in a manner that addressed the research questions holistically (McGrath, 2012). Each theme and subtheme was analysed in a cross-national context, drawing out the nuances that dictate the functioning of vocational education systems in different socio-cultural and policy landscapes.

3.5.3 Synthesis of Findings

In the final stage of the analysis, a synthesis of the findings was undertaken. Here, the insights derived from the comparative analysis were integrated to present a cohesive understanding of the vocational education landscape across the selected regions. This synthesis aimed not only

to portray the existing structures but to critically evaluate the potential for harmonisation and shared learning between the regions. By understanding the strengths and weaknesses inherent in each system, this synthesis strove to offer grounded recommendations for policy and practice, aiming to enhance vocational education globally through a nuanced understanding derived from cross-national perspectives (Siddaway, Wood and Hedges, 2019). Through this multi-step analytical process, the research aimed to offer a detailed and nuanced understanding of the vocational education systems, informed by a rich array of data and guided by the research objectives and questions (Siddaway, Wood and Hedges, 2019).

3.6 Limitations and Ethical Considerations

This research faced a series of limitations. Firstly, restricting the literature review to publications from the last fifteen years could have overlooked vital historical developments and long-standing perspectives in the field of vocational education. This restriction to recent publications, while aiding in maintaining a current perspective, perhaps failed to capture the nuanced evolution of the vocational education landscape over a longer period (Cohen, Manion and Morrison, 2007). The reliance on secondary analysis of existing literature posed an additional limitation as it did not allow for verification of the original data's authenticity and robustness (Cohen, Manion and Morrison, 2007). Furthermore, the selection process of relevant literature, despite being meticulous, carried a risk of introducing a selection bias, where critical studies might have been overlooked or excluded, potentially affecting the comprehensiveness of the research.

Ethical integrity remained a core guiding principle throughout the research process. The strict adherence to academic guidelines necessitated a precise representation of the views and findings delineated in the sourced literature, avoiding distortion or misrepresentation. A significant portion of this commitment involved providing proper citations and acknowledgements to avert issues of plagiarism (Cohen, Manion and Morrison, 2007). Additionally, the research upheld a conscious effort to avoid any biased interpretations and ethnocentric viewpoints during the data synthesis process. It endeavoured to maintain a global and respectful analytical lens, fostering a multifaceted understanding of vocational education systems that is inclusive and representative of diverse regional perspectives.

3.7 Summary

In outlining the research approach, this chapter detailed the methodologies employed to undertake a comparative analysis of vocational education systems in China, the UK, and the

United States. The research design grounded in interpretivism facilitated an in-depth understanding of the intricate landscapes governing vocational education in these regions. This chapter outlined a comprehensive strategy for data collection and selection, leveraging Boolean operators and specified search terms to fetch the most pertinent literature, and determining precise inclusion and exclusion criteria to filter and retain the most relevant studies. The data analysis and synthesis section highlighted the detailed, multi-faceted process adopted to interpret the data, including thematic and comparative analyses, to build a deep, nuanced understanding and generate grounded policy and practice recommendations.

4. Findings

4.1 Introduction

The purpose of this chapter is to present and outline the findings that were gleaned from the above methodology, focusing on analysing the findings from the literature review chapter and additional literature based on the theoretical framework outlined in the methodology chapter. It focuses on presenting a comparative analysis of each of the different vocational education systems in the three countries of interest in each of four thematic categories: policy framework and governance structures, curriculum designs and delivery approaches, teaching and learning strategies, and industry collaboration and partnerships in line with the research questions for this project and the need to understand the comparative benefits and drawbacks of each type of system in these domains.

4.2 Comparative Analysis of Policy Frameworks and Governance Structures

Evidently, there are a variety of different policy frameworks and governance structures for the development and distribution of vocational education between the UK, the United States, and China, each of which has their own benefits and drawbacks. In analysing the policy frameworks and governance structures of vocational education in the UK, China, and the US, one is presented with a rich tapestry of historical backgrounds, economic policies, and educational philosophies which have shaped the contemporary landscapes in these regions (Zhai, 2006). In the UK, vocational education has undergone substantial reforms, particularly from the late 20th century onwards. The recent years have seen the introduction of T-levels, a technical alternative to A-levels, to bolster the country's technical education framework (Mason, 2020). This is complemented by a network of apprenticeships that facilitate on-the-job training, coupled with classroom learning, ensuring a balanced development of technical knowledge and practical skills. The governance is characterised by a collaborative approach involving various stakeholders including the government, industry partners, and educational institutions, working towards a common goal of fostering a skilled workforce that is aligned with the industry demands (Mason, 2020).

Moving to China, the vocational education landscape is heavily influenced by the country's rapid economic development and urbanisation (Zhai, 2006). The governance structure is largely centralised, with the government playing a pivotal role in steering the direction of vocational education through comprehensive five-year plans. These plans often entail

strategies to modernise the curriculum, enhance the quality of teaching, and foster partnerships with industries to ensure a smooth transition of students from vocational schools to the workforce (Zhai, 2006). There has been a notable emphasis on high-quality vocational education as a fundamental aspect of the country's education strategy, aiming to equip students with skills that are vital in the modern workforce, although there is also a stated need to ensure that vocational education has the same reputation in terms of quality as academic education (Zhai, 2006). In the Chinese education system, the academic pathways in both high schools and university are generally prized above the development of vocational skills, which means that students and parents may feel disappointed when the student is placed on this pathway (O'Dwyer, 2021). This is something that has the potential to be addressed through continuous quality improvement and government initiatives, which is appropriate for the Chinese system where the process is generally centralised (O'Dwyer, 2021).

In contrast, the US maintains a substantial level of decentralisation in its vocational education policy framework, largely under the purview of the Carl D. Perkins Vocational and Technical Education Act, reauthorised as Perkins V in 2018 (Mason, 2020). This legislative backdrop allows individual states a considerable degree of freedom to tailor their vocational education programmes, aligning them with local economic demands and labour markets (Cushing et al., 2019). The Perkins V Act has encouraged collaborations between educational institutions and local industries, fostering a learning environment that is responsive to the dynamic needs of the economy (Cushing et al., 2019). It also places a strong emphasis on inclusivity, striving to create opportunities for historically marginalised groups and fostering innovation through the integration of science, technology, engineering, and mathematics into vocational education (Plasman and Gottfried, 2020).

Comparatively, while all three countries are striving to equip their youth with the skills necessary for modern industries through vocational education, their approaches vary significantly. The UK leverages a balanced approach, integrating theoretical knowledge with practical experience through apprenticeships and new initiatives like T-levels that are designed to banish the barriers between academic and vocational training and ensure that VE students have critical thinking and academic skills that will serve them well between industries (O'Dwyer, 2021). This approach can also be seen in reverse, with the introduction of more apprenticeships for typically academic professions such as medicine, which will integrate professional training with the academic study needed to become a physician (GOV.UK, 2023). China maintains a stringent, centralised governance structure, closely aligning its vocational

education strategies with economic development plans. Conversely, the US opts for a more flexible, state-driven approach, encouraging innovations and partnerships at the local level, guided by a federal legislative framework. Understanding the nuances of these approaches and the outcomes they yield is crucial in painting a comprehensive picture of the vocational education landscapes in these countries, facilitating a rich ground for learning and potential cross-pollination of successful strategies.

4.3 Comparative Analysis of Curriculum Designs and Delivery Approaches

In turning attention towards the curriculum designs and delivery approaches adopted in vocational education across the UK, China, and the United States, it becomes clear that each nation has structured its educational paradigms to resonate with its unique socio-economic dynamics, which invariably results in distinct approaches in terms of both curriculum design and delivery mechanisms. In the UK, the vocational education system is being redefined with a sharp focus on developing clear pathways to employment through initiatives like the introduction of T-levels, which are intended to provide a blend of classroom learning and substantial industry experience (O'Dwyer, 2021). Despite the potential of these approaches, there has been concern that the UK does not have a consistent policy approach to vocational education and T-levels are just another attempt to change the system to meet the needs of industry without considering the skills that the students themselves need, perhaps including the ability to switch industry if desired, essentially meaning that students might not be prepared for the working environment (Misselke, 2022). Apprenticeships are another cornerstone, facilitating a dual approach of learning that combines theoretical instruction with hands-on experience, but again there are challenges “with the increased pressure to develop generic teaching skills rather than specialist vocational pedagogy”, which has led to an assumption that both T-levels and apprenticeships are of lower quality (Misselke, 2022:708). There has been an increased focus on aligning the curriculum with the skills and knowledge demanded by employers to ensure that the education is relevant and makes the students industry-ready, but this may leave student-centred learning out of the equation, leaving students with challenges when changing industry or attempting to leverage their skills into higher paid positions (Li and Pilz, 2021).

In China, the vocational education curriculum is sculpted to suit the fast-paced economic development, being aligned closely with the country's developmental plans that focus on producing a high-quality labour force adept at meeting the current market demands. A central

feature of the Chinese system is that there is greater separation between vocational and academic education at the secondary level, where 41% of enrolment at the upper secondary level is in vocational schooling (Guo and Wang, 2020). This has the benefit of allowing students to avoid challenges in academic studies at this level, something which has been observed in systems like the UK and the United States (Li and Pilz, 2021), but also means that students are often funnelled into these systems in a way that makes it difficult for students to follow another path later in life (Guo and Wang, 2020). In response to these challenges, China has been fostering innovation in vocational education through the integration of emerging technologies into the curriculum, such as social media or artificial intelligence, aiming to keep abreast with the global advancements and ensure that students are prepared for a wider range of careers (Guo and Wang, 2020). One report suggests that vocational schools are using virtual reality headsets, for example, to allow students to explore practical assignments such as carpentry that would otherwise require equipment (Kour, 2023). The Chinese government exerts a strong influence in shaping the vocational education landscape, ensuring a close nexus between industry demands and the vocational curriculum, which is often reviewed and updated to keep it contemporary and aligned with the changing economic dynamics (O'Dwyer, 2021).

The US approach, under the guidance of the Perkins V Act, endorses a decentralised method allowing for states to have considerable autonomy in shaping their respective vocational education programmes, which has the benefit of ensuring that students are prepared in terms of local employment opportunities but can lead to a lack of consistency in quality at the national level (O'Dwyer, 2021). This also becomes problematic if people want to move from one state to another. The emphasis in the United States is on collaboration with local industries to ensure the curriculum remains dynamically aligned with the labour market needs, which again justifies to a certain extent the state-specific approach that allows tailoring to local rather than national market needs (O'Dwyer, 2021). There has also been an increased focus on the integration of science, technology, engineering and mathematics fields in the vocational curriculum as in both the UK and in China, envisaging the creation of a workforce adept in modern technological advancements. The US system promotes inclusivity by striving to make vocational education accessible to various groups, including those historically marginalised, which is something that is absent from both the UK and Chinese systems, which have both been noted to have class-related challenges that lead to more of those from poorer backgrounds engaging in vocational education regardless of their academic aptitude (O'Dwyer, 2021). Similar studies have shown that Black and Minority Ethnic students are disproportionately represented in vocational

education in England, which also correlates with being from a lower class group (Avis, Orr and Warmington, 2017).

In China, vocational education often serves as a fallback option for students who perform poorly in academics, largely due to a societal stigma that views vocational pathways as inferior. The Chinese education system places a heavy emphasis on examination-based assessment, pushing students with lower academic performance towards vocational institutions. This is compounded by an employability bottleneck, where vocational graduates find their qualifications undervalued by employers, further reinforcing the stigma. As of late August, there were 16.6 million students enrolled in secondary vocational schools, accounting for almost 43% of total senior-level secondary school enrolment (O'Dwyer, 2021). In the U.S., marginalised racial and ethnic populations (Black, Hispanic, Latino, Native American, and Pacific Islander) are underrepresented in higher education, both among undergraduates and faculty, and face worse academic outcomes, including lower graduation rates. These disparities are influenced by chronic inequalities throughout the education system, including lower high school graduation rates and less college preparedness among these groups compared to White and Asian students (O'Dwyer, 2021).

Comparatively, while each nation shares the common goal of aligning vocational education with contemporary industry needs, their strategies and focal points diverge. The UK presents a balanced approach that blends theoretical learning with practical industry experience, fostering direct pathways to employment. China demonstrates a centralised strategy with a focused curriculum tailored to support its rapid economic development. The US, on the other hand, supports decentralised, state-driven strategies that allow for regional adaptations and foster inclusivity. This analysis reveals a rich diversity in the approaches taken by these nations, offering a ground to explore and understand the strengths and potential areas of synergy, providing an avenue for cross-learning and collaboration in shaping future vocational education policies globally. It is clear from this analysis that, for the most part, the systems are in line with national educational principles and local market needs, which also influences the benefits and drawbacks of each system when using the comparative approach.

4.4 Comparative Analysis of Teaching and Learning Strategies

In order to appreciate the distinctions and convergences in teaching and learning strategies within vocational education in the UK, China, and the US, it is essential to delve into the foundational educational philosophies and the prevailing trends that have guided instructional

approaches in these countries. In the UK, vocational education attempts to embody a learner-centred approach, where individual learning plans are often devised to cater to the unique needs and aspirations of the students (Li and Pilz, 2021). There is an emphasis on providing students with real-world experiences through apprenticeships and work placements that form a crucial part of the vocational education pathway and ensuring that they have contacts within the target industry (Li and Pilz, 2021). This strategy not only enables students to acquire industry-relevant skills but also fosters a deep understanding of the theoretical concepts through practical application, but this flexibility has also been criticised for moving too quickly at the expense of quality and consistency throughout the country (Misselke, 2022). The use of technology-enhanced learning environments and flexible learning pathways are increasingly being recognised as vital components in facilitating immersive and adaptive learning experiences, but again may face challenges in terms of consistency and quality due to the fast pace of development and changes in policy (Misselke, 2022).

Turning towards China, the teaching and learning strategies in vocational education are designed within a hierarchical, teacher-centred paradigm, which is reflective of the broader Chinese educational philosophy (Guo and Pilz, 2020). The strategies encompass a structured approach to learning, where the curriculum is tightly controlled and often oriented towards meeting the direct needs of the industries. In recent times, there has been a gradual shift with an increasing emphasis on fostering critical thinking and problem-solving skills among students to prepare them for a competitive global market (Guo and Pilz, 2020). Additionally, China has been investing heavily in upgrading the infrastructure of vocational education institutions to provide students with state-of-the-art facilities and technological tools to facilitate modern learning experiences (Xue and Li, 2021). Despite this, the Chinese system continues to function on a “type-based” approach, which refers to a separation between academic and vocational education that is often insurmountable and streams students into different careers at a relatively young age (Xue and Li, 2021). Reports suggest that while secondary vocational education at the specialised high school level is formal and attracts the best-qualified teachers, those found at vocational middle school and vocational high school level are less well-regarded and this can lead to limitations in the teaching strategies and methods used (Li et al., 2019).

Meanwhile, the US maintains a diverse landscape in its vocational education sphere. The teaching and learning strategies here are characterised by a blend of theoretical knowledge dissemination and practical skills training, often facilitated through partnerships with local

industries. Perkins V has fostered an environment that encourages innovative teaching approaches, including project-based learning, collaborative learning environments, and the integration of technology in education (Li and Pilz, 2021). The strategies here are oriented towards creating a holistic learning environment where students are encouraged to develop both hard and soft skills, preparing them for a wide range of career opportunities. Again, however, there are limitations. There are noted challenges in transferring vocational qualifications between countries, and this can also present itself as an issue when transferring qualifications and training between states in this federated system (Li and Pilz, 2021). As in the UK and China, there are also concerns that vocational education does not have the same standards and public support as academic education, which can also lead to a reduction in quality through teaching and learning (O'Dwyer, 2021).

In summation, the teaching and learning strategies in vocational education across the UK, China, and the US present a complex yet rich narrative of diverse educational philosophies. The UK gravitates towards learner-centric strategies that foster individual growth through real-world experiences, while China remains anchored in a teacher-centred, structured learning environment, albeit gradually embracing more learner-active strategies. In contrast, the US showcases a flexible and innovative environment, encouraging a blend of knowledge and skill development. This comparative analysis elucidates the distinctive strategies adopted by these nations, each striving to foster vocational education systems that are robust, responsive, and aligned with the demands of the contemporary global labour market, albeit through differing pedagogical pathways.

4.5 Comparative Analysis of Industry Collaboration and Partnerships

To grasp the spectrum of strategies employed in nurturing industry collaborations and partnerships in vocational education, it is helpful to look into the respective approaches adopted by the UK, China, and the United States. These approaches are pivotal in facilitating the employability of graduates and in ensuring that the educational offerings are abreast with industry demands. In the UK, industry collaborations and partnerships are encouraged and fostered actively within the vocational education sphere. Recent reforms have witnessed a surge in employer-led initiatives, where businesses are involved in the design of the curriculum, ensuring a direct correlation with the skills and expertise sought in the marketplace (Hodgson and Spours, 2019). Apprenticeships remain a cardinal feature, established through close collaborations between educational institutions and industries, fostering environments where

students can garner hands-on experience and insights into the operational dynamics of the sector they are being trained for (Farley, 2022). The collaborative ethos is oriented towards crafting a workforce that is agile, adept, and prepared for the challenges of the contemporary industry landscape (Orr, 2020).

Shifting the focus to China, one observes a deeply entrenched government facilitation in fostering industry collaborations and partnerships within vocational education, particularly in rural areas where the government has increased investment and promoted collaboration heavily as a way of addressing the income gaps between urban and rural areas (Postiglione and Tang, 2019). The five-year plans routinely highlight the imperative to bridge the gap between educational outputs and industry requirements, creating a continuum of development that is mutually reinforcing. This has also manifested in substantial industry investments in vocational education institutions, fostering symbiotic relationships where industries not only influence the curriculum but also provide platforms for practical training, equipping students with the skills that are in high demand (Han et al., 2020).

Meanwhile, in the US, the approach is marked by a collaborative landscape that is both diverse and dynamic, and one that has been designed to foster a manufacturing industry that can be competitive with China after the transfer to the knowledge economy of the past few decades (Snell, 2018). The Perkins V Act and the American Recovery and Revitalisation Act has served as a catalyst in promoting industry partnerships at a local level, encouraging educational institutions to tailor their offerings in tandem with regional industry demands (Soliz and Ecton, 2022). This has spurred innovative collaborations including internship programs, workshops facilitated by industry experts, and project-based learning initiatives where students have the opportunity to work on real-world industry problems. This has fostered a fertile ground for nurturing skills that are not only relevant but are essentially sought after in the local industrial landscapes (O'Dwyer, 2021). From each of the countries, the United States perhaps has the strongest industry collaboration approach, as vocational education is highly integrated into industry (O'Dwyer, 2021).

Drawing parallels and distinctions across these contexts, it is evident that each region has harnessed collaborations and partnerships to enhance the quality and relevance of their vocational education offerings. The UK leverages employer-led initiatives to ensure a curriculum that is industry-aligned. China employs a centralised strategy, utilising government facilitation to foster substantial industry involvement in both curriculum development and

practical training. The US, with its decentralised approach, encourages region-specific collaborations to nurture a workforce that is synchronised with local industry demands. These divergent strategies attest to a concerted effort towards achieving a vocational education system that is robust and reflective of the evolving industry landscapes, providing graduates with a launching pad that is both relevant and responsive to the market dynamics.

4.6 Summary

This chapter has presented a different comparative analysis of each of the four central themes in the literature and a comparative analysis of how they apply in each of the three national contexts of interest here. These findings suggest that there are benefits and drawbacks to each of the different. An analysis of the policy frameworks and governance structures underscored distinct approaches, with the UK leveraging reforms like the introduction of T-levels to facilitate direct employment pathways, China employing a centralised strategy orchestrated around its rapid economic developmental plans, and the US encouraging state autonomy to foster programs aligned with local industry demands. Delving deeper, we examined the teaching and learning strategies adopted across these nations, revealing a spectrum of approaches ranging from the UK's learner-centred paradigm to China's structured, teacher-centric environment, and the US's innovative and inclusive learning platforms. Similarly, the industry collaborations and partnerships portrayed a rich tapestry of cooperative endeavours aimed at bolstering the vocational education ecosystem. The UK emerges with a focus on employer-led initiatives and apprenticeships, China with government-facilitated industry integrations, and the US with region-specific collaborations grounded in local industry landscapes. As we synthesised these findings, a narrative of diversity in approaches yet unity in objectives came to the fore, illustrating concerted efforts across nations to sculpt vocational education landscapes that are not only robust and resilient but also dynamically aligned with the evolving industrial and economic milieus. This comparative analysis illuminates potential avenues for cross-learning, providing a fertile ground for envisioning a future of vocational education that leverages the strengths of each system while fostering global collaboration and understanding.

5. Discussion

5.1 Impact of Policy Frameworks and Governance Structures on Vocational Education

Analyzing the complex interplay of policy frameworks and governance structures in vocational education across the UK, China, and the United States offers a rich perspective into the differentiated and yet somewhat interconnected landscapes that shape the sector globally. At the heart of the UK's approach is the endeavour to bridge the gap between vocational and academic pathways, exemplified by reforms such as the introduction of T-levels. This resonates with China's strategic alignment of vocational education with economic imperatives, underlined by the significant role played by government planning in setting the direction and focus of vocational training to meet booming sector demands (McGrath, 2012). However, it is essential to critically appraise the risk of a narrowing focus that such economic alignments might entail, a critique that could equally apply to the UK's policy direction. Both systems exhibit the peril of potentially overshadowing diversified and emergent sectors in an attempt to satisfy immediate economic demands. In the UK, there have been concerns that the policy environment changes too rapidly to allow for quality control and observation; this dynamic system allows for fast responses to industry challenges but does make it difficult to assess whether the system is meeting those needs in the medium- and long-term (Cushing et al., 2019).

In contrast, the US's policy framework fosters a decentralised governance structure, grounding the development of vocational education programs in regional realities through state-led initiatives, as observed in the endorsement of regional specialization in the Perkins V Act (Li and Pilz, 2021). This approach shares a conceptual space with the UK and China's attempts to align education with industry requirements, albeit operating on a more localised scale, which is likely appropriate due to the nature of the U.S. federalised system (Cushing et al., 2019). The analysis hence points towards an inherent tension in policy frameworks globally, navigating between the need for specialisation based on regional industry demands and the necessity to uphold a diversified educational approach that accommodates emerging industries. At the same time, Li and Pilz (2021) note that there is a need for greater transfer of vocational training and qualifications between geographical regions for students to have the international mobility that is afforded to non-vocational university students. Drawing these strands together, it becomes evident that policy frameworks and governance structures in vocational education globally are treading a precarious path between specialisation and diversification. This underscores a critical juncture in vocational education policy where the demand for focused skill

development risks contravening the holistic development envisaged in broader educational philosophies. Thus, while the UK and China exhibit an overarching strategy to directly address economic needs through a focused vocational pathway, the US retains a more flexible approach, negotiating the balance between regional specialisation and a broader educational spectrum.

5.2 Influence of Curriculum Designs and Delivery Approaches on Graduates' Employability and Industry Relevance

A nuanced analysis of the implications of curriculum designs and delivery approaches on graduates' employability and industry relevance unfolds when investigating the vocational education landscapes of the UK, China, and the United States. In the backdrop of evolving economic dynamics, the UK and China maintain a strategic focus on aligning vocational education curricula with market demands (Young and Hordern, 2020). The UK adopts a dynamic approach, consistently adapting to industry expectations to foster direct employability through its educational pathways (Straw, Sims and England, 2019). Similarly, China harnesses its educational framework to channel a workforce that meets the stringent demands of its fast-paced economic sectors (Xue and Li, 2021). This meticulous crafting of educational pathways, while enhancing industry relevance, also invites reflection on the possible narrowing of learning experiences, fostering expertise at the potential expense of versatility (Xue and Li, 2021). In China in particular, there is a concern that “typing” students from middle school or high school will limit those who are late academic bloomers before they have the power to reach their potential; at the same time, this highlights an undervaluing of vocational education in comparison to academic forms of education (Xue and Li, 2021). In a parallel stream, the US embraces a decentralised approach to curriculum design, providing scope for state-specific strategies to tailor vocational education closely with regional industrial landscape (Fletcher and Gordon, 2017)s. This nurturing ground for a myriad of programmes offers a rich diversity and a space for innovation, albeit with the potential downfall of fragmentation and inconsistencies in quality and scop (Fletcher and Gordon, 2017). This approach engenders a fertile ground for cultivating a workforce with deep regional insights and expertise but poses a pertinent question on the harmonious coexistence of such diversified pathways in the globalised job market. This may, however, limit the transfer of qualifications between geographical areas (Fletcher and Gordon, 2017). It can also make it difficult to measure the quality of vocational education in the United States between regions (Fletcher and Gordon, 2017), and may make it less flexible than the UK approach.

As the intricacies of these distinct approaches are unravelled, a complex interplay between specialization and versatility comes to light. It raises critical reflections on the potential trade-offs between creating curricula deeply embedded in current industry demands and fostering a learning environment where broader skill sets, critical thinking, and adaptability are nurtured to equip learners for a fluid, ever-changing job landscape. Deepening this analytical lens brings into focus the underlying philosophical debates in the educational sphere regarding how best to design the curriculum for the needs of students and the economy, and whether incorporating lessons from academic education into delivery methods would likely improve the system (Fletcher and Gordon, 2017). It evokes contemplations on the balance between a utilitarian approach, where education is perceived predominantly as a tool for job readiness, and a broader educational perspective advocating for the holistic development of individuals, nurturing not only job-specific skills but attributes that foster adaptability and lifelong learning (Fletcher and Gordon, 2017). This suggests that all forms of education, not just vocational forms, should consider what the purpose of education is: if it is to create a well-rounded population with the capability to be flexible and follow their own interests, limited curricula such as those found in many vocational education systems may not be appropriate.

Drawing the threads together, it becomes evident that the curriculum designs and delivery approaches adopted in the UK, China, and the US present both potentials and challenges in sculpting a workforce that is aligned with industry requisites, yet flexible enough to navigate a dynamic global job market. It underscores the imperative of forging pathways that not only respond to the immediate demands of industries but also anticipate the fluidity of future landscapes, nurturing learners who are adept, adaptable, and ready to carve out meaningful careers in a globally interconnected world. The road ahead in vocational education thus appears to be one of striking a harmonious balance, fostering curricula that are both responsive to industry demands and enriched with a broader educational philosophy, crafting a future workforce that is both skilled and adaptable, ready to engage dynamically with the evolving global industry.

5.3 Effect of Teaching and Learning Strategies on Students' Skill Acquisition, Motivation, and Workforce Preparation

Examining the vocational education systems of the UK, China, and the US unearths complex interrelations between teaching and learning strategies and their effects on students' skill acquisition, motivation, and preparedness for the workforce. In the UK, a concerted move has been towards fostering learner-centric environments where the emphasis is not just on skill

acquisition but also on nurturing a mindset geared towards continuous learning (Straw, Sims and England, 2019). This approach has championed the cause of embedding critical thinking and problem-solving skills in the curriculum, thus facilitating a deeper engagement with the learning material and fostering a motivated learner base prepared to tackle the complexities of the modern workplace. A consideration, however, is the challenge in ensuring consistent quality and depth in such environments, given the broader scope and learner autonomy that it encourages. There is a need to understand how best to motivate these students within this system and ensure that they have enough structure to ensure the quality of these qualifications (Straw, Sims and England, 2019).

In contrast, China's vocational education sector demonstrates a focused approach, honing in on targeted skill acquisition to meet the fast-paced development needs of various industry sectors. It promotes a strong work ethic and a high level of discipline among learners, preparing them efficiently for specific industries, something which is common in the Chinese educational system more generally (Zhai, 2006). This targeted approach, while highly efficient in producing industry-ready individuals, does beg the question of whether it offers sufficient space for fostering motivation and in-depth learning, critical in a rapidly evolving job market. The US, with its decentralised educational structure, exhibits a vibrant diversity in teaching and learning strategies, grounded in regional specificities and the needs of local industry (Young and Hordern, 2020). It offers a rich tapestry of learning environments, fostering innovation and promoting adaptability through a curriculum that is closely aligned with local industry needs (Young and Hordern, 2020). This framework creates a pathway for students to engage with learning at a more personal and immediate level, fostering motivation and a direct understanding of the relevance of their skill acquisition to the local economy. However, this localised focus does raise questions regarding the comprehensive preparation of students for a globally competitive workforce. There may be challenges if an individual is trained in vocational skills in one state or country and then wishes to use this knowledge elsewhere, particularly if the qualifications are not transferrable.

These disparate approaches illuminate a critical dimension of vocational education — the continuous negotiation between targeted skill acquisition and the cultivation of a rich, adaptable learning foundation that could be applied to a variety of different careers (Li and Pilz, 2021). With the world changing as fast as it is, students need to be prepared for a multitude of different technological integrations and perhaps the change of the working world as we know it (Minglun, 2017), which means that vocational qualifications that are highly specialised may

not be appropriate for the needs of these students in the future (Young and Hordern, 2020). It unravels a dynamic landscape where teaching and learning strategies are not just facilitators of skill transfer but pivotal agents in shaping the motivations and future trajectories of learners and ensuring that they develop softer skills, like critical thinking and career skills that are more transferrable (Li and Pilz, 2021). It beckons a deeper analysis into how these strategies can foster a robust foundation that not only prepares students for immediate entry into the workforce, but nurtures lifelong learners equipped to navigate a multifaceted career landscape with agility and competence.

In summary, the strategies adopted by these nations offer distinct pathways in facilitating skill acquisition, nurturing motivation, and preparing students for the workforce, each with its strengths and areas for contemplation. As vocational education strides forward, it stands at a juncture where the integration of diverse teaching strategies promises a rich, multifaceted educational landscape fostering both skill acquisition and the development of motivated, globally competent individuals. It invites a visionary approach, seeking to harmonise the immediate demands of skill acquisition with the long-term vision of nurturing adaptable, motivated learners ready to flourish in a dynamically evolving workforce.

5.4 Role of Industry Collaboration and Partnerships in Job Prospects and Alignment of Skills with Industry Demands

The role of industry collaboration and partnerships in shaping job prospects and aligning skills with industry demands is pivotal, and its manifestations are diversely reflected in the vocational education landscapes of the UK, China, and the United States. In the UK, the industry collaboration is seen to be both deep and broad, where educational institutions often work hand-in-hand with industry stakeholders to ensure that the curriculum remains aligned with the current needs of the labour market. This approach aids in fine-tuning the skillsets imparted to students, fostering a generation of work-ready individuals who are trained in line with industry expectations. These collaborations often facilitate direct pathways to employment through apprenticeships and on-the-job training opportunities, which can be beneficial in giving students confidence in their industry (Li and Pilz, 2021). While this symbiotic relationship harbours many strengths, it poses a continuous challenge of keeping the educational content updated and relevant amidst rapidly evolving industry dynamics. The Chinese educational landscape, on the other hand, exhibits government-induced partnerships where policy-driven industry collaborations are a prominent feature, which may introduce bias into the vocational education system (Li and Pilz, 2021). This systematic integration often manifests in the form

of industry-specific hubs that foster an enriched learning environment through practical exposure and industry insights. While this facilitates a smooth transition of students into relevant industries, it also raises pertinent questions about the potential over-specialisation and the scope for cross-industry skill transferability and the long-term benefits of this approach (Li and Pilz, 2021).

Contrastingly, the United States presents a mosaic of industry-academia collaborations steered at the regional level, harbouring both opportunities and complexities in terms of meeting the students' needs and ensuring that it remains consistent (Young and Hordern, 2020). While this decentralised approach encourages a rich and diverse landscape for vocational education, nurturing innovations through close-knit community and industry engagements, it may potentially lead to regional disparities in educational outcomes (Snell, 2018). The challenge here lies in maintaining a national standard without stifling the rich diversity and adaptability fostered through region-specific industry collaborations (Snell, 2018). This multi-faceted examination brings forth a rich tapestry of strategies adopted across these nations, shedding light on the critical role played by industry collaborations in sculpting not just individual job prospects but the broader alignment of educational outcomes with industry demands. It poses a reflective inquiry into the delicate balance between fostering industry relevance and encouraging a broader educational purview that supports adaptability and lifelong learning.

In synthesising these perspectives, it becomes apparent that while each approach harbours distinct strengths, they collectively echo the pressing need for a fluid and adaptable vocational education landscape that can pivot with changing industry demands while fostering job readiness amongst graduates (Li and Pilz, 2021). It is clear that each of these systems have their benefits, but there are challenges in terms of maintaining these connections and ensuring that they deliver high quality educational standards to students as they develop their skills (Li and Pilz, 2021). Industry collaborations and partnerships, therefore, stand as powerful tools in this endeavour, bridging the gap between educational institutions and the ever-evolving global job market and should be leveraged as much as possible, while maintaining the rigorous academic standards that vocational education needs to survive (Snell, 2018). They represent a dynamic space of convergence, where education meets industry, fostering a symbiotic growth nurtured through continuous dialogue, knowledge sharing, and mutual growth, beckoning a future of vocational education that is not just responsive but visionary, prepared to navigate the undulating terrains of a globally connected workforce.

6. Conclusion and Recommendations

6.1 Summary of Findings

The comparative analysis of the vocational education systems in the UK, China, and the US reveals nuanced approaches to policy frameworks, curriculum designs, teaching strategies, and industry collaborations. Each nation harbours distinctive strategies reflecting their socio-economic landscapes and educational philosophies. While each approach presents substantial benefits, including fostering work-ready individuals with industry-relevant skill sets and encouraging a rich diversity of learning environments, they also invite challenges that warrant careful contemplation. Central to these is the need to maintain a harmonious balance between offering specialised, industry-ready skillsets and nurturing individuals capable of adapting to a fast-paced, ever-evolving global job market. These narratives from different geographies thus illuminate the complex, dynamic interplay of numerous factors in vocational education, each steering towards a future that seeks not only to respond adeptly to industry demands but to envisage and shape a landscape fostering lifelong learners equipped to navigate a multifaceted career landscape with competence and agility.

6.2 Limitations of the Research

The analyses presented delve deep into the vocational education landscapes of the UK, China, and the US, offering valuable insights derived from a comparative stance. However, it bears mentioning that these insights are primarily drawn from a macro-perspective, potentially overlooking the granular, on-the-ground realities that are equally vital in shaping the vocational education spectrum in these regions. Moreover, the dynamic nature of educational policies and industry demands necessitates a continuously evolving analysis; what holds true today may undergo substantial shifts in the coming years, given the rapid advancements and disruptions in various industry sectors. Additionally, the regional disparities within each country, especially in large and diverse nations like China and the US, present a limitation, as a comprehensive analysis would ideally entail a more segmented, region-specific study to truly encompass the diverse educational approaches and outcomes prevalent. Thus, while the analysis aims to offer a broad, comparative perspective, it carries the inherent limitation of possibly not fully encapsulating the myriad nuances and rapid fluctuations that characterize the contemporary vocational educational landscapes.

6.3 Implications for Policy and Practice

Given the intricacies of vocational education canvassed throughout this discussion, it becomes evident that policies must be robust and attuned to a rapidly evolving educational landscape. It is incumbent upon policymakers to formulate strategies that take a broad spectrum of factors into account including, but not limited to, curriculum design, teaching strategies, and industry collaborations. Attention should be directed towards fostering an education system that not only prioritizes skill acquisition but also emphasises the social aspects of learning. This involves creating policies that facilitate partnerships between educational institutions and industries, thus providing students with a more practical and immersive learning experience. Additionally, international comparisons suggest that a consideration of different cultural contexts could be vital in designing policies that are both comprehensive and effective, taking the best practices from a range of educational landscapes.

On a practical level, educators in the vocational sector should aim to incorporate a wide range of teaching strategies that move beyond traditional didactic methods to include more hands-on, experiential learning opportunities. The focus should be on nurturing environments that are conducive to active participation, where learning is not just a solitary activity but a community experience. Developing curricula that are reflective of the demands of the modern workplace is crucial. Additionally, drawing from the cross-national analyses discussed, there is a valuable opportunity to integrate successful strategies from different contexts into one's teaching approach. It might be beneficial to adopt a flexible approach to teaching, one that is responsive to the evolving needs of students and the industry. By promoting a culture of continuous learning and adaptation, vocational education can remain at the forefront of industry developments, preparing students to be dynamic members of the workforce.

6.4 Recommendations for Future Research

Building upon the discussion in this study, several avenues for future research become apparent. Delving into a detailed, granular analysis of teaching and learning strategies across distinct vocational settings in the UK, China, and the US could be instrumental. It is essential to explore the broader ramifications of these strategies in various contexts, examining the outcomes and determining the most effective approaches.

Another vital area for further investigation is the ongoing advancement in technology and the shifting dynamics of various industries today. Research dedicated to the seamless integration of contemporary industry requirements into the vocational education curriculum might prove

beneficial. This would mean not only revisiting the curriculum periodically but also scrutinising the delivery methods to maintain a high level of efficacy. In addition, a profound exploration of the long-term impacts of industry partnerships and collaborations warrants attention. Here, the focus should be on identifying areas for enhancement by following vocational education graduates into their early careers to gather insights on the tangible benefits derived from industry collaborations and partnerships.

Lastly, considering the global scope of this study, there is room for comparative studies focused on policy frameworks and governance structures across different countries. Such research could unearth novel approaches and fresh perspectives that have the potential to elevate the global vocational education landscape. Understanding how various nations navigated educational challenges during the global pandemic might provide valuable lessons on building resilience and adaptability in vocational education systems, setting a robust foundation for the educational demands of the future.

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Appendices

8.1 List of Databases and Search Terms

Databases Utilised:

1. ERIC
2. Google Scholar
3. Scopus
4. University Library

Search Terms:

To carry out a comprehensive literature search, a combination of the following search terms was utilised:

- "Vocational Education"
- "Policy Frameworks"
- "Governance Structures"
- "Curriculum Design"
- "Teaching Strategies"
- "Learning Strategies"
- "Industry Collaboration"
- "Industry Partnerships"
- "Graduate Employability"
- "United Kingdom"
- "China"
- "United States"

Boolean Operators:

To narrow down the search and obtain the most relevant literature, the following Boolean operators were applied:

- AND
- OR
- NOT

Search Strings:

Utilising the above search terms and Boolean operators, the following search strings were constructed:

- "Vocational Education" AND "Policy Frameworks" AND ("United Kingdom" OR "China" OR "United States")
- "Vocational Education" AND "Governance Structures" AND ("United Kingdom" OR "China" OR "United States")
- "Vocational Education" AND "Curriculum Design" AND ("United Kingdom" OR "China" OR "United States")
- ("Vocational Education" AND "Industry Collaboration" AND ("United Kingdom" OR "China" OR "United States")) NOT "Graduate Employability"

Filters Applied:

To further refine the search, the following filters were applied:

- Date Range: 2010-2021
- Language: English OR Chinese
- Peer-Reviewed Journals

Initial and Final Yield:

- Initial yield of literature: 3142
- Literature reviewed in-depth: 277
- Final yield utilised in the research: 80

Search Strategy Rationale:

The rationale behind the detailed search strategy was to acquire the most pertinent, recent, and high-quality literature that comprehensively covers the various facets of vocational education in the United Kingdom, China, and the United States. The search terms were chosen based on their direct relevance to the research questions, while the filters were applied to maintain a focus on the most recent developments in the field and to ensure the credibility of the sources used.

8.2 Inclusion and Exclusion Criteria

Inclusion Criteria:

- Geographic Focus: Studies focusing on the United Kingdom, China, and the United States.
- Time Frame: Publications dated from 2010 to 2021 to ensure the relevance and timeliness of the data.
- Language: Only articles published in English or Chinese were considered to ensure a cohesive analysis and to adhere to the linguistic scope of this research.
- Publication Type: Peer-reviewed articles from reputable journals and official government publications to ensure the credibility and reliability of the data.
- Content: Research articles directly addressing vocational education in terms of policy frameworks, governance structures, curriculum designs, teaching and learning strategies, and industry collaboration and partnerships.

Exclusion Criteria:

- Geographic Focus: Studies focusing on regions other than the specified countries (the UK, China, and the US) were excluded to maintain a clear comparative analysis within the defined geographic scope.
- Time Frame: Publications dated before 2010 were excluded to maintain the contemporary relevance of the research.
- Language: Non-English and Non-Chinese articles were excluded to avoid potential misinterpretations during translation and to maintain linguistic consistency.
- Publication Type: Opinions, commentaries, and non-peer-reviewed articles were excluded to uphold the scholarly standard and reliability of the research.
- Content: Research not directly related to the themes of vocational education outlined in the inclusion criteria was excluded to maintain a focused approach to answering the research questions.

Criteria Rationale:

The inclusion and exclusion criteria were deliberately framed to uphold the rigour and focus of the research. A careful selection of geographically relevant and contemporaneous publications ensured a relevant and robust comparative analysis. The choice to focus solely on English or Chinese language publications ensured linguistic consistency, while emphasizing peer-reviewed and official sources assured the credibility of the data collected. By specifying content-related criteria, the research remained targeted, addressing the central issues outlined in the research questions in a structured and disciplined manner.

8.3 Data Extraction and Coding Framework

Data Extraction:

The data extraction process involved a meticulous analysis of the selected literature to retrieve pertinent data in line with the objectives and research questions of the study. The following data were extracted from each article:

- **Publication Details:** Author(s), year of publication, and source.
- **Geographic Focus:** The country (UK, China, US) focused on in the study.
- **Key Findings:** Major findings relevant to the policy frameworks, governance structures, curriculum designs, teaching and learning strategies, and industry collaborations and partnerships in vocational education.
- **Methodology:** The methodology employed in the study, including the research design and data collection methods.
- **Limitations:** Any limitations highlighted in the study.

Coding Framework:

To organise and analyse the data effectively, a thematic coding framework was developed. This involved the following stages:

- **Open Coding:** Initial codes were generated by analysis of the data line by line.
- **Axial Coding:** The initial codes were grouped into subcategories based on their relationships and patterns identified.
- **Selective Coding:** Core themes were developed by integrating the various categories and identifying central phenomena.

Thematic Analysis:

Following the coding, a thematic analysis was performed to derive meaningful insights from the data. This process was facilitated through the identification of main themes and subthemes which emerged during the coding process. The themes were reviewed and refined to align seamlessly with the research questions and objectives of the study.

Coding Rationale:

The coding framework was devised to foster a systematic and structured analysis of the extracted data. The multi-stage coding process, encompassing open, axial, and selective coding,

facilitated a deep, layered analysis, enabling the emergence of nuanced insights and rich thematic patterns, which formed the bedrock of the research findings.

8.4 Ethics Form

APPLICATION FOR ETHICAL APPROVAL

In order for research to result in benefit and minimise risk of harm, it must be conducted ethically. A researcher may not be covered by the University's insurance if ethical approval has not been obtained prior to commencement.

The University follows the OECD Frascati manual definition of **research activity**: "creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications". As such this covers activities undertaken by members of staff, postgraduate research students, and both taught postgraduate and undergraduate students working on dissertations/projects.

The individual undertaking the research activity is known as the "principal researcher".

Ethical approval is not required for routine audits, performance reviews, quality assurance studies, testing within normal educational requirements, and literary or artistic criticism.

Please read the notes for guidance before completing ALL sections of the form.

This form must be completed and approved prior to undertaking any research activity. Please see Checklist for details of process for different categories of application.

SECTION A: About You (Principal Researcher)

1	Full Name:	Ye Yingheng			
2	Tick all boxes that apply:	Member of staff:	☐	Honorary research fellow:	☐
	Undergraduate Student	☐	Taught Postgraduate Student	☒	Postgraduate Research Student
3	Institute/Academic Discipline/Centre:	University of Wales Trinity Saint David			
4	Campus:	Swansea			
5	E-mail address:	2216371@student.uwtsd.ac.uk			
6	Contact Telephone Number:	+86 17665649128			
For students:					
7	Student Number:	2216371			
8	Programme of Study:	MA Education Studies			
9	Director of Studies/Supervisor:	Lynda Maddock			

SECTION B: Approval for Research Activity

1	Has the research activity received approval in principle? (please check the Guidance Notes as to the appropriate approval process for different levels of research by different categories of individual)	YES	☐	NO	☒
					Date
2	If Yes, please indicate source of approval (and date where known): Approval in principle must be obtained from the relevant source prior to seeking ethical approval	Research Degrees Committee	☐		
Institute Research Committee		☐			
Other (write in)		☐			

SECTION C: Internal and External Ethical Guidance Materials

	Please list the core ethical guidance documents that have been referred to during the completion of this form (including any discipline-specific codes of research ethics, location-specific codes of research ethics, and also any specific ethical guidance relating to the proposed methodology). Please tick to confirm that your research proposal adheres to these codes and guidelines. You may add rows to this table if needed.
1	UWTSD Research Ethics & Integrity Code of Practice ☒
2	UWTSD Research Data Management Policy ☒
3	[List any other relevant documents here] ☐

SECTION D: External Collaborative Research Activity

If there are external collaborators then you should gain consent from the contact persons to share their personal data with the university. If there are no external collaborators then leave this section blank and continue to section E.

1	Institution					
2	Contact person name					
3	Contact person e-mail address					
4	Is your research externally funded?	YES	☐	NO	☐	
5	Are you in receipt of a KESS scholarship?	YES	☐	NO	☐	
6	Are you specifically employed to undertake this research in either a paid or voluntary capacity?	Voluntary	YES	☐	NO	☐
7		Employed	YES	☐	NO	☐
8	Is the research being undertaken within an existing UWTSD Athrofa Professional Learning Partnership (APLP)?	If YES then the permission question below does not need to be answered.	YES	☐	NO	☐
9	Has permission to undertake the research has been provided by the partner organisation?	(If YES attach copy) If NO the application cannot continue	YES	☐	NO	☐

Where research activity is carried out in collaboration with an external organisation

10	Does this organisation have its own ethics approval system?	YES	☐	NO	☐
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	If Yes, please attach a copy of any final approval (or interim approval) from the organisation (this may be a copy of an email if appropriate).
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SECTION E: Details of Research Activity

1	Indicative title:	A Comparative Analysis of Vocational Education Systems in China, the United States, and the UK: Challenges, Strategies, and Lessons Learned		
2	Proposed start date:	March 20, 2023	Proposed end date:	September 1, 2023
	Introduction to the Research (maximum 300 words per section) Ensure that you write for a <u>Non-Specialist Audience</u> when outlining your response to the points below: <i>Purpose of Research Activity</i> <i>Proposed Research Question</i> <i>Aims of Research Activity</i> <i>Objectives of Research Activity</i> Demonstrate, briefly, how <u>Existing Research</u> has informed the proposed activity and explain <i>What the research activity will add to the body of knowledge</i> <i>How it addresses an area of importance.</i>			
3	Purpose of Research Activity This literature review dissertation aims to critically analyse and compare the vocational education systems in China, the United States, and the UK. These latter two countries have been selected because they are the two primary destinations for Chinese students studying abroad, thus these education systems clearly have something to offer to Chinese students more generally (Chen, 2022). By examining the policies, structures, curriculum designs, teaching methodologies, and industry partnerships present in these countries, this study seeks to present a comparative analysis of VE practices. The dissertation will provide insights into the strengths and weaknesses of the Chinese vocational education system, while giving an opportunity to learn about alternative systems and their strengths and weaknesses. The research aims to contribute to the ongoing dialogue on improving vocational education and enhancing the employability of graduates in both China and global contexts. (this box should expand as you type)			
4	Research Question - How do the policy frameworks and governance structures of vocational education in China compared to those in the UK and the United States? - What are the key similarities and differences in the curriculum designs and delivery approaches of vocational education in China, the United States, and the UK, and how do these factors contribute to graduates' employability and industry relevance? - What teaching and learning strategies are employed in VE in China, the UK, and the United States, and how do these strategies impact students' skill acquisition, motivation, and preparation for the workforce? - To what extent do industry collaboration and partnerships exist in vocational education systems in China, the UK, and the United States, and how do these partnerships contribute to graduates' job prospects and the alignment of skills with industry demands? These questions have all been developed based on the aforementioned statement of the issue and are all intended to be answered within the context of this dissertation. (this box should expand as you type)			
5	Aims of Research Activity			

	1. Evaluate the policy frameworks and governance structures of vocational education in China compared with those in the UK and the U.S. 2. Evaluate the similarities and differences between these systems and their association with employability. 3. Understand the teaching and learning strategies in place for vocational education in these three countries. (this box should expand as you type)
6	Objectives of Research Activity 1. Research and summarise policy frameworks and governance structures of systems in China, the UK, and the United States. 2. Conduct a comparative analysis of these three systems and graduate employability. (this box should expand as you type)
	Proposed methods (maximum 600 words) Provide a brief summary of all the methods that may be used in the research activity, making it clear what specific techniques may be used. If methods other than those listed in this section are deemed appropriate later, additional ethical approval for those methods will be needed. You do not need to justify the methods here, but should instead describe how you intend to collect the data necessary for you to complete your project.
7	This study is qualitative and will use a comprehensive literature review approach to analyse and compare the vocational education systems in China, the UK, and the US to answer the research questions outlined above. The research method will involve a systematic and rigorous examination of scholarly articles, books, reports, and official documents related to vocational education in the selected countries. The first stage is the identification of relevant literature. A thorough search will be conducted across various academic databases, including the Trinity St. David Library database and Google Scholar. There are risks associated with the use of these databases, particularly Google Scholar, including veracity of the information. This will be accounted for by ensuring that the literature that is used has been published in a peer-reviewed journal and through checking the impact factor of each of these journals. Keywords such as "vocational education," "technical education," "China," "UK," and "US" will be used as part of a Boolean search approach to retrieve relevant literature; the search will be limited to peer-reviewed articles and recent publications to ensure the inclusion of current research. The aim is to include any study published in English within the last 15 years to ensure that the study is relevant to the current context, although older texts may be used to develop the framework. Other inclusion and exclusion criteria will be formalised upon approval of this proposal. After the relevant literature has been identified, the data will be extracted from the selected studies and organised based on thematic categories, such as policy frameworks, curriculum design, teaching and learning strategies, and industry partnerships. The extracted data will be synthesised to identify patterns, similarities, differences, and key findings related to VE in these countries. The synthesized data will be used as part of a comparative analysis of the VE systems in the three countries. This analysis will involve identifying similarities and differences across various dimensions, including policy frameworks, curriculum design, teaching and learning strategies, and industry collaborations. The comparative analysis will provide insights into the strengths, weaknesses, challenges, and success factors of VE practices in each country. (this box should expand as you type)
	Location of research activity Identify all locations where research activity will take place.
8	Researcher home, university library. There are risks associated with these locations, including ensuring the security of the information that is gathered and manipulated. This will be accounted for

	by ensuring that all data is kept password protected and in both cases is only accessed using the private laptop of the researcher, which is also password protected. (this box should expand as you type)
	Research activity outside of the UK If research activity will take place overseas, you are responsible for ensuring that local ethical considerations are complied with and that the relevant permissions are sought. Specify any local guidelines (e.g. from local professional associations/learned societies/universities) that exist and whether these involve any ethical stipulations beyond those usual in the UK (provide details of any licenses or permissions required). Also specify whether there are any specific ethical issues raised by the local context in which the research activity is taking place, for example, particular cultural and/or legal sensitivities or vulnerabilities of participants. If you live in the country where you will do the research then please state this.
9	N/A (this box should expand as you type)

10	Use of documentation not in the public domain: Are any documents NOT publicly available?	NO	☐
		YES	☒
11	If Yes, please provide details here of how you will gain access to specific documentation that is not in the public domain and that this is in accordance with the current data protection law of the country in question and that of England and Wales. (this box should expand as you type)		

	Does your research relate to one or more of the seven aims of the Well-being of Future Generations (Wales) Act 2015?	YES	NO
12	A prosperous Wales	☐	☒
13	A resilient Wales	☐	☒
14	A healthier Wales	☐	☒
15	A more equal Wales	☐	☒
16	A Wales of cohesive communities	☐	☒
17	A Wales of vibrant culture and thriving Welsh language	☐	☒
18	A globally responsible Wales	☐	☒
19	If YES to any of the above, please give details:		
	N/A (this box should expand as you type)		

SECTION F: Scope of Research Activity

	Will the research activity include:	YES	NO
1	Use of a questionnaire or similar research instrument?	☐	☒

2	Use of interviews?	☐	☒
3	Use of focus groups?	☐	☒
4	Use of participant diaries?	☐	☒
5	Use of video or audio recording?	☐	☒
6	Use of computer-generated log files?	☐	☒
7	Participant observation with their knowledge?	☐	☒
8	Participant observation without their knowledge?	☐	☒
9	Access to personal or confidential information without the participants' specific consent?	☐	☒
10	Administration of any questions, test stimuli, presentation that may be experienced as physically, mentally or emotionally harmful / offensive?	☐	☒
11	Performance of any acts which may cause embarrassment or affect self-esteem?	☐	☒
12	Investigation of participants involved in illegal activities?	☐	☒
13	Use of procedures that involve deception?	☐	☒
14	Administration of any substance, agent or placebo?	☐	☒
15	Working with live vertebrate animals?	☐	☒
16	Procedures that may have a negative impact on the environment?	☐	☒
17	Other primary data collection methods. Please indicate the type of data collection method(s) below.	☒	☐
	Details of any other primary data collection method: Literature review, desk-based study. (this box should expand as you type)		

If NO to every question, then the research activity is (ethically) low risk and **may** be exempt from **some** of the following sections (please refer to Guidance Notes).

If YES to any question, then no research activity should be undertaken until full ethical approval has been obtained.

SECTION G: Intended Participants

If there are no participants then do not complete this section, but go directly to section H.

	Who are the intended participants:	YES	NO
1	Students or staff at the University?	☐	☒
2	Adults (over the age of 18 and competent to give consent)?	☐	☒
3	Vulnerable adults?	☐	☒
4	Children and Young People under the age of 18? (Consent from Parent, Carer or Guardian will be required)	☐	☒
5	Prisoners?	☐	☒
6	Young offenders?	☐	☒
7	Those who could be considered to have a particularly dependent relationship with the investigator or a gatekeeper?	☐	☒

8	People engaged in illegal activities?	☐	☒
9	Others. Please indicate the participants below, and specifically any group who may be unable to give consent.	☐	☒
	Details of any other participant groups: (this box should expand as you type)		

Participant numbers and source Provide an estimate of the expected number of participants. How will you identify participants and how will they be recruited?	
10	How many participants are expected? (this box should expand as you type)
11	Who will the participants be? (this box should expand as you type)
12	How will you identify the participants? (this box should expand as you type)

Information for participants:		YES	NO	N/A
13	Will you describe the main research procedures to participants in advance, so that they are informed about what to expect?	☐	☐	☒
14	Will you tell participants that their participation is voluntary?	☐	☐	☒
15	Will you obtain written consent for participation?	☐	☐	☒
16	Will you explain to participants that refusal to participate in the research will not affect their treatment or education (if relevant)?	☐	☐	☒
17	If the research is observational, will you ask participants for their consent to being observed?	☐	☐	☒
18	Will you tell participants that they may withdraw from the research at any time and for any reason?	☐	☐	☒
19	With questionnaires, will you give participants the option of omitting questions they do not want to answer?	☐	☐	☒
20	Will you tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs?	☐	☐	☒
21	Will you debrief participants at the end of their participation, in a way appropriate to the type of research undertaken?	☐	☐	☒
22	If NO to any of above questions, please give an explanation (this box should expand as you type)			

Information for participants:		YES	NO	N/A
24	Will participants be paid?	☐	☐	☒
25	Is specialist electrical or other equipment to be used with participants?	☐	☐	☒

26	Are there any financial or other interests to the investigator or University arising from this study?	☐	☐	☒
27	Will the research activity involve deliberately misleading participants in any way, or the partial or full concealment of the specific study aims?	☐	☐	☒
28	If YES to any question, please provide full details			
<i>(this box should expand as you type)</i>				

SECTION H: Anticipated Risks

Outline any anticipated risks that may adversely affect any of the participants, the researchers and/or the University, and the steps that will be taken to address them. If you have completed a full risk assessment (for example as required by a laboratory, or external research collaborator) you may append that to this form.					
1	Full risk assessment completed and appended? <table border="1"> <tr> <td>Yes</td> <td>☐</td> </tr> <tr> <td>No</td> <td>☒</td> </tr> </table>	Yes	☐	No	☒
Yes	☐				
No	☒				
2	Risks to participants For example: sector-specific health & safety, emotional distress, financial disclosure, physical harm, transfer of personal data, sensitive organisational information				
	<table border="1"> <tr> <td> Risk to participants: N/A <i>(this box should expand as you type)</i> </td> <td> How you will mitigate the risk to participants: N/A <i>(this box should expand as you type)</i> </td> </tr> </table>	Risk to participants: N/A <i>(this box should expand as you type)</i>	How you will mitigate the risk to participants: N/A <i>(this box should expand as you type)</i>		
Risk to participants: N/A <i>(this box should expand as you type)</i>	How you will mitigate the risk to participants: N/A <i>(this box should expand as you type)</i>				
3	If research activity may include sensitive, embarrassing or upsetting topics (e.g. sexual activity, drug use) or issues likely to disclose information requiring further action (e.g. criminal activity), give details of the procedures to deal with these issues, including any support/advice (e.g. helpline numbers) to be offered to participants. Note that where applicable, consent procedures should make it clear that if something potentially or actually illegal is discovered in the course of a project, it may need to be disclosed to the proper authorities				
	N/A <i>(this box should expand as you type)</i>				
4	Risks to the investigator For example: personal health & safety, physical harm, emotional distress, risk of accusation of harm/impropriety, conflict of interest				
	<table border="1"> <tr> <td> Risk to the investigator: Stress, solitary working <i>(this box should expand as you type)</i> </td> <td> How you will mitigate the risk to the investigator: Regular breaks will be taken to ensure that stress is minimised. Regular contact with supervisor to ensure that the project is on track. <i>(this box should expand as you type)</i> </td> </tr> </table>	Risk to the investigator: Stress, solitary working <i>(this box should expand as you type)</i>	How you will mitigate the risk to the investigator: Regular breaks will be taken to ensure that stress is minimised. Regular contact with supervisor to ensure that the project is on track. <i>(this box should expand as you type)</i>		
Risk to the investigator: Stress, solitary working <i>(this box should expand as you type)</i>	How you will mitigate the risk to the investigator: Regular breaks will be taken to ensure that stress is minimised. Regular contact with supervisor to ensure that the project is on track. <i>(this box should expand as you type)</i>				
5	University/institutional risks For example: adverse publicity, financial loss, data protection				
	<table border="1"> <tr> <td> Risk to the University: Adverse publicity <i>(this box should expand as you type)</i> </td> <td> How you will mitigate the risk to the University: The researcher will ensure that all data is interpreted correctly and that the study is accurate. <i>(this box should expand as you type)</i> </td> </tr> </table>	Risk to the University: Adverse publicity <i>(this box should expand as you type)</i>	How you will mitigate the risk to the University: The researcher will ensure that all data is interpreted correctly and that the study is accurate. <i>(this box should expand as you type)</i>		
Risk to the University: Adverse publicity <i>(this box should expand as you type)</i>	How you will mitigate the risk to the University: The researcher will ensure that all data is interpreted correctly and that the study is accurate. <i>(this box should expand as you type)</i>				
6	Environmental risks For example: accidental spillage of pollutants, damage to local ecosystems				

	Risk to the environment: Damage to the environment from electricity usage <i>(this box should expand as you type)</i>	<i>How you will mitigate the risk to environment:</i> Ensure that computers are all turned off while work is not underway. <i>(this box should expand as you type)</i>
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	Disclosure and Barring Service			
	If the research activity involves children or vulnerable adults, a Disclosure and Barring Service (DBS) certificate must be obtained before any contact with such participants.	YES	NO	N/A
7	Does your research require you to hold a current DBS Certificate?	☐	☐	☒
8	If YES, please give the certificate number. If the certificate number is not available please write "Pending"; in this case any ethical approval will be subject to providing the appropriate certificate number.			

SECTION I: Feedback, Consent and Confidentiality

1	Feedback What de-briefing and feedback will be provided to participants, how will this be done and when?
	N/A <i>(this box should expand as you type)</i>
2	Informed consent Describe the arrangements to inform potential participants, before providing consent, of what is involved in participating. Describe the arrangements for participants to provide full consent before data collection begins. If gaining consent in this way is inappropriate, explain how consent will be obtained and recorded in accordance with prevailing data protection legislation.
	N/A <i>(this box should expand as you type)</i>
3	Confidentiality / Anonymity Set out how anonymity of participants and confidentiality will be ensured in any outputs. If anonymity is not being offered, explain why this is the case.
	N/A <i>(this box should expand as you type)</i>

SECTION J: Data Protection and Storage

	Does the research activity involve personal data (as defined by the General Data Protection Regulation 2016 "GDPR" and the Data Protection Act 2018 "DPA")?	YES	NO
1	"Personal data" means any information relating to an identified or identifiable natural person ('data subject'). An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person. Any video or audio recordings of participants is considered to be personal data.	☐	☒
	If YES, provide a description of the data and explain why this data needs to be collected:		

2	(this box should expand as you type)		
	Does it involve special category data (as defined by the GDPR)?	YES	NO
3	“Special category data” means sensitive personal data consisting of information as to the data subjects’ – (a) racial or ethnic origin, (b) political opinions, (c) religious beliefs or other beliefs of a similar nature, (d) membership of a trade union (within the meaning of the Trade Union and Labour Relations (Consolidation) Act 1992), (e) physical or mental health or condition, (f) sexual life, (g) genetics, (h) biometric data (as used for ID purposes),	☐	☒
	If YES, provide a description of the special category data and explain why this data needs to be collected:		
4	(this box should expand as you type)		

	Will data from the research activity (collected data, drafts of the thesis, or materials for publication) be stored in any of the following ways?	YES	NO
5	Manual files (i.e. in paper form)?	☐	☒
6	University computers?	☒	☐
7	Private company computers?	☐	☒
8	Home or other personal computers?	☒	☐
9	Laptop computers/ CDs/ Portable disk-drives/ memory sticks?	☒	☐
10	“Cloud” storage or websites?	☒	☐
11	Other – specify:	☐	☒
12	For all stored data, explain the measures in place to ensure the security of the data collected, data confidentiality, including details of backup procedures, password protection, encryption, anonymisation and pseudonymisation:		
	All data will password protected and only accessible to the researcher. There will be no personal information stored. There will be UWTSD One Drive security. There are risks of using a home personal laptop, including ensuring that the laptop does not have any viruses or trojans which report the information to outside users. This is going to be protected against by regularly using antivirus software. (this box should expand as you type)		

	Data Protection		
	Will the research activity involve any of the following activities:	YES	NO
13	Electronic transfer of data in any form?	☐	☒
14	Sharing of data with others at the University outside of the immediate research team?	☐	☒
15	Sharing of data with other organisations?	☐	☒
16	Export of data outside the UK or importing of data from outside the UK?	☐	☒

17	Use of personal addresses, postcodes, faxes, emails or telephone numbers?	☐	☒
18	Publication of data that might allow identification of individuals?	☐	☒
19	Use of data management system?	☐	☒
20	Data archiving?	☐	☒
21	If YES to any question, please provide full details, explaining how this will be conducted in accordance with the GDPR and Data Protection Act (2018) (and any international equivalents, where appropriate):		
	N/A <i>(this box should expand as you type)</i>		
22	List all who will have access to the data generated by the research activity:		
	<i>(this box should expand as you type)</i>		
23	List who will have control of, and act as custodian(s) for, data generated by the research activity:		
	N/A <i>(this box should expand as you type)</i>		
24	Give details of data storage arrangements, including security measures in place to protect the data, where data will be stored, how long for, and in what form. Will data be archived – if so how and if not why not.		
	Data will not be collected from participants. All data will be stored password protected. <i>(this box should expand as you type)</i>		
25	Please indicate if your data will be stored in the UWTSD Research Data Repository (see https://researchdata.uwtsd.ac.uk/). If so please explain. <i>(Most relevant to academic staff)</i>		
	N/A <i>(this box should expand as you type)</i>		
26	Confirm that you have read the UWTSD guidance on data management (see https://www.uwtsd.ac.uk/library/research-data-management/)	YES	☒
27	Confirm that you are aware that you need to keep all data until after your research has completed or the end of your funding	YES	☒

SECTION K: Declaration

	The information which I have provided is correct and complete to the best of my knowledge. I have attempted to identify any risks and issues related to the research activity and acknowledge my obligations and the rights of the participants. In submitting this application I hereby confirm that I undertake to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice which is published on the website: https://www.uwtsd.ac.uk/research/research-ethics/		
1	Signature of applicant:	Ye Yingheng	Date: October 7 2023

For STUDENT Submissions:

2	Director of Studies/Supervisor:		Date:
3	Signature:		

For STAFF Submissions:

4	Academic Director/ Assistant Dean:		Date:
5	Signature:		

Checklist: Please complete the checklist below to ensure that you have completed the form according to the guidelines and attached any required documentation:

☒	I have read the guidance notes supplied before completing the form.
☒	I have completed ALL RELEVANT sections of the form in full.
☐	I confirm that the research activity has received approval in principle
☐	I have attached a copy of final/interim approval from external organisation (where appropriate)
☐	I have attached a full risk assessment (where appropriate) ONLY TICK IF YOU HAVE ATTACHED A FULL RISK ASSESSMENT
☒	I understand that it is my responsibility to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice.
☒	I understand that before commencing data collection all documents aimed at respondents (including information sheets, consent forms, questionnaires, interview schedules etc.) must be confirmed by the DoS/Supervisor, module tutor or Academic Director.

RESEARCH STUDENTS AND STAFF ONLY

All communications relating to this application during its processing must be in writing and emailed to pgresearch@uwtsd.ac.uk, with the title 'Ethical Approval' followed by your name. You will be informed of the outcome of your claim by email; therefore it is important that you check your University and personal email accounts regularly.

STUDENTS ON UNDERGRADUATE OR TAUGHT MASTERS PROGRAMMES should submit this form (and receive the outcome) via systems explained to you by the supervisor/module leader.

This form is available electronically from the Academic Office web pages:
<https://www.uwtsd.ac.uk/academic-office/appendices-and-forms/>