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Research Article

Employment Skills Revisited: A Qualitative Exploration of Multi-Stakeholder Perspective in China's "3+1" Higher Education Context

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Abstract

The issue of employment for university students is receiving significant attention in China, leading to educational reforms aimed at enhancing students' employment skills and prospects. One such initiative is the "3+1" higher education programs, characterized by work-based learning. However, the effectiveness of this initiative falls short of expectations due to insufficient understanding of the up-to-date employment skills required by the industry. As such, this qualitative study explored stakeholders' perceptions regarding the employment skills needed by students enrolled in "3+1" programs. Key challenges and strategies associated with developing students ' employment skills were identified through interviews with students, teachers, curriculum planners, industry leaders, and human resource professionals. Findings revealed a consensus among stakeholders on the importance of developing a holistic skill set, acquiring practical experience, increasing adaptability and resilience, embracing lifelong learning, and improving communication skills. Challenges included mismatches between academic learning and industry demands, limited industry exposure, soft skill deficiency, inadequate assessment, insufficient university-industry cooperation, and students' low motivation, for which corresponding strategies were proposed. This study provides valuable insights into enhancing the employability of "3+1" graduates, emphasizing the importance of comprehensive education aligned with industry needs.

Keywords: Employment skills, higher education, "3+1" programs, stakeholders, China.

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1. Introduction

In contemporary China, university students grapple with a formidable challenge: securing employment upon graduation. Despite their commendable dedication to academic studies, many graduates face the harsh reality of limited job opportunities in an intensely competitive job market (Sun, 2017; Xiong et al., 2021; Yao et al., 2022). This pervasive issue has spurred educational policymakers and institutions to seek innovative solutions to bridge the gap between academic learning and industry demands. One such solution is the "3+1" higher education program, a distinctive model blending rigorous on-campus academic studies spanning three years with a year-long immersion in industry-based training (Yin, 2022), underpinned by the work-based learning (WBL) model characterized by the active involvement of students in real-world work environments and complementing theoretical knowledge gained in classrooms with practical experience (Luo & Cai, 2020). This hybrid approach offers students invaluable opportunities to apply theoretical concepts in authentic work settings, fostering the development of hands-on skills and industry-specific competencies.

The incorporation of WBL, particularly industry-based training, into the "3+1" program represents a paradigm shift in higher education, acknowledging the significance of practical experience alongside academic learning (Ji, 2021; Wang & Xia, 2020). By immersing students in authentic work environments for a year-long period, the program aims to bridge the gap between theory and practice, ensuring that graduates are well-equipped to meet the evolving demands of the job market. Endorsed by various educational authorities and institutions, the "3+1" program has garnered widespread popularity across China, with the goal of equipping students with practical skills and experiential knowledge directly pertinent to the dynamic requirements of the contemporary job market (Chen, 2022).

Despite the admirable intentions behind the implementation of "3+1" programs, however, a significant proportion of participating students encounter challenges in securing meaningful employment opportunities post-graduation (Jin et al., 2022; Ou, 2023; Quan, 2023). These employment struggles are often attributed to a perceived mismatch between the skills acquired through academic curricula and the evolving demands of industry (Dong & Liang, 2021; Wang & Xia, 2020). As industries rapidly evolve and embrace cutting-edge technologies and practices, there is a pressing need to identify and cultivate the up-to-date requisite skills and competencies that will enable "3+1" students to thrive in the dynamic workplace landscape. However, while Chinese researchers and scholars have endeavored to define employment skills for university students, most efforts have been focused on general higher education (Cao, 2018; Wang, 2023; Xiong et al., 2021), with few considering the special educational context of the "3+1" program. Additionally, while previously identified employment skills may hold true, they may not be sufficiently current, especially considering the evolving industry needs, particularly after the COVID-19 pandemic, which has posed significant challenges to employment (Hou, 2020).

Thus, this qualitative study aims to address this research gap by exploring the perceptions of multiple stakeholders, including students, teachers, curriculum planners, industry leaders, and human resource professionals, regarding the employment skills needed by students involved in China's "3+1" higher education programs. By delving into the nuanced perspectives of these stakeholders, this study seeks to gain valuable insights into the latest employment skills required

by industry and identify potential areas for enhancing the effectiveness of "3+1" programs in preparing students for successful careers. The research questions guiding this study are as follows:

- What are the perceptions of students, teachers, industry leaders, and human resource professionals regarding the employment skills needed by students enrolled in China's "3+1" higher education programs?
- What are the key challenges and strategies associated with developing and enhancing the employment skills of "3+1" students, thereby improving the employment outcomes of "3+1" graduates?

2. Literature Review

The "3+1" Program in China

The "3+1" program in China has emerged as a distinctive higher education model that has garnered increasing attention and adoption in recent years. This innovative program epitomizes a strategic response to the evolving needs of both students and industries in China's dynamic socio-economic landscape (Chen, 2022; Luo & Cai, 2020). As previously noted, the program is defined by its unique structure, comprising three years of rigorous on-campus academic studies, followed by a transformative one-year immersion in industry-based training. This juxtaposition of academic learning with hands-on industry experience underscores China's proactive approach to addressing the perennial challenge of aligning educational outcomes with the demands of the contemporary workforce (Wang, 2022).

The development of the "3+1" program can be traced back to the early 2000s when Chinese educational policymakers recognized the need to enhance the employability of university graduates in response to the changing demands of the job market (Wu & Wu, 2002). According to Yu (2021), the program was initially introduced as a pilot initiative in several universities before being scaled up nationwide, supported by government policies aimed at promoting WBL and fostering closer collaboration between academia and industry. After the success of this initiative, the "3+1" program gained further momentum and became an integral component of China's higher education landscape, with relevant policies emphasizing higher education with national priorities for economic development and innovation (Jin, 2021; Yu, 2021).

Central to the ethos of the "3+1" program is the recognition of the imperative to bridge the longstanding gap between academic theory and practical application in higher education. By integrating classroom learning with real-world industry exposure, the program seeks to nurture a cohort of graduates who possess theoretical knowledge, practical skills, and experiential insights necessary for success in today's competitive job market (Chen, 2022; Dong & Liang, 2021). This holistic approach reflects China's commitment to fostering a talent pool that is not only academically proficient but also professionally adept and industry-ready (Wang, 2022).

Moreover, the "3+1" program serves as a testament to China's forward-looking vision for higher education, characterized by a strategic alignment with the evolving needs and dynamics of the modern economy. Recognizing that traditional academic pathways may no longer suffice in equipping graduates with the requisite skills and competencies for career success, the program

represents a paradigm shift towards a more integrative and immersive educational model (Ji, 2021; Wang & Xia, 2020). By providing students with direct exposure to industry environments, emerging technologies, and professional practices, the program equips them with a competitive edge in navigating the complexities of the contemporary workplace (Wu & Wu, 2002; Zeng, 2017).

As mentioned, the "3+1" program is characterized by its emphasis on practical skills and experiential learning, aligning closely with the WBL model. Research by Ji (2021), Luo and Cai (2020) highlight the program's structured curriculum, which integrates theoretical knowledge with hands-on experience in real-world settings. This approach aims to equip students with the necessary competencies to succeed in their chosen fields upon graduation. As such, one of the key benefits of the "3+1" program is its potential to enhance students' employability and career prospects. Studies have shown that graduates of this program are better prepared for the demands of the modern workforce, with improved job readiness and higher employment rates than their counterparts from traditional academic programs (Cai, 2020; Yin, 2022; Zeng, 2017). The immersive industry experience gained during the one-year internship period is often cited as a significant factor contributing to this outcome.

Despite its perceived benefits, the "3+1" Program has also faced criticism and challenges. One common criticism is the potential mismatch between the skills acquired through the program and the evolving needs of the industry. Research by S. Chen (2020), Wang and Xia (2020) suggests that while the program equips students with practical skills, there may be gaps in areas such as critical thinking, creativity, and adaptability, which are increasingly valued by employers in today's fast-changing job market. Moreover, concerns have been raised about the quality and consistency of industry-based training experiences across different institutions and disciplines. L. Chen (2020), Qin and Lei (2024) note variations in the quality of internships and the level of engagement between students and industry partners, which can impact the overall effectiveness of the program in preparing students for the workforce.

Therefore, while the "3+1" program offers several benefits, including improved job readiness and higher employment rates, challenges remain in ensuring the program's relevance and effectiveness in meeting the evolving needs of the job market. Continued research and evaluation are essential to address these challenges and further optimize the program for the benefit of students and employers alike.

Employment Skills

Employment skills, also known as employability skills, encapsulate a broad spectrum of abilities, attributes, and qualities crucial for individuals to thrive in the dynamic landscape of the job market (Even & Christiansen, 2024; Hu, 2022). These skills serve as the foundation upon which individuals can successfully navigate various career pathways, contribute meaningfully to their respective fields, and achieve sustained success in their professional endeavors (Crisp et al., 2019). For students and graduates alike, mastering these skills is paramount as they transition from the structured confines of the educational setting to the multifaceted realities of the professional realm.

The components of employment skills encompass a diverse array of competencies, spanning both hard skills and soft skills. Hard skills typically refer to the technical proficiencies and specialized knowledge required to perform specific tasks or functions within a particular field or industry (Sandra et al., 2023). These skills are often quantifiable and measurable, involving mastery of specific tools, technologies, methodologies, or subject matter expertise (Silaban & Silalahi, 2020). Examples of hard skills include proficiency in programming languages, data analysis software, engineering principles, financial modeling, and technical design.

In contrast, soft skills encompass a broader set of interpersonal, communication, and behavioral attributes that are essential for effective collaboration, problem-solving, and relationship-building in professional settings (Jerome & Antony, 2018). These skills are more subjective and nuanced, focusing on individuals' abilities to interact with others, navigate complex situations, and demonstrate emotional intelligence and social acumen (Silaban & Silalahi, 2020). Soft skills play a pivotal role in shaping individuals' professional demeanor, leadership potential, and overall effectiveness in the workplace.

According to Liu et al.'s (2021) and Yunesman's (2023) Model of Employment Skills, common hard and soft skills include:

- Communication skills: The ability to articulate ideas clearly and persuasively, listen actively, and convey information effectively through written, verbal, and non-verbal means.
- Problem-solving skills: The capacity to identify challenges, analyze complex problems, generate innovative solutions, and make informed decisions based on critical thinking and reasoning.
- Information skills: The competence to locate, evaluate, interpret, and use information effectively from various sources, including digital and print media, databases, and online repositories.
- Teamwork skills: The aptitude to collaborate with others, build consensus, leverage collective strengths, and contribute positively to team dynamics and group cohesion.
- Technological skills: The familiarity and proficiency with digital tools, software applications, and technological platforms relevant to one's field or industry, including computer proficiency, digital literacy, and adaptability to emerging technologies.
- Entrepreneurial skills: The inclination towards innovation, creativity, risk-taking, and opportunity recognition, coupled with a proactive and resourceful approach to problem-solving and value creation.
- Leadership skills: The ability to inspire, motivate, and influence others, foster teamwork and collaboration, and lead by example through vision, integrity, and ethical decision-making.

Together, these components of employment skills contribute to individuals' overall competence, effectiveness, and employability in the contemporary job market.

The importance of employment skills, especially for university students, cannot be overstated. In today's rapidly changing job market, employers increasingly prioritize candidates who possess not only technical expertise but also a robust set of soft skills. According to research by World Economic Forum (2021), skills such as problem-solving, critical thinking, creativity, and emotional intelligence are among the most sought-after by employers globally. University students who develop these skills during their academic journey are better equipped to succeed in their chosen careers, adapt to evolving workplace dynamics, and thrive in a competitive job market (Sandra et al., 2023; Yunesman, 2023).

Education plays a pivotal role in nurturing students' employment skills, encompassing both disciplinary knowledge and the cultivation of soft skills essential for success in the professional arena. Higher education institutions bear the responsibility of preparing students for the complexities of the modern workforce by offering a comprehensive educational experience that extends beyond traditional classroom instruction (Crisp et al., 2019; Hu & Wang, 2024; Yunesman, 2023). One approach to achieving this goal involves the adoption of innovative pedagogical methods that promote active learning, critical thinking, and problem-solving skills (Even & Christiansen, 2024). Project-based learning and experiential learning opportunities, for instance, immerses students in real-world scenarios where they must collaborate, analyze information, and devise creative solutions to complex problems (Jerome & Antony, 2018). By engaging in hands-on projects, students develop not only subject-specific expertise but also transferable skills such as communication, teamwork, and adaptability.

Students, teachers, curriculum planners, and industry professionals all play crucial roles in developing students' employment skills. Students are active participants in their own learning journey, tasked with engaging in coursework, practical experiences, and self-reflection to enhance their skills and competencies (Sandra et al., 2023). Teachers, on the other hand, serve as facilitators and guides, providing guidance, feedback, and support to help students navigate their academic and professional development (Yunesman, 2023). Curriculum planners are responsible for designing and implementing educational programs that align with industry needs, ensuring that students receive relevant and up-to-date training (Crisp et al., 2019). Finally, industry professionals offer valuable insights, expertise, and mentorship opportunities, helping students bridge the gap between academic learning and real-world application (Liu et al., 2021). Together, these stakeholders collaborate to create an educational environment that fosters the holistic development of students and prepares them for success in their future careers.

Therefore, according to The Human Capital Theory, education serves as a catalyst for the development of students' employment skills, encompassing a multifaceted approach that combines disciplinary knowledge with the cultivation of soft skills (Roy, 2015). Through innovative pedagogical approaches, experiential learning opportunities, and co-curricular activities, higher education institutions can empower students to thrive in the dynamic and competitive landscape of the modern workforce.

3. Methodology

This qualitative study utilized a grounded theory approach to investigate the perceptions of

various stakeholders regarding the employment skills required by students enrolled in China's "3+1" higher education programs, as well as the challenges they encountered and recommendations for enhancing their employment prospects. The choice of the grounded theory approach was fitting for the research, as it enabled the identification of patterns, themes, and relationships within the data, leading to a comprehensive understanding of the complex phenomenon under scrutiny (Singh, 2023). Moreover, this approach offered flexibility in both data collection and analysis, permitting iterative refinement of the research focus and theoretical framework as fresh insights emerged from the data (Meeran, 2023).

The study took place in a prominent Chinese city hosting five higher education institutions offering "3+1" programs sanctioned by both local government and national authorities. These programs were actively engaged in collaboration with local industries. Given the nascent nature of the "3+1" program, the range of majors offered by these institutions was relatively limited compared to traditional full-time higher education. However, they encompassed fields vital to China's progressive industries, such as computer science (CS), engineering, and business management and economics (BME). This selection of institutions was purposeful, reflecting the dynamically evolving sectors within China and likely to yield insightful findings. Additionally, the researchers established strong social connections with key stakeholders at these institutions, who facilitated the study and provided essential resources, including access to industry professionals.

As noted, the study participants comprised various stakeholders engaged in the "3+1" program, including senior students who had completed or were undergoing the final one-year industry-based training, officially registered teachers who also served as curriculum planners, industry leaders, and human resource professionals. A total of 25 participants, a sample size adequate to achieve qualitative saturation (Hennink & Kaiser, 2020), were recruited for the study with informed consent. Their demographic information was detailed in Table 1, illustrating their diverse backgrounds and varying levels of experience, which ensured the representativeness of the sample. The snowball sampling technique was employed to enlist participants, whereby initial participants referred other potential participants. This method facilitated the identification of the sample in an efficient manner, leveraging the participants' social connections to reach a broader population (Singh, 2023). This advantage was particularly evident when recruiting individuals working in the industry through referrals from participant teachers.

Stakeholder	Sample Size	Participant	Gender	Field	Years of Learning/Teaching/Working
students	9	S1	male	BME	3.5 (senior student)
		S2	male	CS	4 (senior student)
		S3	female	BME	3.5 (senior student)
		S4	male	CS	4 (senior student)
		S5	female	BME	3.5 (senior student)

		S6	female	engineering	3.5 (senior student)
		S7	female	engineering	4 (senior student)
		S8	female	CS	3.5 (senior student)
		S9	male	engineering	4 (senior student)
teachers	8	T1	female	BME	11 (professor)
		T2	female	BME	4 (lecturer)
		T3	male	engineering	6 (associate professor)
		T4	male	CS	3 (lecturer)
		T5	female	engineering	8 (associate professor)
		T6	male	engineering	10 (professor)
		T7	female	BME	5 (lecturer)
		T8	female	CS	9 (associate professor)
industry leaders	4	IL1	male	BME	25
		IL2	male	CS	18
		IL3	female	BME	10
		IL4	female	engineering	15
human resource professionals	4	HRP1	female	BME	5
		HRP2	female	BME	8
		HRP3	female	CS	8
		HRP4	male	engineering	6

Table 1. Participants' Demographic Information

Data collection was conducted through semi-structured interviews, allowing participants to freely express their perspectives and experiences (Hu et al., 2023). An interview protocol was prepared to guide the researchers, incorporating probing questions to delve deeper into specific issues. This protocol, which had been pilot-studied before the main study, was adapted from those developed by Cai (2019), Jin (2021), and Yin (2022), and Zeng (2017), featuring tailored questions for each cohort of participants. Interviews were conducted either in person or virtually, depending on participants' preferences and logistical considerations. Each interview was audio-recorded with

participants' consent and transcribed verbatim for subsequent analysis. Data analysis followed the principles of thematic analysis, involving iterative processes of coding, categorizing, and identifying emergent themes from the data (Meeran, 2023). Initial open coding was performed to identify patterns and concepts within the interview transcripts. These codes were then organized into categories and subcategories based on their relationships and similarities. Through constant comparison, themes emerged, representing common patterns or perspectives across the participants.

Additionally, the rigor of the study was ensured through triangulation of data sources, member checking, and peer debriefing (Singh, 2023). Triangulation involved cross-verifying data collected from multiple sources to strengthen the reliability and validity of the findings. Member checking, on the other hand, entailed validating the accuracy of interpretations with participants to enhance credibility and ensure that their perspectives were accurately represented. Finally, peer debriefing involved seeking input and feedback from colleagues or experts in the field to critically examine the research process and findings, thereby enhancing the trustworthiness and robustness of the study.

4. Findings

Employment Skills

Holistic Skill Set

Participants across all stakeholder groups highlighted the paramount importance of students possessing a holistic skill set that encompasses both technical expertise and soft skills. One student (S3) emphasized, "While mastering technical skills is crucial for tackling job-specific tasks, it is equally essential to develop soft skills like communication and teamwork. Employers look for candidates who can not only excel in their roles but also collaborate effectively with colleagues and adapt to changing circumstances." This sentiment was echoed by a teacher (T6), who remarked, "In today's job market, it is not enough for students to be proficient in technical areas alone. Soft skills play a pivotal role in driving success in the workplace. As educators, we strive to equip our students with the communication, problem-solving, and interpersonal skills they need to thrive in diverse professional settings."

Industry leaders and human resource professionals also underscored the significance of students possessing a well-rounded skill set. According to one industry leader (IL3), "While technical skills are essential for job performance, they are only part of the equation. Another participant (IL1) added, "What sets exceptional candidates apart is their ability to communicate effectively, collaborate with colleagues, and think critically to solve complex problems." An human resource professional (HRP2) echoed this sentiment, stating, "Soft skills are increasingly valued by employers, as they contribute to a positive work environment. When evaluating candidates, we look for individuals who demonstrate strong communication, teamwork, and adaptability skills, in addition to their technical proficiency."

Practical Experience

A recurring theme among industry leaders and human resource professionals was the emphasis on industry relevance in the development of students' employment skills. They underscored the significance of students gaining practical experience and exposure to real-world challenges through internships, industry projects, and collaborative ventures with companies. Industry-aligned curricula and hands-on learning opportunities were viewed as instrumental in bridging the gap between academic knowledge and industry expectations.

One industry leader (IL1) remarked, "We look for candidates who not only have theoretical knowledge but also practical experience relevant to our industry. Internships and industry projects give students a chance to apply what they have learned in a real-world setting, which is invaluable for their professional development."

Echoing this sentiment, a human resource professional (HRP1) stated, "When reviewing resumes, we pay close attention to candidates who have participated in industry internships or projects during their studies. It shows that they have a deeper understanding of our field and are better prepared to hit the ground running in a professional role." Teachers involved in curriculum planning also emphasized industry relevance, with one (T7) added, "We strive to design our curriculum in collaboration with industry partners to ensure that it reflects current industry trends and demands. By aligning our courses with industry needs, we can better prepare our students for the workforce and enhance their employability." Furthermore, a student (S4) shared, "Participating in internships and industry projects has been incredibly beneficial for me." According to another student (S7), this opportunity gave them "a glimpse into what to expect in my future career and allowed me to develop practical skills that I would not have gained solely from classroom learning."

Adaptability and Resilience

During the interviews, participants from various stakeholder groups consistently emphasized the significance of adaptability and resilience in today's fast-paced job market. One student remarked (S1), "I realized that the skills I learned in the classroom might not always be directly applicable to my job, especially with how quickly things change in the industry." Another student supplemented (S5), "Being adaptable means being able to quickly learn and adjust to new situations, which is essential for success." This sentiment was echoed by several teachers, with one (T8) stating, "We need to prepare students for a world where job roles and technologies are constantly evolving. Teaching them to be adaptable and resilient is important."

Industry leaders and human resource professionals also underscored the importance of adaptability in the workplace. One industry leader (IL2) noted, "In our industry, innovation happens at a rapid pace, and employees need to be able to keep up with the changes." As such, another leader (IL4) added, "We look for candidates adaptable and willing to learn, even if it means stepping out of their comfort zone." Similarly, two human resource professionals (HRP3 and HRP4) both emphasized, "Adaptability is a key competency we look for in candidates." This echoed several teachers' perspectives, with one (T1) stating, "It is not just about having the right technical skills; it is about being able to apply those skills in different contexts and adapt to new challenges

as they arise."

These insights highlight the critical role of adaptability and resilience in navigating the complexities of today's workforce. The ability to embrace change, learn new skills, and thrive in diverse environments is essential for success in the modern workplace. Participants emphasized that fostering adaptability should be a central focus of educational programs, with an emphasis on providing students with opportunities to develop and practice these skills in real-world settings. By equipping students with the tools to navigate uncertainty and embrace change, educational institutions can better prepare them for the challenges and opportunities of the future job market.

Lifelong Learning Mindset

Participants across all stakeholder groups, including students, teachers, industry leaders, and human resources professionals, highlighted the significance of adopting a lifelong learning mindset for students enrolled in China's "3+1" higher education programs. A student remarked (S8), "In today's fast-paced world, what we learn today might become obsolete tomorrow." As such, another student (S2) stated, "It is crucial to embrace a lifelong learning mindset to stay relevant and competitive in the job market." This sentiment was echoed by a teacher (T5) who stated, "We need instil in students the importance of continuous learning beyond the classroom. The ability to adapt to industry trends is paramount for their success."

Industry leaders emphasized the value of hiring individuals who demonstrate a commitment to ongoing professional development. One industry leader (IL1) noted, "When we assess candidates for employment, we look for evidence of a growth mindset and a thirst for knowledge." Similarly, another leader (IL3) expected "employees … to invest in their own development and take ownership of their learning journey." Similarly, all the human resource professionals emphasized the role of lifelong learning in career advancement, with one (HRP2) particularly stating, "Employees prioritizing continuous learning are more likely to advance in their careers and take on leadership roles. Lifelong learners are more adaptable and resilient, qualities highly valued in today's dynamic work environment."

Teachers recognized the importance of fostering a culture of lifelong learning within educational institutions. A teacher (T4) remarked, "As educators, we have a responsibility to cultivate in students a love for learning that extends beyond the classroom." Thus, another teacher (T9) believed they "must encourage students to seek out new experiences and embrace challenges as opportunities for growth." This sentiment was supported by another teacher (T2) who stated, "By nurturing a curiosity for learning and a passion for discovery, we empower students to become lifelong learners and thrive in an ever-changing world."

Communication and Interpersonal Skills

Through interviews multiple stakeholders, it became evident that communication and interpersonal skills were indeed foundational for success in the workplace. One student (S4) remarked, "In my internship, I realized that being able to communicate effectively was essential. Whether it was discussing project requirements with team members or presenting ideas to clients,

strong communication skills were indispensable." This sentiment was echoed by teachers, who emphasized the importance of teaching students how to articulate their thoughts and ideas persuasively. One teacher (T3) noted, "We emphasize developing students' communication skills through group discussions, presentations, and written assignments." According to another teacher (T4), "These activities enhance their ability to express themselves and prepare them for the demands of the professional world."

Industry leaders also highlighted the significance of effective communication in the workplace. One (IL3) shared, "When we are hiring new graduates, we look for candidates who can communicate confidently and professionally." Another leader (IL2) agreed, "Whether it is interacting with colleagues, clients, or senior management, concise communication is key to building trust and fostering collaboration." Human resource professionals echoed this sentiment, emphasizing the importance of interpersonal skills such as empathy, active listening, and conflict resolution in creating positive work environments. One human resource manager (HRP3) stated, "We have found employees who possess strong interpersonal skills are better equipped to handle workplace challenges and build strong relationships with others. These skills contribute to individual success and enhance overall team dynamics and organizational effectiveness."

Challenges and Recommendations

Curriculum Misalignment: Adapting Curriculum to Industry Needs

In exploring the challenges associated with developing and enhancing the employment skills of "3+1" students, one prominent theme emerged: curriculum misalignment. Participants from diverse backgrounds echoed concerns regarding the gap between academic curricula and industry demands. Students expressed frustration with the outdated nature of their coursework, highlighting the disconnect between theoretical knowledge and practical application. One student (S6) remarked, "University courses are too theoretical. We need more hands-on experience and exposure to real-world industry practices." Teachers and curriculum planners acknowledged the need for curriculum reform, emphasizing the importance of incorporating industry-relevant content and skills development. A teacher (T3) noted, "Our curriculum needs to evolve with the changing needs of the industry and integrate more practical projects and industry-specific courses." Industry leaders and human resource professionals echoed these sentiments, emphasizing the importance of graduates possessing up-to-date skills and knowledge aligned with industry trends. One industry leader (IL1) emphasized, "We are looking for graduates ready to hit the ground running. The curriculum should prepare students with the skills and competencies needed in today's workplace." This need was further emphasized by a human resource professional (HRP1), who stated, " If the curriculum does not provide the skills required by the industry, graduates may struggle to find employment."

Limited Industry Exposure: Increasing Industry Engagement

Limited industry exposure emerged as a significant challenge among "3+1" students, with participants emphasizing the importance of increasing industry engagement to address this issue effectively. Students expressed frustration at the lack of opportunities to gain practical experience

and interact with professionals in their field. One student (S1) remarked, "I wish we had more chances to visit companies and see how things work in real life." Similarly, teachers acknowledged the importance of bridging the gap between classroom learning and industry practices. A teacher (T5) stated, "We need to find ways to bring the industry into the classroom. Students need to see the relevance of what they are learning to their future careers." Industry leaders echoed these sentiments, emphasizing the value of internships and hands-on experience in preparing students for the workforce. According to an industry leader (IL2), "Students need to get their hands dirty and learn by doing. Internships are crucial for developing practical skills." Human resource professionals emphasized the need for universities to collaborate closely with industry partners to provide students with meaningful internship opportunities and industry exposure. One of them (HRP1) emphasized, "Universities need to establish strong relationships with companies and organizations to ensure that students have access to internships and other industry experiences. This was considered by another professional (HRP2) "essential for students' future success in the workforce."

Soft Skills Deficiency: Integrating Relevant Training into the Curriculum

Amidst the exploration of challenges within the "3+1" programs, a prominent theme emerged regarding the deficiency in soft skills among students. Stakeholders all underscored the critical importance of soft skills in today's workplace landscape. One student (S5) lamented, "I realized during my internship that technical skills alone are not enough to succeed in the workplace." This was emphasized by another student (S9), who stated, "Employers value communication, teamwork, and problem-solving abilities." This sentiment was echoed by teachers, with one (T8) emphasizing, "We need to move beyond traditional academic instruction and prioritize the development of soft skills in our curriculum." Industry leaders corroborated these observations, emphasizing the indispensability of soft skills in the workplace. "Technical expertise can be taught on the job, but soft skills are much harder to cultivate," remarked one industry leader (IL2). Human resource professionals highlighted the repercussions of soft skills deficiencies on recruitment outcomes, noting that candidates lacking these skills often struggle to secure employment. In response to these insights, stakeholders unanimously advocated for the integration of soft skills training into the curriculum. "We need to embed opportunities for communication, teamwork, and problem-solving into every aspect of the student experience," suggested a teacher (T3). Industry leaders expressed willingness to collaborate with educational institutions to design training modules that align with industry demands. As one human resource professional (HRP4) affirmed, "By integrating soft skills training into the curriculum, we can better prepare students for the realities of the modern workplace and improve their employability prospects."

Inadequate Assessment Methods: Revamping Strategies to Reflect Industry Requirements

In exploring the theme of inadequate assessment methods and the need for revamping strategies to align with industry requirements, participants across various stakeholder groups voiced their concerns and offered valuable insights. Students expressed frustration with traditional assessment methods that they perceived as disconnected from real-world industry expectations. One student

(S7) lamented, "We spend so much time memorizing facts for examinations, but in the workplace, it is all about practical skills and problem-solving." Another student (S1) echoed this sentiment, stating, "I wish our assessments were more hands-on and reflective of what we'll actually be doing in our future careers." Teachers acknowledged the limitations of existing assessment practices and recognized the importance of updating them to better prepare students for the workforce. A teacher (T5) remarked, "We need to move away from traditional tests and embrace more experiential forms of assessment that mirror the challenges students will face in their professional lives."

Industry leaders and human resource professionals emphasized the importance of assessing students' ability to apply theoretical knowledge to real-world situations. One industry leader (IL2) remarked, "University assessments should evaluate their practical skills and critical thinking abilities." This was idea was further confirmed by human resource professionals, who believed that traditional assessment methods often fell short in accurately gauging a candidate's readiness for the workplace. One professional (HRP3) expressed, "Education has focused too much on theoretical knowledge and not enough on practical application. Assessments need to evolve to reflect the skills that are truly valued in the industry."

Insufficient Industry-University Collaboration: Strengthening Partnerships

In this section of findings, the theme of insufficient industry-university collaboration emerged prominently. Participants expressed concerns about the limited interaction between academia and industry, highlighting the need for stronger partnerships to bridge the gap between theoretical learning and practical application. One student (S5) remarked, "We learn a lot in the classroom, but it is not always relevant to what is happening in the real world." Thus, another student (S2) highlighted, "There needs to be more collaboration with industry so we can gain practical experience." Similarly, teachers emphasized the importance of industry input in curriculum design, within one (T7) stating, "We should know what skills employers are looking for so we can tailor our teaching accordingly. Industry collaboration is essential for keeping our programs relevant."

Industry leaders echoed these sentiments, emphasizing the mutual benefits of closer ties with universities. "We are always on the lookout for talented graduates, but sometimes they lack the specific skills we need," remarked one industry leader (IL4). "By working closely with universities, we can ensure that students are better prepared for the workforce." Human resource professionals emphasized the importance of internships and work-integrated learning experiences in fostering industry-ready graduates. "Internships provide students with invaluable hands-on experience and allow them to develop important professional networks," stated one human resource manager (HRP2). "Universities need to facilitate more internship opportunities and establish partnerships with companies to ensure that students are exposed to real-world challenges."

Low Student Motivation: Fostering a Culture of Lifelong Learning and Professional Development

During the study, it became evident that low student motivation was a significant challenge for students. Many participants expressed concerns about students' lack of initiative and enthusiasm

towards their own professional development. One student (S9) remarked, "I feel some of my peers are just going through the motions without really putting in the effort to improve themselves." Similarly, a teacher (T6) noted, "It is disheartening to see students who are content with just passing their courses without actively seeking opportunities to develop their skills further."

Industry representatives echoed these sentiments, highlighting the importance of intrinsic motivation in career success. One industry leader (IL1) stated, "In today's competitive job market, employers are looking for candidates who are proactive and driven to succeed. Unfortunately, we often find that graduates lack the motivation to continuously learn and grow." Similarly, a human resource professional (HRP3) emphasized the need for students to take ownership of their professional development, stating, "Employers value employees who demonstrate a commitment to lifelong learning and self-improvement … Students should cultivate a mindset of continuous learning and professional development."

To address this challenge, participants emphasized the importance of fostering a culture of lifelong learning and professional development within higher education institutions. Teachers emphasized the need for educators to inspire and motivate students to take ownership of their learning journey. One teacher (T1) suggested, "We need to create a supportive learning environment where students feel empowered to set goals and pursue opportunities for growth." Industry leaders also stressed the importance of providing students with access to resources and mentorship opportunities to help them stay motivated and engaged. As one industry leader (IL2) put it, "Students need role models and mentors who can guide them and inspire them to reach their full potential."

5. Discussion

The findings from the study conducted in China's "3+1" programs underscore several critical employment skills essential for students' success in the modern workforce. Firstly, the emphasis on a holistic skill set reflects a recognition of the multifaceted nature of employability. This encompasses not only technical competencies but also soft skills, such as interpersonal, problem-solving, and critical thinking abilities. This aligns closely with existing literature that advocates for a comprehensive approach to skill development. For example, research by Liu et al. (2021) and Sandra et al. (2023) emphasizes the importance of equipping graduates with a broad range of competencies beyond technical expertise to enhance their employability, in line with Liu et al.'s (2021) and Yunesman's (2023) Model of Employment Skills, spotlighting a comprehensive approach to this matter. Similarly, studies by Cao (2018), Even and Christiansen (2024) highlight the significance of soft skills, such as communication and teamwork, in facilitating successful transitions to the workforce and career advancement. Therefore, the emphasis on a holistic skill set in the context of "3+1" programs resonates with broader discussions in the literature on the evolving nature of employability and the need for a diverse skill set to meet the demands of the contemporary job market.

Particularly, communication and interpersonal skills emerged as focal points in the study, reflecting their crucial role in students' employability within China's "3+1" programs. Stakeholders consistently emphasized the significance of these soft skills, recognizing their pivotal role in

navigating diverse professional environments and fostering effective collaboration. Effective communication skills enable students to articulate ideas clearly, convey complex information succinctly, and engage in persuasive dialogue, essential attributes for success in the workplace (Jin, 2021). Likewise, strong interpersonal skills, including active listening, empathy, and conflict resolution, facilitate positive relationships with colleagues, clients, and stakeholders, contributing to a harmonious and productive work environment. These findings resonate with existing literature that underscores the importance of communication and interpersonal skills in professional contexts (Liu et al., 2021; Quan, 2023; Sandra et al., 2023). Moreover, within the context of China's socio-cultural and economic landscape, where interpersonal relationships and harmony are highly valued, proficiency in these skills is paramount for students' success in the competitive job market (Sun, 2017). Therefore, the recognition of communication and interpersonal skills in the "3+1" programs reflects a strategic response to the evolving demands of China's dynamic workforce and underscores the program's commitment to equipping students with the holistic skill set necessary for their future careers.

Indeed, the development of a holistic skill set should be contextualized within the practical experience gained from relevant industry-based training, such as internships and industry projects, which emerged as another essential aspect in the study. Stakeholders emphasized the value of hands-on experience in real-world settings, highlighting its role in bridging the gap between academic learning and industry demands. Through industry-based training, students can apply theoretical knowledge in practical scenarios, gaining valuable insights into industry practices, norms, and expectations. This practical experience not only enhances students' technical competencies but also cultivates essential soft skills, such as problem-solving, teamwork, and adaptability, in a real-world context (Wang & Xia, 2020). Research by Wang (2022), Wu and Wu (2002) underscores the importance of experiential learning in fostering skill development and enhancing employability, emphasizing the transformative impact of practical experience on students' professional growth. Moreover, within the Chinese context, where practical skills and hands-on experience are highly valued by employers, industry-based training serves as a vital component of the "3+1" programs, ensuring that students are well-prepared to meet the evolving demands of the job market (Yu, 2021; Zeng, 2017). Therefore, the integration of industry-based training into the curriculum not only complements the development of a holistic skill set but also enhances the overall effectiveness and relevance of the "3+1" programs in preparing students for successful careers in their chosen fields.

While emphasizing skills acquired from both education and industry exposure, the study also highlighted personal qualities as important employment skills, particularly adaptability and resilience. In today's rapidly changing and unpredictable job market, characterized by technological advancements, economic uncertainties, and the aftermath of the COVID-19 pandemic, adaptability and resilience have become indispensable attributes for success (Hou, 2020). The ability to adapt to new circumstances, navigate challenges, and bounce back from setbacks is crucial for individuals to thrive in dynamic and often turbulent work environments. Research by Nabilah et al. (2022) and Wang (2023) underscores the importance of adaptability and resilience in facilitating career transitions and coping with adversity, highlighting their role in fostering psychological well-being and professional growth. Moreover, in the context of "3+1" programs in China, where students undergo a blend of academic studies and industry-based

training, adaptability and resilience are essential for effectively navigating the complexities of both educational and professional settings (Yu, 2021). Therefore, cultivating adaptability and resilience skills among "3+1" students is crucial not only for their immediate employability but also for their long-term career success in an increasingly volatile and uncertain world.

While the importance of these skills cannot be overstated, the study also shed light on several systemic challenges that impede the development and application of these skills among "3+1" students. One such challenge is the misalignment between the curriculum offered by higher education institutions and the evolving needs of industries. This finding resonates with existing literature highlighting the importance of aligning educational curricula with industry requirements to ensure graduates are equipped with relevant and up-to-date skills (Crisp et al., 2019; Even & Christiansen, 2024; Zeng, 2017). Without a curriculum that reflects the demands of the job market, students may graduate lacking the necessary competencies to succeed in their chosen fields.

Moreover, the study identified a lack of industry exposure as a significant barrier to the development of employability skills among "3+1" students. This finding aligns with research by Wang and Xia (2020), which emphasizes the importance of providing students with opportunities for real-world experiences, such as internships and industry projects, to bridge the gap between academic learning and workplace demands. Without exposure to industry practices and environments, students may struggle to apply theoretical knowledge to practical situations, hindering their ability to develop and demonstrate key employability skills (Unadam & Mohamad, 2022).

Furthermore, the study highlighted a lack of university-industry cooperation as a critical issue affecting the employability of "3+1" graduates. This finding is consistent with research by L. Chen (2020) and Crisp et al. (2019) which underscores the importance of strong partnerships between academia and industry in facilitating students' transition into the workforce. Collaborative initiatives, such as joint research projects, guest lectures by industry professionals, and mentorship programs, can provide students with valuable insights into industry trends and expectations, enhancing their readiness for employment.

Additionally, the study identified inappropriate assessment methods as a challenge in evaluating students' employability skills. This aligns with literature emphasizing the need for assessment practices that accurately measure a diverse range of skills beyond traditional academic performance (Crisp et al., 2019; Even & Christiansen, 2024; Jerome & Antony, 2018). By implementing alternative assessment methods, such as portfolio assessments, workplace simulations, and peer evaluations, universities can better capture students' capabilities in areas such as problem-solving, teamwork, and communication.

Finally, the study revealed low student motivation as a significant barrier to the development of employability skills. This finding underscores the importance of fostering a supportive learning environment that motivates students to actively engage in their education and professional development. Research by Nabilah et al. (2022) and Wang (2023) suggests that factors such as perceived relevance, interest, and intrinsic motivation play a crucial role in shaping students' attitudes and behaviors towards learning. Therefore, efforts to enhance student motivation, such as providing meaningful learning experiences, promoting autonomy and ownership of learning, and offering mentorship and support, are essential for cultivating a skilled and motivated

workforce.

Based on the findings of the study, a comprehensive model of employment skills tailored to the context of China's "3+1" programs is proposed (see Figure 1). This model encapsulates the key themes identified in the study and serves as a synthesis of the essential skills and strategies necessary for enhancing the employability of students enrolled in these programs. At the core of the model are employment skills, which encompass a holistic skill set, practical experience, adaptability and resilience, and lifelong learning. While these skills may differ from those emphasized in existing models, they are specifically contextualized within the unique framework of China's "3+1" programs, reflecting the direct perspectives of stakeholders and the evolving expectations of industry stakeholders. Also, the model delineates various strategies aimed at improving employment skills among "3+1" students. These strategies include aligning curriculum with industry needs, increasing industry exposure, focusing on the development of soft skills, implementing appropriate assessment methods, deepening university-industry collaboration, and fostering a culture of lifelong learning and professional development. Importantly, these strategies operate at both a micro level within the "3+1" program and a macro level beyond the confines of the educational setting, involving active engagement with industry stakeholders.

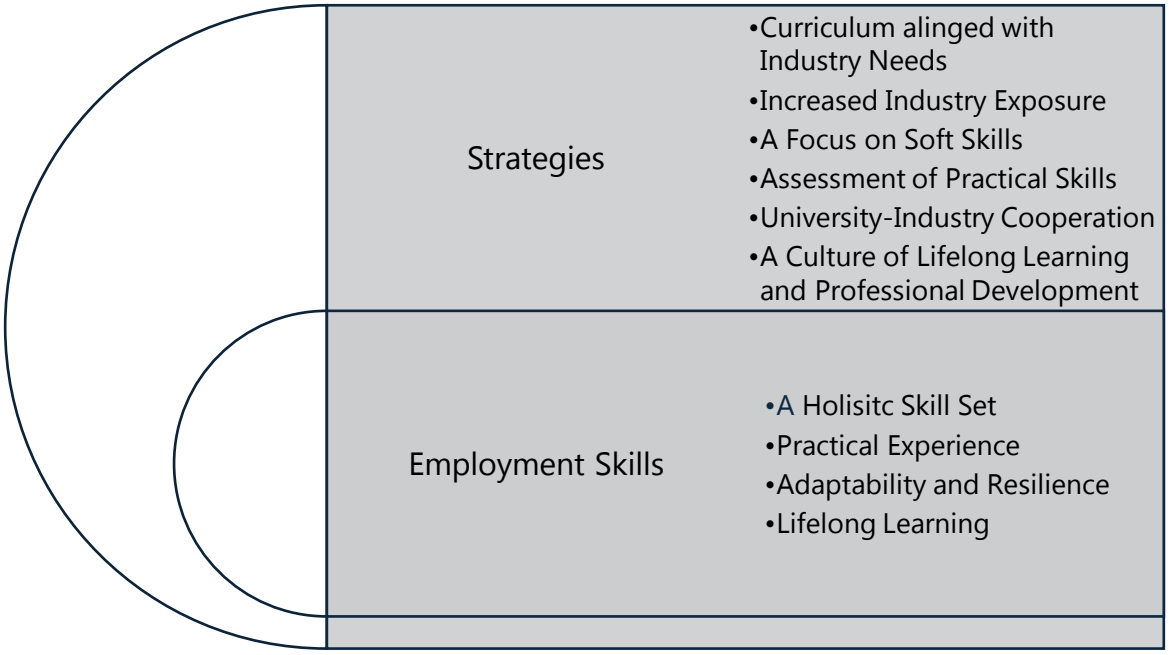

Figure 1. A Model of Employment Skills in China's "3+1" Programs

By integrating these strategies into educational practices, policymakers, educators, and industry leaders can collectively contribute to bridging the gap between academic learning and industry demands, thereby enhancing the employability and career prospects of "3+1" graduates. This model provides a comprehensive framework for addressing the multifaceted challenges facing students in China's "3+1" programs and offers actionable insights for stakeholders invested in the success of these educational initiatives.

While this qualitative study offers valuable insights, it is important to acknowledge several

limitations. Firstly, the findings may be influenced by the specific context of the "3+1" higher education programs in China, potentially limiting their generalizability to other educational contexts or countries. Moreover, reliance on self-reported data through interviews could introduce response bias, as participants may provide socially desirable responses or may not fully disclose their true perceptions. Additionally, the focus on perceptions of employment skills may not fully capture the complex and multifaceted nature of employability in the modern workforce. Furthermore, due to page limits, the paper may not provide a rich description of findings, potentially limiting a thorough understanding of the study and its transferability. Lastly, the qualitative nature of the study may restrict the ability to quantitatively measure the effectiveness of proposed strategies to address the low employment rates of "3+1" students. These limitations should be considered when interpreting and applying the study's findings.

6. Conclusion

The qualitative study conducted in China's "3+1" programs delved into multiple stakeholders' perspectives on employment and revealed an array of employment skills deemed essential for employment, challenges of improving these skills, and corresponding strategies. The combination of these findings provides valuable insights, highlighting the belief that the enhancement of employment skills hinges on the involvement of multiple stakeholders, the alignment of education with industry needs, and the necessity of extending efforts beyond the micro setting of university education itself. By fostering collaboration between academia and industry, implementing targeted interventions to address skill gaps, and fostering a culture of lifelong learning, stakeholders can collectively contribute to the improved employability of graduates and bridge the gap between education and industry demands. This collaborative approach holds promise for not only enhancing individual career prospects but also fostering broader economic growth and innovation within the evolving landscape of China's higher education and employment sectors.

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