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Employment Guidance to Improve Job Placement for Students of Guangdong Electronic Commercial Technician College

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ABSTRACT

In Guangdong province, China, manufacturing economy is fast-evolving, thus, students from vocational Mechatronics fields need employment guidance that matches job requirements in real life and supports from school to work. However, guidance in many technical colleges remains fragmented and insufficient. This mixed-method study investigated employment guidance problems and needs among Mechatronics students at Guangdong Electronic Commercial Technician College. Quantitative data were collected using structured questionnaires from 296 students by stratified random sampling and 65 teachers. Instrument quality was confirmed by expert review (IOC) and reliability testing. Descriptive statistics were used. Qualitative data came from semi-structured interviews with three vocational experts and five outstanding students, analyzed via content analysis. Students rated overall employment guidance problems as high , especially content-job mismatch. Teachers also perceived high-level problems, with teacher competence as the most salient issue. Students reported high guidance needs overall , prioritizing job-finding skills training and internship/practical opportunities. Interview results reinforced concerns about outdated guidance, weak continuity across years, limited personalization, and insufficient internship quality. In conclusion, the study proposes an integrated employment guidance system including updated industry-aligned content, skills training, strengthened school-enterprise cooperation, and capacity building for guidance teachers.

Keywords: Employment Guidance, Job Placement, Technical Disciplines, Vocational Education, Guangdong Electronic Commercial Technician College

1. INTRODUCTION

Vocational and technical education has been recognized as a key driver for developing skilled human capital aligned with labor market needs in the context of industrial upgrading and transformation. For more

than a decade, there have been global policies targeting vocational development and youth employment. At the global level, the UN 2030 Agenda explicitly calls for substantially increasing the number of youth and adults with relevant skills, including technical and vocational skills, to support employment, decent work, and entrepreneurship (United Nations General Assembly, 2015). In the same direction, UNESCO's TVET Strategy 2022–2029 emphasizes transforming TVET to strengthen skills for employment and to support digital and green transitions (UNESCO, 2022). At the national level, China has promoted vocational education reform through the State Council's National Vocational Education Reform Implementation Plan and the updated governance framework under the revised Vocational Education Law (2022), both of which stress stronger industry–education integration and the cultivation of high-quality technical talent (State Council of the People's Republic of China, 2019; National People's Congress of the People's Republic of China, 2022). Internationally, the EU's Council Recommendation on VET (2020) calls for more agile and labor-market-responsive VET systems, highlighting work-based learning and quality assurance (Council of the European Union, 2020), while the United States' Perkins V reauthorization strengthens career and technical education by emphasizing employability and alignment with workforce needs (U.S. Congress, 2018). Employers now place greater emphasis on comprehensive employability, including technical competence, job adaptability, and practical problem-solving skills. Consequently, improving the employability of students in technical disciplines has become a critical issue for vocational institutions, and employment guidance is regarded as an essential mechanism for facilitating effective school-to-work transitions (Zhou & Chen, 2023). In this study, employability is a multidimensional capability that integrates disciplinary skills, transferable competencies, and the ability to secure and sustain employment across changing contexts. Employment guidance, therefore, should be more than job placement support; it serves as a structured intervention that helps students set realistic career goals, interpret labor market signals, and develop evidence-based job search strategies.

At the same time, students' expectations regarding employment guidance have continued to increase. Empirical research has shown that vocational students, especially those in technical disciplines, express strong needs for personalized employment guidance, practical job-finding skills training, and sufficient internship and practical opportunities to enhance employability and career confidence (Mo et al., 2024). However, employment guidance systems in many vocational institutions remain fragmented, lacking systematic integration with labor market information and school–enterprise cooperation mechanisms (Azmi et al., 2018). From a career-development perspective, effective guidance should support students' career adaptability and decision-making by linking self-knowledge (interests, strengths, constraints) with occupational information and experiential learning opportunities (Savickas, 2005). In addition, Social Cognitive Career Theory suggests that job-search behavior and persistence are shaped by self-efficacy, outcome expectations, and contextual supports—factors that can be strengthened through targeted guidance and work-based learning (Lent et al., 1994).

Guangdong Electronic Commercial Technician College is a representative vocational institution specializing in skills-based, application-oriented education, particularly in Mechatronics. Although students receive systematic technical training, recent studies indicate that vocational students often face challenges when entering the labor market, such as mismatches between employment guidance content and actual job requirements, incomplete employment guidance systems, and insufficient professional competence among employment guidance teachers (Asunda, 2014). These problems may weaken students' job readiness and limit the effectiveness of employment guidance in improving job placement outcomes. For Mechatronics, where occupational roles frequently require cross-domain integration, misalignment between guidance

content and workplace competency requirements can further increase transition risk and reduce perceived fit between graduates and job positions (Holland, 1997).

Therefore, this study focuses on employment guidance for Mechatronics students at Guangdong Electronic Commercial Technician College. The research aims to improve job placement outcomes and provide practical implications for vocational institutions operating in similar educational contexts through examining current problems in employment guidance and exploring students' employment guidance needs, thus developing an employment guidance system suited to vocational students in technical disciplines. The study would contribute to clarifying where guidance systems break down (including content, process, staffing, and linkage with enterprises); to map students' priority needs into actionable program components; and to translate career-development theories into a context-specific but transferable guidance system design logic for technical vocational programs.

1.1 Research Objectives

(1) To study the problems in employment guidance for Mechatronics students at Guangdong Electronic Commercial Technician College.

(2) To explore the needs of students regarding employment guidance at Guangdong Electronic Commercial Technician College.

(3) To develop an employment guidance for improving job placement in technical disciplines at Guangdong Electronic Commercial Technician College.

2. LITERATURE REVIEW

This section reviews the relevant literature on employment guidance and job placement in vocational and technical education. The review focuses on key concepts, theoretical perspectives, and empirical studies that are closely aligned with the objectives of this research. By synthesizing previous studies on employment guidance systems, students' employment guidance needs, and job placement practices in technical disciplines, this chapter establishes a theoretical and empirical foundation for the present study and supports the development of an appropriate employment guidance system for Mechatronics students at Guangdong Electronic Commercial Technician College. To move beyond definition-based review, this section links studies through an explanatory chain: employment guidance conditions shape employability-related mechanisms, which in turn influence job-search behavior and job placement outcomes.

2.1 Employment guidance in technical VET

Employment guidance is a systematic, targeted approach to providing career-related support for vocational students, emphasizing the alignment of guidance content with labor market demand through customized interventions such as industry-linked training and career readiness development (Zhou & Chen, 2023). Studies indicate that traditional employment services in technical colleges often focus on short-term placement outcomes and neglect long-term career planning, whereas strategic employment guidance integrates labor market information, student characteristics, and occupational pathways to enhance decision-making and employability (Su, Horadal, & Punchatree, 2024). Empirical evidence further suggests that institution-specific initiatives, such as course-to-occupation mapping and personalized counseling, can significantly improve job placement outcomes (Dotong, 2024). In this study, employment guidance is defined as a forward-looking support model tailored to vocational and technical institutions, aimed at aligning technical competencies with labor market needs while strengthening students' career readiness

and long-term adaptability. Mechanism focus−guidance is expected to influence job placement by strengthening job-search readiness, confidence, and adaptive career behaviors rather than by "placement" alone (Lent et al., 1994; Savickas, 2005).

2.2 Employment Problems

Employment problems in vocational and technical education refer to structural, procedural, and personnel-related barriers that hinder students' smooth transition from school to employment. Existing studies indicate that these problems are closely associated with misaligned employment guidance content, incomplete guidance systems, and insufficient competence of employment guidance teachers (Loyalka et al., 2016). In this study, employment problems are conceptualized into three key dimensions. These constraints are treated as "negative conditions" that reduce the effectiveness of guidance and weaken employability formation, which helps explain why technically trained students may still experience poor job placement outcomes.

(1) Guidance content ≠ job requirements

The disconnect between employment guidance content and job requirements refers to the mismatch between the guidance provided by vocational institutions and the competencies employers actually demand. Research indicates that employment guidance in many vocational colleges relies on outdated or overly theoretical content and fails to reflect the dynamic needs of the labor market, particularly in technical fields such as Mechatronics (Azmi et al., 2018). This misalignment weakens students' job readiness and reduces their competitiveness in the labor market. This "fit" problem echoes the person–environment matching logic in vocational psychology, where mismatch undermines perceived fit and the quality of employment decisions (Holland, 1997).

(2) An incomplete employment guidance system

An incomplete employment guidance system refers to fragmented, underdeveloped institutional arrangements lacking standardized procedures, clear responsibilities, and long-term strategic planning. Studies show that employment guidance in vocational institutions is often dispersed across departments, overly dependent on individual teachers, and insufficiently supported by systematic coordination mechanisms, resulting in inconsistent and reactive career services (Azmi et al., 2018). When the system is fragmented, guidance becomes episodic rather than developmental, reducing sustained skill-building and long-term career-planning support.

(3) Insufficient competence of guidance teachers

Insufficient competence of employment guidance teachers refers to limitations in professional training, industry experience, and access to up-to-date labor market information among those responsible for providing career support. Research suggests that many guidance teachers come from general academic backgrounds and lack practical exposure to industry practices, which reduces the effectiveness of employment guidance in preparing students for real-world job demands (Acomi et al., 2023). From a mechanism viewpoint, limited teacher capacity may weaken students' career self-efficacy and outcome expectations—two key predictors of job-search persistence and career choices (Lent et al., 1994).

2.3 Employment Needs

Concept of Employment Needs in Vocational and Technical Education refers to the essential conditions and support mechanisms required to help students successfully transition from school to employment.

Existing studies indicate that vocational students, particularly those in technical disciplines such as Mechatronics, increasingly demand targeted support that goes beyond generic employment guidance, including individualized career assistance, practical job-finding skills training, and access to real-world work experience (Raudasoja et al., 2024). In this study, employment needs are conceptualized into three core dimensions. These "needs" are treated as design requirements for effective guidance and can be interpreted as supports that strengthen career adaptability and employability development (Savickas, 2005).

(1) Student-centered guidance

Personalized employment guidance is individualized, student-centered career support that considers learners' technical backgrounds, personal interests, and career goals. Research suggests that one-size-fits-all guidance models are ineffective for vocational students, whereas tailored counseling enhances career awareness, decision-making ability, and job-matching outcomes (Huang & Liu, 2022). Such guidance is particularly important for Mechatronics students, whose career pathways require precise alignment between skills and labor market demands. This aligns with career construction perspectives emphasizing individual meaning-making and adaptive planning in career development (Savickas, 2005).

(2) Practical job-finding training

Practical job-finding skills training focuses on equipping students with essential competencies, including resume writing, interview performance, job application strategies, and professional communication. Studies indicate that many vocational students lack systematic training in these areas, which significantly undermines employability despite strong technical skills (Su, Horadal, & Punchatree, 2024; Xu, 2018). Integrating structured job-search skills training into employment guidance is therefore critical for improving job readiness. In SCCT terms, such training can increase self-efficacy for job-search tasks and strengthen action-oriented behaviors that predict employment outcomes (Lent et al., 1994).

(3) Internship and practical opportunities

Internships and practical opportunities are structured work-based learning experiences that allow students to apply classroom knowledge in real-world settings. Research consistently shows that participation in internships enhances technical competence, career confidence, adaptability, and employment outcomes by strengthening school–industry connections (Min-En et al., 2024; Asunda, 2014). For Mechatronics students, such opportunities play a key role in bridging the gap between technical training and workplace requirements. This supports the argument that "employability" is co-produced by education and workplace exposure, making school–enterprise cooperation a key pathway for improving job placement.

2.4 Conceptual Framework

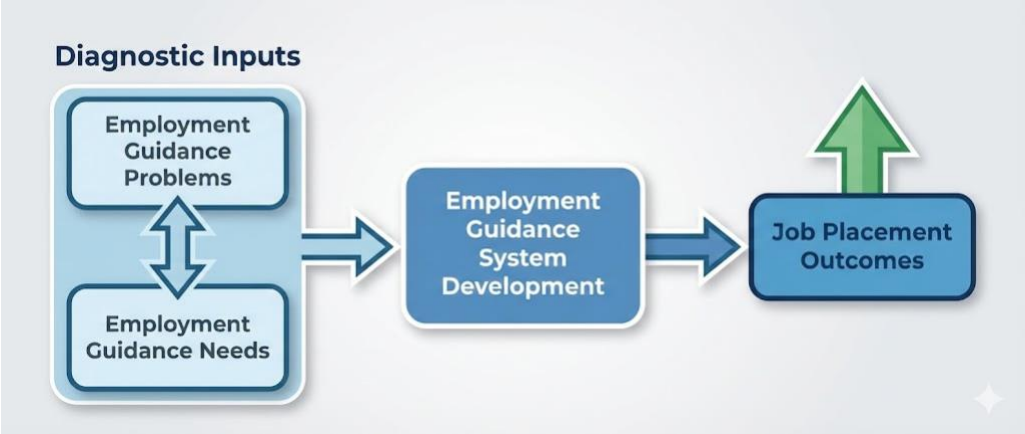

Figure 1: Conceptual Framework
Source: (Compiled by the author, 2025)

This study employs a needs- and problems-driven design model to conceptualize an effective transition strategy for Mechatronics students. The framework positions Employment Guidance Problems and Employment Guidance Needs as diagnostic inputs that undergo gap analysis and prioritization. This diagnostic data directly informs the construction of an Integrated Employment Guidance System—characterized by systematic support, skill-building, and school-enterprise synergy—which serves as the primary intervention to drive the final outcome: Improved Job Placement Outcomes, measured by enhanced employability and better alignment between students' skills and technical labor market demands.

3. METHODOLOGY

3.1 Research Design

This study adopted a mixed-method research design, combining quantitative and qualitative approaches to examine employment guidance for Mechatronics students at Guangdong Electronic Commercial Technician College. This study adopted a convergent mixed-methods design in which quantitative questionnaires and qualitative interviews were conducted concurrently, with equal emphasis on both strands. Quantitative data were collected through structured questionnaires to investigate employment guidance problems and needs, while qualitative data were obtained from semi-structured interviews to gain deeper insights into guidance practices and challenges. The integration of both methods enabled data triangulation, enhanced the validity of the findings, and supported the development of an appropriate employment guidance system for vocational students in technical disciplines. Integration occurred at the interpretation stage by comparing and merging quantitative patterns with qualitative themes to explain convergences and divergences.

3.2 Population and Sample

The study population comprised students and teachers in the Department of Mechanical and Electronic Engineering at Guangdong Electronic Commercial Technician College. It included 1,135 full-time students enrolled in technical programs and 65 teachers involved in technical instruction and employment guidance.

The student sample consisted of 296 students selected through stratified random sampling by academic year, while all 65 teachers were included via a census. The student sample size was determined using the Taro Yamane formula with a 95% confidence level and a 5% margin of error (Yamane, 1967).

3.3 Research Instruments

(1) Questionnaires

The quantitative research instrument was a structured questionnaire consisting of three parts: general information, employment guidance problems, and employment guidance needs. Separate versions were developed for students and teachers, each containing 36 items (18 items on employment guidance problems and 18 items on employment guidance needs). Content validity was examined by three experts using the Index of Item–Objective Congruence (IOC), with values ranging from 0.67 to 1.00. Reliability was tested using the formal research samples, yielding Cronbach's alpha coefficients of 0.873 for the student questionnaire (N = 296) and 0.862 for the teacher questionnaire (N = 65), indicating strong internal consistency. All items were measured using a 5-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). Mean scores were interpreted using the following cutoffs: 1.00–1.80 = very low; 1.81–2.60 = low; 2.61–3.40 = moderate; 3.41–4.20 = high; and 4.21–5.00 = very high.

(2) Semi-structured Interviews

The qualitative research instrument consisted of semi-structured interviews designed to gain an in-depth understanding of employment guidance practices, problems, and needs. The interviews were conducted with three experts in vocational education and employment guidance and five outstanding students. Outstanding students were selected based on documented internship/placement performance and willingness to participate, and an interview guide was used to ensure consistency across participants. Each interview lasted approximately 30–45 minutes, was audio-recorded with consent, and transcribed verbatim. Saturation was considered reached when no new themes emerged in the final interviews. Qualitative data were used to complement and explain the quantitative results, providing deeper insights to support the development of an appropriate employment guidance system. To reduce selection bias, the interview sample was broadened to include average and struggling students, internship participants, and employment-guidance staff, in addition to experts. The same semi-structured protocol was applied across groups, with all interviews recorded, transcribed, and coded using a consistent procedure.

3.4 Data Collection

Quantitative data were collected using structured questionnaires administered to students and teachers in the Department of Mechanical and Electronic Engineering at Guangdong Electronic Commercial Technician College. A total of 296 student questionnaires and 65 teacher questionnaires were collected and screened, and only complete and valid responses were used for analysis. Only fully completed questionnaires were retained for analysis (no imputation was applied), and the final dataset contained no missing values in the screened sample. Data collection was conducted from Month–Month Year; all distributed questionnaires were tracked to calculate the response rate. In addition, qualitative data were obtained through semi-structured interviews with three experts in vocational education and five outstanding students. All data were collected during the designated research period with participants' consent.

3.5 Data Analysis

Quantitative data were analyzed using descriptive statistics, including frequencies, percentages, means, and standard deviations, to examine employment guidance problems and needs. Reliability analysis

using Cronbach's alpha was conducted to confirm internal consistency (Cronbach, 1951). Qualitative data obtained from semi-structured interviews were analyzed using content analysis to identify key themes and patterns. Qualitative content analysis was selected because it provides a systematic and transparent procedure for condensing a relatively small, focused set of interview transcripts into meaning units, codes, and higher-order categories/themes, which is appropriate when the analytic aim is to describe recurring patterns and interpret participants' meanings rather than to produce statistically generalizable claims (Krippendorff, 2018; Schreier, 2012). Given the limited number of interviews and the purposeful selection of information-rich participants, the analysis followed an information-power rationale: when interview data are closely aligned with a specific study aim and collected from knowledgeable informants, a smaller dataset can still yield sufficient analytic insight, supporting the use of a concise content-analytic approach in this study (Malterud et al., 2016). The integration of quantitative and qualitative results supported comprehensive interpretation and the development of an employment guidance system.

4. RESULTS

4.1 General Information

This section presents the descriptive research results obtained from vocational students (N = 296) and teachers (N = 65) at Guangdong Electronic Commercial Technician College. The findings are organized into three main sections: (1) general information about the respondents, (2) problems related to job placement from the perspectives of students and teachers, and (3) job placement needs of students and teachers. The results cover demographic characteristics and the overall status of problems and needs in employment guidance across multiple dimensions, providing an empirical foundation for developing an employment guidance system.

Table 1. General Information of Students

Item		N=296	
		Frequency	**Percentage**
Gender	Male	188	63.51
	Female	108	36.49
Total		**296**	**100.00**
Ages	17-20	214	72.30
	21-24	82	27.70
Total		**296**	**100.00**
Year of Study	First Year	78	26.36
	Second Year	74	25.00
	Third Year	72	24.32
	Fourth Year	72	24.32
Total		**296**	**100.00**

Table 1 presents the students' demographic characteristics (N = 296). Male students accounted for 63.51% (N = 188) and female students 36.49% (N = 108). Most students were aged 17–20 (72.30%, N = 214), while 27.70% were aged 21–24 (N = 82). By year of study, the sample was relatively balanced: first-year students comprised 26.36% (N = 78), second-year students 25.00% (N = 74), third-year students 24.32% (N = 72), and fourth-year students 24.32% (N = 72).

Table 2. General Information of Teachers

Item		**N=65**	
		Frequency	**Percentage**
Gender	Male	35	53.85
	Female	30	46.15
Total		**65**	**100.00**
Ages	26-30	12	18.46
	31-40	27	41.54
	41-50	18	27.69
	51-60	8	12.31
Total		**65**	**100.00**
Years of Teaching Experience	1–5 years	14	21.54
	6–10 years	22	33.85
	11–15 years	17	26.15
	16 years and above	12	18.46
Total		**65**	**100.00**
Type of Teacher	Professional teacher in technical subjects	40	61.54
	Public course instructor for career and employment guidance	25	38.46
Total		**65**	**100.00**

Table 2 summarizes the teachers' background characteristics (N = 65). Male teachers accounted for 53.85% (N = 35), and female teachers 46.15% (N = 30). Most teachers were aged 31‑40 (41.54%), followed by 41‑50 (27.69%), 26‑30 (18.46%), and 51‑60 (12.31%). Teaching experience was mainly 6‑10 years (33.85%) and 11‑15 years (26.15%), with 21.54% having 1‑5 years and 18.46% having 16 years or more. In terms of role, 61.54% were professional teachers in technical subjects (N = 40), while 38.46% were public course instructors for career and employment guidance (N = 25).

Table 3. The Problems of Job Placement for Students

Items	**N=296**		**Level of Needs**
	μ	**σ**	
Disconnect between employment guidance content and job requirements	3.96	0.85	High
Incomplete employment guidance system	3.86	0.87	High

Insufficient competence of employment guidance teachers	3.84	0.89	High
Total	**3.89**	**0.87**	**High**

Table 3 shows that students (N = 296) perceived job placement–related problems at a high overall level (M = 3.89, SD = 0.87). The most severe issue was the disconnect between employment guidance content and job requirements (M = 3.96, SD = 0.85), followed by an incomplete employment guidance system (M = 3.86, SD = 0.87) and insufficient competence of employment guidance teachers (M = 3.84, SD = 0.89); all three dimensions were rated high.

Table 4. The Problems of Job Placement for Teachers

Items	N=65		Level of Needs
	μ	σ	
Disconnect between employment guidance content and job requirements	3.70	0.79	High
Incomplete employment guidance system	3.68	0.78	High
Insufficient competence of employment guidance teachers	3.74	0.79	High
Total	**3.71**	**0.79**	**High**

Table 4 indicates that teachers (N = 65) rated job placement–related problems at a high overall level (M = 3.71, SD = 0.79). The highest-rated issue was insufficient competence of employment guidance teachers (M = 3.74, SD = 0.79), followed by the disconnect between employment guidance content and job requirements (M = 3.70, SD = 0.79) and an incomplete employment guidance system (M = 3.68, SD = 0.78); all dimensions were assessed as high.

Table 5. The Needs of Job Placement for Students

Items	N=296		Level of Needs
	μ	σ	
Disconnect between employment guidance content and job requirements	3.67	0.92	High
Practical job-finding skills training	3.80	0.90	High
Internship and practical opportunities	3.77	0.90	High
Total	**3.75**	**0.91**	**High**

Table 5 shows that students (N = 296) reported high overall needs for job placement support (M = 3.75, SD = 0.91). The strongest need was practical job-finding skills training (M = 3.80, SD = 0.90), followed by internship and practical opportunities (M = 3.77, SD = 0.90) and support related to addressing the content‑job requirement disconnect (M = 3.67, SD = 0.92); all needs were rated high.

Table 6. The Problems of Job Placement for Teachers

Items	N=65		Level of Needs
	μ	σ	
Disconnect between employment guidance content and job requirements	3.83	0.60	High
Practical job-finding skills training	3.74	0.64	High
Internship and practical opportunities	3.82	0.58	High
Total	**3.80**	**0.62**	**High**

Table 6 indicates that teachers (N = 65) perceived students' job placement needs as high overall (M = 3.80, SD = 0.62). The highest-rated needs were addressing the disconnect between employment guidance content and job requirements (M = 3.83, SD = 0.60) and improving internship and practical opportunities (M = 3.82, SD = 0.58), followed by practical job-finding skills training (M = 3.74, SD = 0.64); all dimensions were rated high.

4.2 Summary of Semi-Structured Interviews with Students and Teachers

(1) Students

Student interviews converged on three recurring themes. First, students perceived a content–industry misalignment, reporting that employment guidance was overly theoretical, outdated, and weakly connected to actual job tasks, current technologies, and enterprise expectations for soft skills. Second, students described the guidance process as fragmented and discontinuous, noting that most activities were concentrated in the final year, with limited support in earlier years and inconsistent information among teachers; they also reported a lack of personalized guidance. Third, students emphasized the insufficient quality of internships, citing limited relevance to Mechatronics roles, low technical depth, short duration, and inadequate supervision. Across themes, students consistently expressed strong needs for practical job-search preparation, including resume writing, interview performance, communication, and career planning. Overall, the student data suggest that improving employment guidance requires stronger alignment with workplace requirements, earlier and continuous support across years, and higher-quality work-based learning opportunities.

(2) Teachers

Teacher interviews reinforced the student perspective while adding an implementation-level view. Teachers emphasized that existing guidance content is outdated and insufficiently industry-specific, with limited integration of the technical competencies and soft skills employers require. They also highlighted system-level weaknesses, including the absence of a unified guidance framework, limited cross-department coordination, and insufficient continuity across academic years. At the staff level, teachers acknowledged constraints in their competence in employment guidance, particularly in career counseling methods, interview coaching, labor market analysis, and understanding of industry certification pathways. In response, teachers strongly advocated for strengthened school‑enterprise cooperation, including long-term partnerships, enterprise participation in curriculum design, industry mentors, and improved internship supervision. Collectively, teacher interviews indicate that improving employment guidance depends on

coordinated reform across updated content, institutional mechanisms, capacity building, and enterprise collaboration.

5. DISCUSSION

5.1 Systemic Constraints in Employment Guidance

Recent vocational education research presents contrasting perspectives on the effectiveness of employment guidance. Some approaches focus primarily on improving students' job-search skills and short-term placement outcomes, assuming that employability problems can be resolved through targeted training (Zainal Shah, Ab Aziz, & Marie Balraj, 2022). In contrast, comparative evidence indicates that such approaches remain insufficient when employment guidance content is weakly aligned with labor market demands and delivered through fragmented institutional arrangements. Studies show that guidance systems emphasizing continuity, curriculum integration, and sustained school–enterprise collaboration are more effective in enhancing career readiness than those relying on isolated interventions near graduation (OECD, 2021; CEDEFOP, 2020). Further comparisons also reveal differences in how teacher roles are conceptualized. While employment guidance is sometimes treated as an additional teaching responsibility, recent findings indicate that limited professional training and insufficient industry exposure constrain the quality of guidance, particularly in technical disciplines (Hooley et al., 2021). Overall, these contrasting viewpoints suggest that employment guidance problems are better understood as outcomes of systemic misalignment and institutional capacity gaps rather than individual student deficiencies.

5.2 What Students Need for Effective School-to-Work Transition

The strong demand for practical job-finding skills training indicates that students prioritize guidance that directly improves performance in recruitment contexts such as interviews, job applications, and workplace communication, a pattern widely observed in vocational education under competitive labor market conditions (Jackson, 2016; Tomlinson, 2017). The high demand for internships and practical opportunities further reflects the recognition that work-based learning is essential for translating technical knowledge into employability and enhancing workplace readiness, rather than serving as a supplementary component of education (OECD, 2018; CEDEFOP, 2015). Although personalized employment guidance is given relatively lower priority than practical and experiential support, research in career development consistently demonstrates that individualized guidance remains critical, as it helps students interpret learning experiences and align personal goals with labor market opportunities (Watts, 2010; Jiang, Chen, & Gao, 2024). Together, these contrasting perspectives highlight that employment guidance in technical education is most effective when applied skills training, experiential learning, and targeted individual support are integrated within a developmental framework.

5.3 Toward an Integrated Employment Guidance Framework for Technical Programs

The findings indicate that improving job placement outcomes for students in technical disciplines at Guangdong Electronic Commercial Technician College requires a comprehensive and integrated employment guidance framework rather than isolated adjustments. The challenges identified reflect interconnected structural, pedagogical, and institutional limitations, including insufficient long-term planning, misalignment between guidance content and labor market demands, limited use of interactive guidance methods, inadequate material and digital support, and weak emphasis on professional behavior education. Consistent with prior research, employment guidance is most effective when implemented as a

coordinated, developmental process embedded throughout students' academic trajectories, rather than being concentrated in short-term interventions near graduation (Su, Horadal, & Punchatree, 2024; OECD, 2010). Studies further demonstrate that guidance content must be continuously updated through industry engagement and labor market information to maintain practical relevance in technical education (Watts, 2009; CEDEFOP, 2014). Evidence also shows that student-centered, practice-oriented methodologies, supported by appropriate resources, digital platforms, and experiential learning environments, significantly enhance employability and job readiness (Jackson, 2016; Tomlinson, 2017; OECD, 2018). In addition, research increasingly emphasizes that professional ethics and soft skills are essential complements to technical competence in sustaining employment outcomes (Watts, 2010; Tomlinson, 2017). Taken together, these comparative perspectives suggest that effective employment guidance in technical disciplines must be systematic, practice-oriented, digitally supported, and institutionally coordinated to support students' successful transition from education to employment.

6. CONCLUSION

This study reveals significant challenges in employment guidance for Mechatronics students at Guangdong Electronic Commercial Technician College, with both students and teachers reporting high levels of problems, including mismatches between guidance content and job requirements, fragmented systems, and inadequate teacher competencies. Concurrently, strong needs were identified for practical job-finding skills training, enhanced internships, and personalized support, corroborated by qualitative insights highlighting outdated practices and weak industry linkages.

These findings underscore the necessity for an integrated employment guidance framework that embeds career development throughout the curriculum, fosters school-enterprise collaborations, and builds teacher capacity through targeted training. By aligning guidance with labor market dynamics and emphasizing experiential learning, vocational institutions can enhance student employability, reduce transition barriers, and improve job placement outcomes in technical fields.

Theoretically, the research advances career development models such as Social Cognitive Career Theory and Career Construction Theory by contextualizing them within Chinese vocational education and demonstrating how systemic interventions bolster self-efficacy and adaptability. In practice, it offers a blueprint for policymakers and educators to reform guidance systems, thereby promoting sustainable workforce development amid industrial transformations.

Despite its limited scope and reliance on self-reported data, this work paves the way for longitudinal studies that track graduate trajectories and for multi-institutional comparisons to refine guidance strategies globally.

7. RECOMMENDATIONS

Practically, employment guidance at Guangdong Electronic Commercial Technician College should be strengthened through systematic and long-term planning that spans students' entire period of study. Guidance content should be continuously updated to align with labor market demands through close collaboration with enterprises. Practice-oriented methods, such as skills workshops, mock interviews, and structured internships, these should be expanded and improved by adequate materials and digital platforms. In addition, career ethics and professional behavior education should be integrated into guidance activities to enhance students' overall employment rate.

Theoretically, this study contributes to employment guidance and vocational education research by situating employment guidance within technical disciplines in the context of Mechatronics education. By demonstrating how university-level planning, pedagogical approaches, and individual career development considerations interact in shaping guidance perceptions. The findings also provide empirical support for human capital perspectives by emphasizing the perceived importance of practical skills development, work-based learning, and professional behavior formation in employment development.

8. LIMITATIONS AND FUTURE STUDIES

This study has several limitations that should be acknowledged. First, the research was conducted at a single vocational institution—a narrow scope that may limit generalizability. Second, the data were primarily based on self-reported perceptions from students and teachers, which may be subject to bias. In addition, the cross-sectional design captured employment guidance problems and needs at only one point in time, without observing long-term employment outcomes. Future studies could include multiple vocational institutions to broaden the scope and adopt longitudinal designs to track graduates' employment outcomes over time.

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Consent to Participate: Before data collection, informed consent was obtained from all participants, clearly explaining the purpose of the study, the voluntary nature of participation, and their right to withdraw at any time without penalty.

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