

Quality of work-integrated learning and employability in Henan TVET: serial mediation via career self-efficacy and adaptability, moderated by proactive personality

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Abstract

Purpose – This study critically examines how the quality of work-integrated learning (WIL) placements enhances Chinese technical-and-vocational-education (TVET) students' employability and for whom the benefits are greatest, by testing a social-cognitive-career-theory model that links WIL to employability through career self-efficacy (CSE) and career adaptability (CAD) and examines proactive personality (PRO) as a boundary condition.

Design/methodology/approach – Survey data were collected from 477 final-year students at public TVET colleges in Henan Province. Validated Chinese instruments captured WIL quality (15 items), CSE (8 items), CAD (12 items), PRO (10 items) and self-perceived employability (8 items). PROCESS Model 59 with 5,000 bias-corrected bootstraps estimated a first-stage moderated serial-mediation structure (WIL → CSE → ? CAD → employability; PRO × WIL on CSE).

Findings – Higher-quality WIL significantly increased CSE ($b = 0.439$, $\beta = 0.437$, $p < 0.001$); stronger CSE raised CAD ($b = 0.512$, $\beta = 0.592$, $p < 0.001$); and CAD was the principal driver of employability ($b = 0.728$, $\beta = 0.730$, $p < 0.001$). The serial indirect effect WIL → CSE → CAD → employability was 0.147 (95% CI [0.115, 0.185]) and fully absorbed WIL's direct influence. PRO strengthened the WIL → CSE path (interaction $b = 0.197$, $p < 0.001$); the slope rose from 0.182 at low PRO (16th percentile) to 0.685 at high PRO (84th percentile).

Originality/value – This is the first multi-college Chinese TVET investigation to validate the Placement Quality Measure in Chinese TVET, to model serial mediation via self-efficacy and adaptability, and to uncover proactive personality as a boundary condition, integrating motivational, self-regulatory and dispositional explanations of WIL-driven employability.

Keywords Work-integrated learning, Placement quality, Career self-efficacy, Career adaptability, Employability, Proactive personality, Serial mediation, Moderated mediation, Social cognitive career theory, Chinese TVET

Paper type Research article

Introduction

Modern higher-education institutions are under increasing pressure to produce work-ready graduates with strong employability, however this is especially salient for vocational colleges in China's Henan province, where students pursue practical skills for immediate workforce entry. Work-integrated learning (WIL) including work placements or internships embedded in



the curriculum is increasingly viewed as a central vehicle for enhancing graduates' employability skills (Jackson, 2015). High-quality WIL provides authentic practice and bridges classroom learning with real-world contexts, thereby developing students' professional competencies and confidence (Kelly *et al.*, 2015; Pan *et al.*, 2018). Meta-analytic and large-scale studies consistently report that participation in WIL improves graduates' work-readiness and career prospects (Ng *et al.*, 2022). Nevertheless, how and for whom WIL yields these benefits remains an open question, particularly in Chinese technical and vocational education and training (TVET), where empirical work is still dominated by descriptive or single-institution studies (Dai *et al.*, 2024). Thus, the present study addresses this gap by examining the psychological mechanisms and individual differences that link WIL quality to students' self-perceived employability focusing on their belief in their ability to obtain and retain employment extending on Rothwell and Arnold's (2007) earlier study.

Through drawing on the social cognitive career theory (SCCT) which posits that career development is shaped by interactions between personal attributes, environmental supports and cognitive, motivational processes such as career self-efficacy (Lent *et al.*, 1994; Lent and Brown, 2020). Positive learning environments such as supportive, well-designed placements can bolster students' self-efficacy, which in turn influences adaptive behaviours and eventual success (Bandura, 1997). Building on prior SCCT-informed work in work-integrated learning which often examines learning experiences and self-efficacy as direct predictors of career outcomes (Shen *et al.*, 2024; Gregory and Penela, 2023), this study adds clarity on the intermediate resources that translate efficacy beliefs into employability judgements. Specifically, the model extends earlier SCCT-based approaches by specifying a serial mechanism in which placement quality first strengthens career self-efficacy, then self-efficacy cultivates career adaptability and adaptability is the proximal resource shaping self-perceived employability.

This study aims to extending on SCCT and integrate career adaptability, a self-regulatory capacity to cope with career changes as a key mediator between self-efficacy and employment outcomes as per Savickas and Porfeli's (2012) study. Career adaptability is increasingly recognised as essential for navigating uncertain careers and achieving sustainable employment (Rudolph *et al.*, 2017). We also consider proactive personality as a stable disposition to take initiative and effect change (Bateman and Crant, 1993), as proactive students are likely to capitalise on rich WIL environments by actively seeking learning opportunities, suggesting a person-by-context interaction that shapes self-efficacy. This moderation component further extends SCCT applications in this area by testing when placement quality is most likely to be converted into stronger efficacy beliefs, rather than assuming that all students benefit from high-quality placements to the same extent (Pan *et al.*, 2018; Shen *et al.*, 2024). WIL quality is expected to enhance career self-efficacy, in turn, self-efficacy should foster greater career adaptability, ultimately raising self-perceived employability.

Research gap and contributions

A recent systematic review of 61 Chinese-TVET studies (2014–2024) found that 70% were purely narrative and only three employed structural equation modelling (SEM), virtually all sampled higher-level colleges, not secondary institutions (Dai *et al.*, 2024). Likewise, a psychological study of 1,078 students in a single higher-vocational university concluded that “much less is known” about employability drivers in TVET (Zhou *et al.*, 2023). Most importantly, no study to date has modelled WIL quality → self-efficacy → adaptability → employability in secondary vocational colleges. Measurement practice is also limited although the eight-item placement quality measure (PQM) is internationally recognised (Kelly *et al.*, 2015), a systematic search in July 2025 returned zero Chinese applications, indicating that placement research in China typically records presence or duration, not quality.

Conceptually, most Chinese employability models omit career self-efficacy despite SCCT predicting its central, mediating role (Lent and Brown, 2020). Even studies that confirm a

positive self-efficacy → employability link in higher-vocational settings lament previous neglect of the construct (Zhou *et al.*, 2023). Thus, through translating and validating the PQM, testing an SCCT-grounded serial mediation model in a large ($N = 477$) multi-college sample and incorporating proactive personality as a boundary condition, the present study makes three contributions: (a) empirically addresses the descriptive/tertiary bias in Chinese TVET research, (b) advances measurement by applying the PQM for the first time in China and (c) integrates under-used SCCT constructs to clarify the psychological pathways through which WIL quality boosts employability. The findings will inform educators and policymakers on how to design and target WIL programmes to maximise graduate outcomes, particularly for students who are less naturally proactive.

Literature review

Social cognitive career theory (SCCT)

SCCT explains career development through the interaction of personal attributes and contextual supports, operating through key cognitive mechanisms including self-efficacy beliefs, outcome expectations and goal directed behaviour (Lent *et al.*, 1994; Lent and Brown, 2020). Learning experiences are key in this framework because supportive environments can provide mastery opportunities, modelling and constructive persuasion that strengthen self-efficacy (Bandura, 1997; Lent *et al.*, 1994). SCCT also emphasises that contextual supports and barriers shape whether individuals can convert stronger efficacy beliefs into adaptive action and favourable outcomes (Lent and Brown, 2020). Applied to WIL, placement quality can be treated as a structured contextual support that shapes the learning experiences available to students and, in turn, strengthens career self-efficacy (Brodsky *et al.*, 2024; Shen *et al.*, 2024). Stronger self-efficacy should then promote adaptive career self-management during uncertain transitions, supporting the development of career adaptability as a key resource through which efficacy beliefs inform self-perceived employability (Gunawan *et al.*, 2025; Rudolph *et al.*, 2017).

Work-integrated learning (WIL) quality and career self-efficacy

WIL placements vary markedly in quality as high-quality placements provide supportive supervision, meaningful tasks, constructive feedback and explicit integration of theory with practice (Kelly *et al.*, 2015). Recent international evidence suggests that WIL quality is also shaped by the micro-features of placement design, particularly the nature of students' day-to-day work and the extent to which tasks create genuine learning opportunities. For instance, a diary study tracing learning processes across internships found that task characteristics and perceived learning opportunities were closely tied to students' self-perceived learning benefit during placement (Brodsky *et al.*, 2024). In social science studies, self-efficacy develops when learners experience mastery and receive persuasive feedback in supportive contexts (Bandura, 1997; Lent *et al.*, 1994). Similarly, studies on WIL evaluation argues that assessment and feedback are not peripheral, because the assessment architecture determines whether workplace learning is scaffolded, evidenced and aligned with intended learning outcomes (Shen *et al.*, 2024).

A rich WIL environment therefore offers mastery opportunities and positive mentoring, boosting students' confidence in their career-related abilities. Qualitative evidence from supervisors further illustrated that placement quality can deteriorate when role expectations are unclear, communication is inconsistent or supervisors receive limited preparation, which can produce uneven learning conditions across students (Schneider *et al.*, 2024). More broadly, design-focused work cautions against assuming that placement participation automatically produces value and instead emphasises deliberate arrangements and safeguards to support meaningful interaction and student participation (Díaz *et al.*, 2025). Empirical evidence confirms this where business undergraduates in Australia reported significantly higher

professional-skills self-efficacy after cooperative education (Freudenberg *et al.*, 2011), while British hospitality students highlighted increased confidence in handling work challenges as the principal “added value” of their placements (Martin and Rees, 2019). Accordingly, students who perceive their WIL placement as well organised, instructive and supportive should exhibit higher career decision-making self-efficacy than those with lower-quality placements, thus [Hypothesis 1](#) proposes that work-integrated learning (WIL) quality is positively related to students’ career self-efficacy.

Career self-efficacy and career adaptability

Career decision self-efficacy is the belief that one can accomplish the tasks involved in choosing, planning and pursuing a career (Betz *et al.*, 1996). Students with high self-efficacy are more decisive and better able to cope with developmental transitions (Lent and Brown, 2020). Career-construction theory positions career adaptability including concern, control, curiosity and confidence as a psychosocial resource for managing change (Savickas and Porfeli, 2012). Individuals who believe in their capabilities are more likely to allocate effort to planning, exploring and persisting, thereby strengthening adaptability. A recent multi-country survey of vocational students (Mahfud *et al.*, 2024) confirmed that self-efficacy directly predicts adaptability. Thus, we therefore expect greater self-efficacy to be associated with higher adaptability as proposed in [Hypothesis 2](#) where students’ career self-efficacy is positively related to their career adaptability. Although adaptability and self-efficacy can reinforce each other over time (Fiori *et al.*, 2015), the model for this study treats self-efficacy as antecedent because mastery experiences precede the development of adaptive resources in SCCT’s causal sequence.

Career adaptability and self-perceived employability

Self-perceived employability refers to individuals’ evaluations of their capacity to obtain initial employment and remain employable across their career (Rothwell and Arnold, 2007). Recent studies reiterate that perceived employability is a subjective judgement of one’s ability to secure and sustain employment, shaped by both individual resources and contextual supports as opposed to a direct proxy for objective employability outcomes (Gunawan *et al.*, 2025; Jung and Li, 2024). This emphasis on perceptions is also reflected in newer measurement developments that treat self-perceived employability as a distinct evaluative construct, capturing expectations about job attainment and continuity alongside broader employment related perceptions (López *et al.*, 2025). Adaptable individuals respond more effectively to labour-market opportunities and setbacks, continually updating skills and strategies, they therefore feel more employable. Meta-analytic work links adaptability to employment status, salary and job satisfaction (Rudolph *et al.*, 2017). Among Chinese college students, higher adaptability predicted stronger confidence in future job prospects (Fiori *et al.*, 2015). Adaptability supplies the planning, curiosity and confidence necessary to navigate job search and progression, so students high in adaptability should report higher perceived employability, thus [Hypothesis 3](#) proposes that career adaptability is positively related to students’ self-perceived employability.

Serial mediation of WIL quality on employability via self-efficacy and adaptability

Taken together, this study proposes a serial mediation where WIL quality → self-efficacy → adaptability → employability ([Hypotheses 4 and 5](#)). A supportive placement should elevate self-efficacy ([H1](#)); heightened self-efficacy should cultivate adaptability ([H2](#)); and adaptability should enhance perceived employability ([H3](#)). Thus, WIL quality should influence adaptability *indirectly* through self-efficacy ([H4](#)) and influence employability *indirectly* through the sequential chain of self-efficacy and adaptability ([H5](#)). SCCT holds that the effects of learning experiences on outcomes are channelled through efficacy beliefs and

subsequent adaptive actions (Lent and Brown, 2020). Career-construction theory likewise argues that supportive experiences build resources that lead to career success (Savickas and Porfeli, 2012). Existing evidence is partial: work-based learning has been shown to enhance adaptability partly through greater self-efficacy (Mahfud et al., 2024) and adaptability mediates between career competencies and employability (De Guzman and Choi, 2013). An integrated test of the full chain in Chinese vocational education remains novel.

The moderating role of proactive personality

Proactive personality describes a disposition to identify opportunities, take initiative and effect change (Bateman and Crant, 1993). Such traits interact with environmental factors as proactive individuals extract more benefit from supportive contexts (Liu et al., 2025). We theorise that proactive personality moderates the WIL quality → self-efficacy link as proposed in Hypothesis 6. In a high-quality placement, proactive students are more likely to seek additional responsibilities and feedback, gaining greater mastery and confidence than less proactive peers. In low-quality placements they may still create learning opportunities, buffering negative effects. Related evidence shows that proactive personality strengthens the impact of coaching on adaptability (Liu et al., 2025) and leads students to engage more deeply with learning opportunities, raising self-efficacy and performance (Major et al., 2006).

The final hypotheses are as follows and the research framework is presented in Figure 1:

- H1. WIL quality is positively related to career self-efficacy.
- H2. Career self-efficacy is positively related to career adaptability.
- H3. Career adaptability is positively related to self-perceived employability.
- H4. Career self-efficacy mediates the positive relationship between WIL quality and career adaptability.
- H5. Career self-efficacy and career adaptability sequentially mediate the positive relationship between WIL quality and self-perceived employability.
- H6. Proactive personality moderates the relationship between WIL quality and career self-efficacy, such that the relationship is stronger for students high in proactivity.

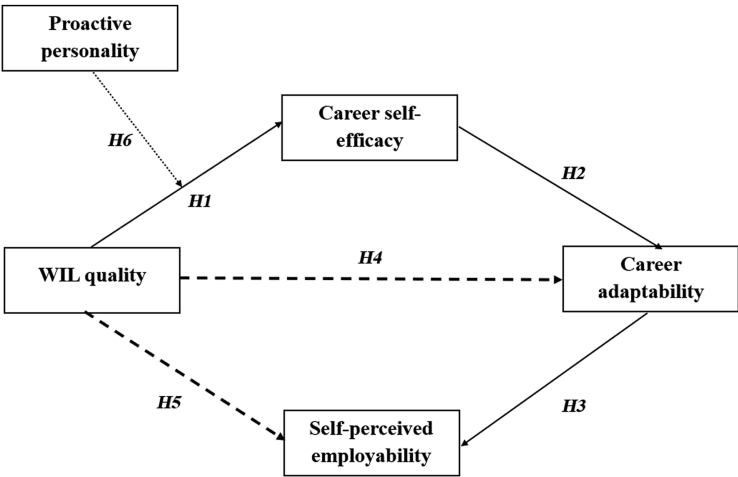


Figure 1. Research conceptual framework. Source: Authors' own work

Methods

Participants and procedure

The recruited participant population comprised final-year students enrolled in public technical and vocational education and training (TVET) colleges throughout Henan province in China. A stratified-cluster design first grouped colleges by ownership (provincial v. municipal) and dominant discipline strand (engineering/technical, finance/business, healthcare, service). Intact classes within each stratum were then randomly selected until a planned sample size of $N = 477$ was reached. The achieved sample reflected the intended stratification structure with representation from both provincial and municipal public colleges and across the four discipline strands. Respondents were typically aged in the early twenties with a gender distribution broadly balanced across the cohort. [Table 1](#) summarises the demographic profile of the sample and its distribution across the stratification variables. Data collection took place in June 2024 after students had completed their compulsory work-integrated learning (WIL) placement. Students accessed an online questionnaire via a secure link distributed by course tutors and all participants provided electronic or written informed consent. Instruments originally in English were translated and back-translated by bilingual TVET scholars to ensure linguistic equivalence. The survey required approximately 15 min.

Measures

All constructs were assessed with multi-item Likert scales that have demonstrated reliability and validity in prior research. Unless stated otherwise, items used a five-point format (1 = strongly disagree, 5 = strongly agree) and composite scores are obtained by averaging item responses using survey questions in the [Appendix](#). Empirical measurement metrics were adapted to provide strong theoretical ground and rigorously to structure the design of survey questions for this study, they were chosen as follows.

Work-integrated learning (WIL) quality

We assessed the perceived quality of students' work placement experience using an 8-item placement quality measure developed by [Kelly et al. \(2015\)](#). This measure, also known as the Manchester Clinical Placement Index (adapted beyond medical contexts), captures key aspects of placement learning environments such as leadership/support, welcome and reception, quality of facilities, organization, instruction, opportunities for observation and feedback.

Table 1. Demographic characteristics

Variable	Category	<i>n</i>	%
Sample	Final-year students in public TVET colleges, Henan Province	477	100.0
Gender	Male	258	54.1
	Female	219	45.9
Age (years)	19–20	144	30.2
	21–22	278	58.3
	23–25	55	11.5
College stratum	Provincial public TVET college	204	42.8
	Municipal public TVET college	273	57.2
Discipline strand	Engineering/technical	171	35.8
	Finance/business	133	27.9
	Healthcare	95	19.9
	Service	78	16.4

Source(s): Authors' own work

ET
68,10

Career self-efficacy
Career-related self-efficacy was measured with a short form of the career decision self-efficacy scale. We used 5 items adapted from the CDSE short form as per [Betz et al. \(1996\)](#) covering five competency domains including self-appraisal, occupational information, goal selection, planning and problem solving.

88

Career adaptability
We assessed adaptability with the career adapt-abilities scale short form (CAAS-SF) which contains 12 items, with 3 items for each of the four adaptability facets including concern (future orientation and planning), control (taking responsibility), curiosity (exploring possibilities) and confidence (efficacy in overcoming hurdles).

Self-perceived employability
We used the 16-item scale by [Rothwell and Arnold \(2007\)](#) to measure students’ self-perceived employability. This scale was originally developed for undergraduates and evaluates one’s perception of employability in terms of personal attributes, skills, knowledge and external factors (such as field demand and institutional reputation). A higher employability score means the student is more confident about obtaining and maintaining employment relevant to their training.

Proactive personality
We measured proactive personality using a 10-item short version of [Bateman and Crant’s \(1993\)](#) proactive personality scale, this abbreviated scale (often attributed to [Seibert et al., 1999](#)) includes the items with highest factor loadings from the original 17-item scale. It captures the degree to which students see themselves as proactive and initiative-taking. Higher scores indicate a more proactive personality disposition. We chose the 10-item form to reduce survey length while maintaining reliability as prior research has validated its use with student samples. [Table 2](#) presents the construct measures, item sources and scale details used in this study.

Data analysis
All statistical procedures are carried out in IBM SPSS Statistics 29 with PROCESS macro v4.2 ([Hayes, 2022](#)). PROCESS was selected because the hypotheses specify a conditional process model with serial mediation and first-stage moderation, and it directly estimates conditional indirect effects using ordinary least squares regression with bias-corrected bootstrap

Table 2. Measurement items

Construct	Instrument (items adapted from)	Number of items	Response range
Work-integrated learning (WIL) quality	Placement quality measure (Kelly et al., 2015)	8	1–5
Career self-efficacy (CSE)	Career decision self-efficacy Scale (Betz et al., 1996)	5	1–5
Career adaptability (CAD)	Career adapt-abilities scale (Savickas and Porfeli, 2012)	12	1–5
Self-perceived employability (EMP)	Employability scale (Rothwell and Arnold, 2007)	16	1–5
Proactive personality (PRO)	Proactive personality scale (Seibert et al., 1999)	10	1–5
Source(s): Authors’ own work			

confidence intervals and Johnson–Neyman probing. Because the constructs were operationalised as composite scale scores after reliability and factor-analytic checks, PROCESS provides a transparent, theory-aligned test of the hypothesised paths without adding a separate latent measurement model, which would be required under SEM approaches such as SEM-PLS. For each construct, a composite score was created by averaging its items, after verifying internal consistency (Cronbach’s α) and screening item–total correlations. Descriptive statistics, skewness, kurtosis and bivariate correlations were inspected and multicollinearity was checked via variance-inflation factors (<3.0).

The hypothesised first-stage moderated, serial-mediation structure was estimated with PROCESS Model 59. In this specification, work-integrated-learning (WIL) quality served as the independent variable X; career self-efficacy (CSE) and career adaptability (CAD) operated as sequential mediators M_1 and M_2 ; self-perceived employability (EMP) was the dependent variable Y; and proactive personality (PRO) was the moderator W conditioning the path from X to M_1 . All continuous predictors (WIL and PRO) were mean-centred before analysis and their product term ($WIL \times PRO$) was automatically generated by PROCESS. Bias-corrected bootstrap confidence intervals (95%) were computed from 5 000 resamples to test indirect effects. Johnson–Neyman tests and simple-slope plots were used to interpret any significant moderation.

In matrix notation, the path system to be estimated is:

$$CSE_i = a_1 WIL_i + a_2 PRO_i + a_3 (WIL \times PRO)_i + e_{1i}$$

$$CAS_i = b_1 CSE_i + e_{2i}$$

$$EMP_i = c_1' WIL_i + c_2 CSE_i + C_3 CAD_i + e_{3i}$$

Where:

a_1 testing [H1](#) ($WIL \rightarrow CSE$),

b_1 testing [H2](#) ($CSE \rightarrow CAD$),

c_3 testing [H3](#) ($CAD \rightarrow EMP$),

a_3 testing [H6](#) (interaction of WIL and proactive personality on CSE).

The indirect effect for [H4](#) was $a_1 b_1$. The serial indirect effect for [H5](#) was $(a_1 + a_3 \cdot PRO) b_1 c_3$. A direct effect of WIL on EMP (c_1') remained in the model to determine whether mediation was full or partial. With a sample of 477 cases, ordinary-least-squares estimation in PROCESS provided power greater than 0.90 to detect small-to-medium path coefficients ($|\beta| \approx 0.15$) at $\alpha = 0.05$, satisfying recommendations for moderated-mediation tests.

Results

Reliability analysis

As shown in [Table 3](#), all five multi-item scales demonstrated strong internal consistency ($\alpha = 0.869$ – 0.937) comfortably above the 0.70 criterion for established instruments. Item quality was uniformly good as corrected item–total correlations were moderate to high across measures (lowest = 0.596 for CAD; highest = 0.767 for PRO), indicating that items cohered well with their parent constructs. “Alpha if item deleted” never exceeded the observed α by a meaningful margin (ranges 0.839–0.933), showing no single item would substantively improve reliability if removed. PRO and EMP exhibited the highest reliability ($\alpha = 0.937$ and 0.931), followed by WIL ($\alpha = 0.923$) and CAD ($\alpha = 0.908$); CSE was acceptable-to-good ($\alpha = 0.869$). These results support forming composite scores by averaging items for subsequent descriptive, correlational and PROCESS analyses.

Table 3. Reliability testing

Construct	k	Cronbach's α	Corrected item-total correlation (range)	α if item deleted (range)
WIL	8	0.923	0.713–0.762	0.911–0.915
CSE	5	0.869	0.673–0.703	0.839–0.846
CAD	12	0.908	0.596–0.691	0.898–0.903
EMP	16	0.931	0.623–0.692	0.926–0.928
PRO	10	0.937	0.703–0.767	0.929–0.933

Note(s): k = number of items. α = Cronbach's alpha

Source(s): Authors' own work

EFA analysis

Exploratory factor analysis (EFA) using principal axis factoring with Promax rotation ($\kappa = 4$) indicated excellent sampling adequacy (Kaiser-Meyer-Olkin (KMO) = 0.961) and a significant Bartlett test, $\chi^2(1,275) = 13,509.469$, $p < 0.001$ (Table 4). The scree plot (Figure 2) and eigenvalues supported a five-factor solution accounting for 52.28% of the variance (Table 5). Rotated pattern matrices showed clean simple structure: employability (15 items ≥ 0.571), proactive personality (10 items ≥ 0.715), WIL quality (8 items ≥ 0.700), career

Table 4. Sampling adequacy and sphericity

Test	Value
Kaiser–Meyer–Olkin (KMO)	0.961
Bartlett's χ^2 (df = 1,275)	13,509.469
p-value	<0.001

Source(s): Authors' own work

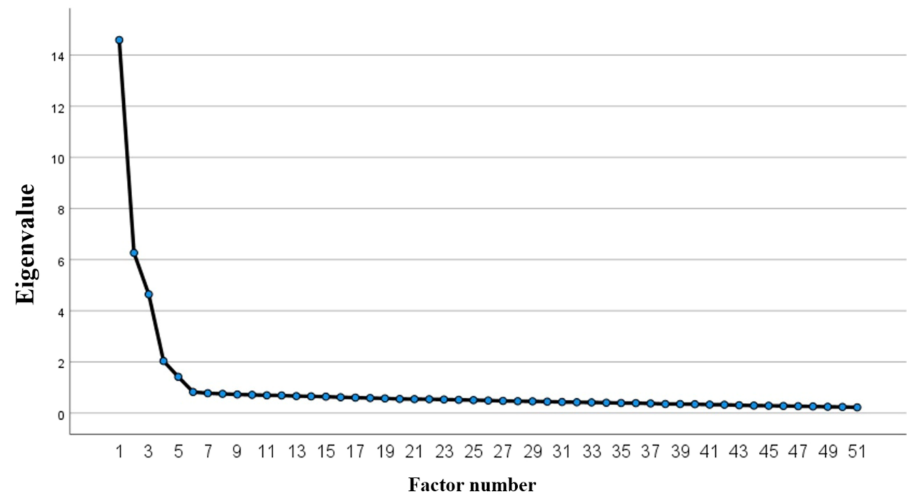


Figure 2. Scree plot. Source: Authors' own work

Table 5. Total variance explained (extraction sum of squared loadings)

Factor	% variance	Cumulative %
F1	27.623	27.623
F2	11.498	39.120
F3	8.272	47.393
F4	3.056	50.449
F5	1.833	52.281

Source(s): Authors' own work

adaptability (12 items ≥ 0.465) and career self-efficacy (5 items ≥ 0.686) (Table 6). Oblique factor correlations were moderate (Table 7) with the strongest links between adaptability and employability (0.721) and between adaptability and self-efficacy (0.624). Overall, the EFA supports the theorized five-construct measurement model and justifies computing composite scores for subsequent correlation, mediation and moderated-mediation analyses.

Given our single-sample design, we used EFA to assess the internal structure of the translated PQM and did not conduct confirmatory factor analysis (CFA) on the same dataset, as sequential EFA and CFA within one sample can inflate model fit through capitalisation on chance (Worthington and Whittaker, 2006). This approach follows prior placement quality measurement studies that established factor structure and reliability evidence using exploratory techniques without CFA including the Manchester Clinical Placement Index and the Placement Evaluation Tool (Dornan *et al.*, 2012; Cooper *et al.*, 2020). However, future studies could replicate the measurement model using CFA and test invariance in independent samples.

Descriptive statistics

As shown in Table 8, the means across the study variables cluster around the midpoint of the 1–5 scale, indicating generally moderate levels of work integrated learning quality (WIL), career self-efficacy (CSE), career adaptability (CAD), self-perceived employability (EMP) and proactive personality (PRO). CAD is marginally below the midpoint ($M = 2.985$), whereas WIL and CSE are slightly above ($M_s \approx 3.02$ – 3.03), suggesting placements were perceived as modestly supportive and associated with comparable self-beliefs. EMP also centers near neutral ($M = 3.006$) which is consistent with students neither strongly optimistic nor pessimistic about job prospects. Standard deviations are close to 1.0 for all variables ($SDs \approx 0.99$ – 1.15), reflecting adequate dispersion without floor or ceiling effects.

Correlation analysis

All three direct effect hypotheses are supported. As shown in Table 9, H1: Higher WIL quality predicts higher career self-efficacy with a moderate effect ($\beta \approx 0.44$; 19% of CSE variance). As shown in Table 10, H2: Career self-efficacy strongly predicts career adaptability ($\beta \approx 0.59$; 35% of CAD variance). As shown in Table 11, H3: Career adaptability strongly predicts self-perceived employability ($\beta \approx 0.73$; 53% of EMP variance).

Mediation testing

As shown in Table 12 and consistent with H4, WIL quality increases CSE ($a = 0.439$, $p < 0.001$) which in turn predicts career adaptability ($b = 0.473$, $p < 0.001$). The indirect effect of WIL on adaptability through self-efficacy is significant ($ab = 0.208$, biased corrected (BC) 95% confidence level (CI) [0.162, 0.256]). The direct effect remains positive but smaller ($c' = 0.090$, $p = 0.018$), indicating partial mediation. Approximately 70% of WIL's total effect on adaptability is transmitted via self-efficacy ($ab/c \approx 0.208/.298$). R^2 increases from 0.117 (total model) to 0.359 when CSE is included suggesting the mediator's substantive explanatory value.

Table 6. Rotated pattern loadings by factor (Promax, k = 4)

	1	2	3	4	5
CAD_2	0.697			−0.106	0.199
CAD_4	0.656		−0.127	−0.142	0.165
EMP_8	0.647		−0.221	0.189	
EMP_9	0.646		−0.260	0.168	
EMP_14	0.646		−0.292		
CAD_6	0.632			−0.166	0.112
EMP_7	0.618		−0.226	0.143	
EMP_11	0.618		−0.203	0.146	
CAD_1	0.616	−0.106	−0.109	−0.141	0.218
CAD_12	0.616	−0.109		−0.171	0.180
CAD_3	0.614			−0.124	0.234
CAD_11	0.613			−0.190	0.171
EMP_6	0.613	−0.130	−0.201		−0.124
EMP_3	0.610	−0.112	−0.257	0.197	−0.108
EMP_12	0.608	−0.106	−0.199		
CAD_5	0.604			−0.223	0.133
CAD_10	0.603			−0.145	0.261
CAD_8	0.603			−0.225	0.175
EMP_10	0.599		−0.273	0.159	−0.185
CSE_1	0.599		0.242	−0.302	−0.282
CAD_9	0.598			−0.121	0.113
EMP_13	0.597	−0.107	−0.193	0.220	
EMP_2	0.593	−0.172	−0.204	0.181	
EMP_4	0.592		−0.226		
EMP_15	0.590	−0.102	−0.213	0.135	
EMP_16	0.589	−0.105	−0.236	0.215	
CAD_7	0.586	−0.130		−0.175	0.187
EMP_1	0.586		−0.239	0.193	−0.129
EMP_5	0.585		−0.236	0.192	
CSE_5	0.570		0.199	−0.364	−0.290
CSE_4	0.565		0.215	−0.311	−0.265
CSE_2	0.565	0.101	0.224	−0.345	−0.270
CSE_3	0.561		0.253	−0.357	−0.257
PRO_1	0.251	0.747	0.113		
PRO_3	0.250	0.737	0.151		
PRO_2	0.273	0.735			
PRO_9	0.289	0.727			
PRO_7	0.249	0.718	0.117	0.112	
PRO_8	0.228	0.716	0.110		
PRO_5	0.236	0.714			
PRO_10	0.253	0.713	0.133		
PRO_6	0.281	0.702			
PRO_4	0.266	0.670	0.104		
WIL_4	0.386	−0.245	0.628	0.169	
WIL_3	0.388	−0.204	0.613	0.174	
WIL_1	0.391	−0.227	0.611	0.174	
WIL_8	0.415	−0.251	0.609	0.177	
WIL_7	0.401	−0.255	0.605		
WIL_2	0.377	−0.292	0.602	0.160	
WIL_5	0.342	−0.258	0.590	0.171	
WIL_6	0.431	−0.228	0.561	0.118	

Note(s): Extraction Method: Principal Axis Factoring
a. 5 factors extracted. 4 iterations required

Source(s): Authors' own work

Table 7. Factor correlation matrix (oblique rotation)

Factor	EMP	PRO	WIL	CAD	CSE
EMP	1.000	0.157	0.258	0.721	0.479
PRO	0.157	1.000	−0.004	0.182	0.309
WIL	0.258	−0.004	1.000	0.366	0.446
CAD	0.721	0.182	0.366	1.000	0.624
CSE	0.479	0.309	0.446	0.624	1.000

Source(s): Authors' own work**Table 8.** Sample descriptive statistics

Variable	N	Min	Max	Mean	SD
WIL	477	1	5	3.019	1.143
CSE	477	1	5	3.027	1.150
CAD	477	1	5	2.985	0.995
EMP	477	1	5	3.006	0.992
PRO	477	1	5	3.014	1.121

Source(s): Authors' own work**Table 9.** Linear regression predicting WIL → CSE (H1)

Predictor	b	SE	β	<i>t</i>	<i>p</i>	95% CI for b
Constant	1.701	0.134	–	12.685	<0.001	[1.437, 1.964]
WIL	0.439	0.042	0.437	10.577	<0.001	[0.358, 0.521]

Note(s): Model: $R = 0.437$, $R^2 = 0.191$, Adj. $R^2 = 0.189$, $F(1,475) = 111.863$, $p < 0.001$ **Source(s):** Authors' own work**Table 10.** Linear regression predicting CSE → CAD (H2)

Predictor	b	SE	β	<i>t</i>	<i>p</i>	95% CI for b
Constant	1.434	0.104	–	13.840	<0.001	[1.230, 1.638]
CSE	0.512	0.032	0.592	16.009	<0.001	[0.449, 0.575]

Note(s): Model: $R = 0.592$, $R^2 = 0.350$, Adj. $R^2 = 0.349$, $F(1,475) = 256.284$, $p < 0.001$ **Source(s):** Authors' own work**Table 11.** Linear regression predicting CAD → EMP (H3)

Predictor	b	SE	β	<i>t</i>	<i>p</i>	95% CI for b
Constant	0.833	0.098	–	8.481	<0.001	[0.640, 1.026]
CAD	0.728	0.031	0.730	23.304	<0.001	[0.666, 0.789]

Note(s): Model: $R = 0.730$, $R^2 = 0.533$, Adj. $R^2 = 0.532$, $F(1,475) = 543.098$, $p < 0.001$ **Source(s):** Authors' own work

Table 12. Mediation of the effect of WIL → CSE → CAD

Path/Effect	b	SE (HC3)	t	p	95% CI for b
a: WIL → CSE	0.439	0.039	11.154	<0.001	[0.362, 0.517]
b: CSE → CAD (controlling WIL)	0.473	0.034	14.038	<0.001	[0.407, 0.540]
c (total): WIL → CAD	0.298	0.038	7.772	<0.001	[0.223, 0.373]
c' (direct): WIL → CAD (controlling CSE)	0.090	0.038	2.379	0.018	[0.016, 0.164]
ab (indirect via CSE)	0.208	0.024	–	–	Boot 95% CI [0.162, 0.256]
Note(s): Model fit: CSE model $R^2 = 0.191$; CAD model with mediator $R^2 = 0.359$; CAD total-effect model $R^2 = 0.117$ Completely standardized indirect: ab_cs = 0.239 (Boot 95% CI [0.190, 0.292]) Bootstrap: 5,000 samples; bias-corrected CIs; HC3 robust SEs					
Source(s): Authors' own work					

Serial mediation testing

Tables 13 and 14 show that H5 is supported. The serial indirect effect WIL → CSE → CAD → EMP is significant (effect = 0.147, 95% CI [0.115, 0.185]). The CAD-only path is also significant but smaller (0.064, CI [0.010, 0.116]), whereas the CSE-only path is not. The direct effect of WIL on employability becomes nonsignificant once mediators are included ($c' = -0.011$, $p = 0.718$), indicating full mediation overall. Of WIL's total effect on employability ($c = 0.215$), about 68% is carried by the serial chain (0.147/0.215), with a further ~30% via the CAD-only route, aligning with SCCT's sequence whereby quality WIL boosts self-efficacy which enhances adaptability, which in turn elevates employability.

Moderation testing

Tables 15 and 16 show that H6 is supported. The WIL × PRO interaction is positive and significant ($b = 0.197$, $p < 0.001$), adding $\Delta R^2 = 0.046$ to the model. Simple-slopes tests show

Table 13. Path coefficients (HC3 robust SEs)

Path	b	SE	t	p	95% CI
a ₁ : WIL → CSE	0.439	0.039	11.154	<0.001	[0.362, 0.517]
d ₂₁ : CSE → CAD	0.473	0.034	14.038	<0.001	[0.407, 0.540]
b ₂ : CAD → EMP	0.709	0.034	20.710	<0.001	[0.642, 0.776]
b ₁ : CSE → EMP	0.034	0.036	0.951	0.342	[−0.037, 0.105]
c (total): WIL → EMP	0.215	0.039	5.573	<0.001	[0.139, 0.291]
c' (direct): WIL → EMP (CSE, CAD)	−0.011	0.030	−0.361	0.718	
Note(s): Model R^2 : CSE = 0.191; CAD = 0.359; EMP (with mediators) = 0.534					
Source(s): Authors' own work					

Table 14. Bootstrapped indirect effects (5,000 samples; bias-corrected CIs)

Indirect path	Effect	Boot 95%CI	CI excludes 0
Primary hypothesised indirect effect (serial): WIL → CSE → CAD → EMP	0.147	[0.115, 0.185]	Yes
Total indirect	0.226	[0.166, 0.287]	Yes
Other specific indirect effects: WIL → CAD → EMP	0.064	[0.010, 0.116]	Yes
Other specific indirect effects: WIL → CSE → EMP	0.015	[−0.016, 0.045]	No
Source(s): Authors' own work			

Table 15. Path coefficients (HC3 robust SEs)

Term	b	SE	<i>t</i>	<i>p</i>	95% CI
Constant	2.631	0.348	7.553	<0.001	[1.947, 3.316]
WIL	−0.154	0.105	−1.468	0.143	[−0.360, 0.052]
PRO	−0.310	0.108	−2.873	0.004	[−0.522, −0.098]
WIL × PRO	0.197	0.032	6.261	<0.001	[0.135, 0.259]

Source(s): Authors' own work**Table 16.** Conditional effect of WIL on CSE at levels of PRO

PRO level	Effect of WIL→CSE	SE	<i>t</i>	<i>p</i>	95% CI
Low (<i>p</i> ₁₆ = 1.700)	0.182	0.057	3.182	0.002	[0.069, 0.294]
Medium (<i>p</i> ₅₀ = 3.000)	0.438	0.035	12.639	<0.001	[0.370, 0.506]
High (<i>p</i> ₈₄ = 4.252)	0.685	0.049	13.989	<0.001	[0.589, 0.781]

Source(s): Authors' own work

that WIL's positive association with CSE strengthens as proactivity increases via $b = 0.182$ at low PRO, 0.438 at median PRO and 0.685 at high PRO (all $p \leq 0.002$). Johnson–Neyman analysis indicates the WIL effect on CSE is significant for most of the sample (PRO > 1.420). This means that more proactive students derive greater self-efficacy gains from higher-quality WIL which is consistent with the theorized person-by-context moderation.

Hypotheses testing summary

As shown in [Table 17](#), all six hypotheses were supported. Placement quality was positively associated with career self-efficacy and career self-efficacy was positively associated with career adaptability, while career adaptability was positively associated with self-perceived employability. Mediation tests indicated that placement quality related to adaptability partly through self-efficacy and its association with self-perceived employability was largely transmitted through the sequential pathway via self-efficacy and adaptability. Moderation tests further indicated that proactive personality strengthened the association between placement quality and career self-efficacy, suggesting that more proactive students extracted larger efficacy gains from higher-quality placements. Overall, the pattern of findings aligns with the proposed SCCT mechanism.

Discussion

This study set out to unpack how and for whom high-quality work-integrated learning (WIL) relates to self-perceived employability among Henan TVET students. Grounded in social cognitive career theory (SCCT) and career-construction perspectives, we advanced a serial process in which WIL quality predicts career self-efficacy (CSE), which predicts career adaptability (CAD), which in turn predicts self-perceived employability, and we examined whether this process is stronger for students higher in proactive personality (PRO). Across reliability, EFA, zero-order regressions and PROCESS models the findings are coherent and theoretically consistent, extending prior WIL and employability work to an under-studied Chinese TVET context.

First, the direct-effect hypotheses (H1–H3) were supported. Students who perceived higher-quality placements reported stronger CSE, which echoes SCCT's proposition that

Table 17. Hypotheses testing summary

H	Hypothesized relation	Test/Model	Key result (estimate, 95% CI)	Model fit/ ΔR^2	Decision
H1	WIL → CSE (+)	Linear regression	$\beta = 0.44$, $b = 0.44$, $t = 10.58$, $p < 0.001$, 95% CI [0.36, 0.52]	$R^2 = 0.19$	Supported
H2	CSE → CAD (+)	Linear regression	$\beta = 0.59$, $b = 0.51$, $t = 16.01$, $p < 0.001$, 95% CI [0.45, 0.58]	$R^2 = 0.35$	Supported
H3	CAD → EMP (+)	Simple regression	$\beta = 0.73$, $b = 0.73$, $t = 23.30$, $p < 0.001$, 95% CI [0.67, 0.79]	$R^2 = 0.53$	Supported
H4	WIL → CSE → CAD	PROCESS Model 4 (mediation)	Indirect ($a \times b$) = 0.21, Boot 95% CI [0.16, 0.26]; Direct $c' = 0.09$, $p = 0.018$	R^2 : total 0.12 → with M 0.36	Supported (partial mediation)
H5	WIL → CSE → CAD → EMP	PROCESS Model 6 (serial mediation)	Serial Ind3 = 0.15, Boot 95% CI [0.12, 0.19]; Total indirect = 0.23 [0.17, 0.29]; $c' = -0.01$, $p = 0.718$	R^2 (EMP with mediators) = 0.53	Supported (full mediation overall)
H6	PRO × (WIL → CSE)	PROCESS Model 1 (moderation)	Interaction $b = 0.20$, $p < 0.001$; simple slopes at PRO: low = 0.18 ($p = 0.002$), median = 0.44 ($p < 0.001$), high = 0.69 ($p < 0.001$); J–N: PRO > 1.42	$\Delta R^2 = 0.05$	Supported

Source(s): Authors' own work

supportive, mastery-rich environments cultivate efficacy (Bandura, 1997; Lent *et al.*, 1994; Lent and Brown, 2020) and aligns with evaluation evidence that well-designed WIL can strengthen confidence in professional tasks (Kelly *et al.*, 2015; Martin and Rees, 2019; Pan *et al.*, 2018). In turn, higher CSE was associated with stronger CAD, which is consistent with the view that efficacy supports adaptive self-regulatory capacities, including concern, control, curiosity and confidence, that are central to career construction (Savickas and Porfeli, 2012). Finally, CAD was positively associated with self-perceived employability, reinforcing evidence that adaptability underpins positive career evaluations and outcomes (Rudolph *et al.*, 2017) and extending employability work in higher education (Rothwell and Arnold, 2007) to the Chinese TVET sector.

Second, the mediation findings clarify how WIL quality matters. Consistent with H4, the association between WIL quality and career adaptability was transmitted in part through career self-efficacy. This pattern suggests that high-quality WIL does more than directly encourage adaptive career planning; it builds efficacy beliefs that enable adaptability. For H5, when self-perceived employability was modelled as the distal outcome, the evidence supported an indirect pathway operating primarily through the sequential mechanism via self-efficacy and adaptability. A plausible explanation is that self-perceived employability is a higher-order evaluative judgement, so placement quality is unlikely to translate into employability judgements unless it is internalised into durable personal resources, particularly confidence in one's capability and the adaptive capacity to manage transitions. This integrated mechanism connects prior evidence on WIL's contribution to confidence (e.g. Kelly *et al.*, 2015) and the employability relevance of adaptive resources (Rudolph *et al.*, 2017; Rothwell and Arnold, 2007) into a single pathway tested in a multi-college TVET sample.

Third, H6 supported a person-by-context interaction. Proactive personality strengthened the association between WIL quality and career self-efficacy, which accords with the idea that proactive students are more likely to seek feedback, responsibility and learning opportunities, thereby extracting more mastery experiences from rich placements (Bateman and Crant, 1993; Major *et al.*, 2006). Importantly, the results suggest that the benefits of higher-quality placements are not limited to highly proactive students, but that gains are amplified when

students are dispositionally agentic. This moderating pattern offers a more nuanced answer to the “for whom” question and helps make sense of heterogeneity in WIL outcomes reported in the broader literature (Jackson, 2015; Ng *et al.*, 2022).

Measurement evidence strengthens confidence in these inferences. All scales demonstrated satisfactory internal consistency and a coherent factor structure, and the EFA supported the theorised five-factor solution with conceptually sensible associations among constructs. Notably, we translated and applied the Placement Quality Measure (Kelly *et al.*, 2015) in China, where placement quality (rather than only participation) is rarely assessed. This represents a methodological contribution that responds to calls to move beyond descriptive accounts toward stronger measurement and modelling in Chinese TVET research (Dai *et al.*, 2024; Zhou *et al.*, 2023).

Taken together, the pattern of results extends prior knowledge in three ways. Conceptually, the study specifies and supports an SCCT-consistent, psychologically plausible chain from the quality of the work environment to self-perceived employability through self-efficacy and adaptability. This integrates strands that are often examined separately (WIL and confidence; adaptability and employability) into a single process model, and it shows that the WIL–employability association is explained mainly through these proximal resources when both are considered. Empirically, we contribute multi-college evidence from public TVET colleges in Henan, a context under-represented in the international literature and often dominated by single-institution or narrative studies (Dai *et al.*, 2024). Methodologically, we validate an established WIL quality measure and demonstrate that attention to quality components, including leadership and support, feedback and organised learning opportunities, is more informative for understanding employability judgements than binary participation indicators (Kelly *et al.*, 2015).

Conclusion and recommendations for future studies

This study clarifies how high-quality work-integrated learning (WIL) relates to self-perceived employability in Chinese TVET. Anchored in SCCT and career-construction perspectives, we showed that WIL quality operates largely indirectly as richer placements build career self-efficacy, which strengthens career adaptability and adaptability in turn underpins employability. We also identified a clear boundary condition in proactive personality which amplifies the efficacy gains students derive from high-quality WIL. Beyond explaining variance in outcomes, the work makes two contributions often missing in the TVET literature: (1) it specifies an integrated psychological pathway from learning environment to self-perceived employability and (2) it advances measurement by applying and validating a Chinese translation of the placement quality measure, shifting attention from placement “hours” to placement quality.

Practically, the findings reorient programme design toward the ingredients of high-quality WIL including organised tasks, supportive supervision, structured feedback, progressive responsibility and explicit theory-practice integration. These are the levers that cultivate efficacy and, through it, adaptability. Curricula can scaffold these mechanisms with pre-placement goal-setting/problem-solving sessions, in-placement coaching that engineers mastery experiences and post-placement reflective consolidation. Because proactivity magnifies benefits, providers should add targeted supports for less-proactive students, scheduled supervisor touchpoints, guided feedback-seeking and low-stakes opportunities to initiate improvements so gains are distributed more equitably. At the system level, routine use of a quality metric (PQM) can guide monitoring and continuous improvement more effectively than participation counts alone. Given the PQM was translated and validated for Chinese TVET in this study (Kelly *et al.*, 2015), it can be used as a standardised indicator to track placement quality over time and compare performance across programmes, colleges and host organisations. PQM scores can be disaggregated by the components it captures such as leadership and support, welcome and reception, facilities, organisation and instruction,

observation opportunities and feedback, allowing institutions to pinpoint where quality is breaking down and target interventions accordingly. At the institutional level, this enables routine quality assurance cycles, early warning thresholds for underperforming placement sites and evidence-based decisions on supervisor training, placement partner retention and resource allocation. At the policy level, aggregated PQM monitoring can support minimum quality standards, funding or incentive schemes tied to placement quality and accountability mechanisms that prioritise the quality of WIL provision over simple participation volume.

The study has limitations. Its cross-sectional, self-report design constrains causal inference and invites common-method concerns, despite strong reliability and factor structure. The sample choice of public TVET colleges in one province limits generalisability. These boundaries shape a clear agenda for future research: (1) longitudinal or cohort-sequential designs spanning pre-, in- and post-placement phases to test the SCCT sequence and possible reciprocity between efficacy and adaptability; (2) experimental or quasi-experimental evaluations of specific WIL design features (e.g. feedback intensity, mentoring structures), with attention to whether effects are strongest for lower-proactivity students; (3) multi-source and objective outcomes (supervisor ratings, documented task complexity, job search behaviours, early employment) to triangulate beyond perception; (4) cross-context replications (other provinces, private and higher-vocational institutions) and multilevel analyses to examine institutional and host-site influences; and (5) formal CFA/SEM with invariance tests and comparisons to alternative causal orderings to consolidate the measurement and structural claims.

Appendix

Survey questions

Work-integrated learning (WIL) quality

Kelly *et al.* (2015 – 8-item scale)

- (1) I received useful feedback on my performance during the placement. — 在实习期间,我收到了对我表现有用的反馈。
- (2) My placement provided adequate facilities and resources for learning. — 我的实习提供了充足的学习设施和资源。
- (3) The placement was well organised. — 实习安排井然有序。
- (4) I had opportunities to observe workplace practices relevant to my studies. — 我有机会观察与我专业相关的工作实践。
- (5) I was given appropriate levels of responsibility during the placement. — 实习期间我被赋予了适当程度的职责。
- (6) The placement provided effective leadership. — 实习提供了有效的领导与管理。
- (7) Staff in the workplace were supportive of my learning. — 工作场所的工作人员支持我的学习。
- (8) The placement provided high-quality instruction and guidance. — 实习提供了高质量的教学与指导。

Career self-efficacy

Betz *et al.* (1996 – 5-item short form)

- (1) How confident are you that you could choose a career that fits your interests and abilities? — 您有多大信心能够选择一份符合您兴趣和能力的职业?
- (2) How confident are you that you could find information about careers that interest you? — 您有多大信心能够找到有关您感兴趣职业的信息?

- (3) How confident are you that you could make a career plan and carry it out? — 您有多大信心能够制定职业规划并将其付诸实施?
- (4) How confident are you that you could handle the challenges of a job search? — 您有多大信心能够应对求职过程中的各种挑战?
- (5) How confident are you that you could solve problems that might arise in your career? — 您有多大信心能够解决职业生涯中可能出现的问题?

Career adapt-abilities scale – Short Form

Maggiori *et al.* (2017 – 12 items; derived from Savickas and Porfeli, 2012)

- (1) I can overcome obstacles that occur in my career. — 我能够克服职业生涯中出现的障碍。
- (2) I can think about the future of my career. — 我能够思考自己职业的未来。
- (3) I can prepare myself for future challenges in my career. — 我能够为职业中的未来挑战做好准备。
- (4) I can make decisions about my career by myself. — 我能够独立做出与职业相关的决定。
- (5) I can take responsibility for my career. — 我能够为自己的职业负责。
- (6) I can stand by my career decisions. — 我能够坚持自己的职业决策。
- (7) I can explore new opportunities in my career. — 我能够探索职业中的新机会。
- (8) I can look for information about careers that interest me. — 我能够寻找令我感兴趣的职业信息。
- (9) I can investigate career options that fit my interests. — 我能够研究符合我兴趣的职业选择。
- (10) I can perform tasks efficiently in my career. — 我能够在工作中高效完成任务。
- (11) I can learn new skills that will help me in my career. — 我能够学习有助于职业发展的新技能。
- (12) I can face challenges in my career with confidence. — 我能够自信地面对职业中的挑战。

Self-perceived employability

Rothwell and Arnold (2007 – 16-item scale)

- (1) I am confident that my skills and qualifications make me employable in the job market. — 我有信心自己的技能与资历使我在就业市场上具备竞争力。
- (2) I have a good knowledge of opportunities in my field. — 我对本领域的就业机会了解充分。
- (3) I keep myself up-to-date with developments in my field. — 我会持续跟进行业发展的最新动态。
- (4) I have a strong personal brand. — 我具备鲜明的个人品牌。
- (5) I have a clear idea of the career I want. — 我对自己想要的职业有清晰的认识。
- (6) I am confident in my ability to perform well at interviews. — 我有信心在面试中表现出色。
- (7) I have a good understanding of my strengths and weaknesses. — 我清楚了解自己的优势与不足。
- (8) There are plenty of job opportunities in my field. — 我所在领域有充足的就业机会。
- (9) Employers are keen to recruit people with my qualifications. — 雇主愿意招聘具备我这种资历的人才。
- (10) My university has a good reputation among employers. — 我的院校在雇主中口碑良好。
- (11) My field of study is in high demand. — 我所学专业的市场需求很高。

- (12) The employment outlook in my field is positive. — 我所在领域的就业前景良好。
- (13) My university provides good career advice and support. — 我的院校提供良好的职业咨询与支持。
- (14) My university helps me develop transferable skills. — 我的院校有助于我培养可迁移技能。
- (15) My university’s alumni network is helpful for finding employment. — 我的院校校友网络有助于我寻找工作。
- (16) Employers are familiar with the quality of graduates from my university. — 雇主熟悉并认可我校毕业生的培养质量。

Proactive personality – short form
Bateman and Crant (1993 – 10-item short form)

- (1) I am constantly looking for ways to improve myself or my surroundings. — 我不断寻找改进自我或周围环境的方法。
- (2) If I see something I don’t like, I fix it. — 如果我看到不满意的事情,我会主动去改进。
- (3) No matter what the odds, if I believe in something I will make it happen. — 无论困难多大,只要我相信一件事,我就会促成它发生。
- (4) I love being a champion for my ideas, even against others’ opposition. — 即使遇到他人反对,我也乐于为自己的想法积极奔走。
- (5) I excel at identifying opportunities. — 我擅长发现机会。
- (6) I am always looking for better ways to do things. — 我总是在寻找更好的做事方式。
- (7) If I believe in an idea, no obstacle will prevent me from making it happen. — 只要我认同一个想法,没有障碍能阻止我把它实现。
- (8) I can spot a good opportunity long before others can. — 早在他人之前我就能察觉到良机。
- (9) I am great at turning problems into opportunities. — 我善于把问题转化为机会。
- (10) I feel driven to make a difference in my community, organisation, or world. — 我有动力为我的社区、组织或世界带来改变。

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