



Is Career Development Learning Alone Sufficient to Enhance Graduate Employability in Asia? The Role of Self-Efficacy and Language Proficiency

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ABSTRACT

This study examines the impact of Career Development Learning (CDL) on students' Self-Perceived Employability (SPE), with Self-Efficacy (SE) as a mediator and English Language Proficiency (ELP) as a moderator. Using a quantitative cross-sectional design, data were collected from 446 final-year undergraduate students at Malaysian private higher education institutions and analyzed using Partial Least Squares Structural Equation Modelling (PLS-SEM). The findings indicate that CDL significantly enhances both self-efficacy and employability perceptions. Self-efficacy partially mediates the relationship between CDL and SPE, suggesting that career development experiences improve employability primarily by strengthening students' confidence in applying their competencies. Furthermore, ELP positively moderates the relationship between self-efficacy and SPE, indicating that stronger English proficiency enhances the translation of confidence into employability perceptions. These findings highlight the importance of integrating career development initiatives with interventions that strengthen students' self-efficacy and English communication skills to improve graduate employability in multilingual higher education contexts.

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1. INTRODUCTION

Graduate employability has become a major concern for higher education worldwide as universities confront increasing pressure to educate graduates for fast evolving labour markets typified by technological innovation, global competitiveness, and changing employer expectations. However, the expansion of access to higher education has not been matched by a decrease in graduate underemployment, and the persistence of mismatches between the skills of graduates and labour market demands continue to pose challenges to the successful transition from university to employment, especially in developing economies such as Malaysia.¹ Also, many graduates still find it hard to find satisfactory employment even when they have the right academic qualifications, indicating that companies are becoming more interested in how well graduates can use the knowledge and skills they have gained in the workplace.²

In response to these employability problems, higher education institutions have increasingly infused Career Development Learning (CDL) within their curricula as a deliberate means of preparing students for successful labour market transitions. CDL is a systematic approach to education that provides students with the information, skills and career management abilities needed to operate in ever-changing professional settings.³ It often includes career counselling, training in skills needed for employment, and opportunities for experiential learning that connect academic learning to the realities of the workplace.⁴ This educational perspective is mirrored in the Career EDGE model, which conceptualises employability as the product of the interaction between career development learning, work and life experience, disciplinary knowledge, generic skills and emotional intelligence.⁵ Empirical data has consistently shown that participation in CDL promotes students' career awareness, skill development and employability results. However, an increasing body of research suggests that these benefits may not be achieved exclusively through direct educational experiences but through the psychological mechanisms that influence how students understand and implement what they have learned.⁶

CDL offers students essential career-related knowledge, abilities and experiences, but these educational inputs may not inevitably transfer into higher employability perceptions. Students should also be confident in identifying, applying and communicating the competencies they have learned in professional situations. This consideration is particularly relevant in the Malaysian higher education context, where many students, including Muslim students, are expected to translate academic learning

¹ World Bank, *Malaysia Economic Monitor: Sowing the Seeds* (Washington, DC: World Bank, 2020), <https://doi.org/10.1596/978-1-4648-1605-3>.

² William E. Donald, Melanie J. Ashleigh, and Yehuda Baruch, "Students' Perceptions of Education and Employability," *Career Development International* 23, no. 5 (2018): 513–540. <https://doi.org/10.1108/CDI-09-2017-0171>.

³ Denise Jackson and Ruth Bridgstock, "What Actually Works to Enhance Graduate Employability? The Relative Value of Curricular, Co-curricular, and Extra-curricular Learning and Paid Work," *Higher Education* 81, no. 4 (2021): 723–739. <https://doi.org/10.1007/s10734-020-00570-x>; Ugochukwu C. Okolie, Paul A. Igwe, Hyginus E. Nwosu, Beatrice C. Eneje, and Sunday Mlaga, "Enhancing Graduate Employability: Why Do Higher Education Institutions Have Problems with Teaching Generic Skills?" *Policy Futures in Education* 18, no. 2 (2020): 294–313. <https://doi.org/10.1177/1478210319864824>.

⁴ Marilyn Clarke, "Rethinking Graduate Employability: The Role of Capital, Individual Attributes and Context," *Studies in Higher Education* 43, no. 11 (2018): 1923–1937. <https://doi.org/10.1080/03075079.2017.1294152>.

⁵ Lorraine Dacre Pool and Peter John Sewell, "The Key to Employability: Developing a Practical Model of Graduate Employability," *Education + Training* 49, no. 4 (2007): 277–289. <https://doi.org/10.1108/00400910710754435>; Lorraine Dacre Pool, Pamela Qualter, and Peter John Sewell, "Exploring the Factor Structure of the CareerEDGE Employability Development Profile," *Education + Training* 56, no. 4 (2014): 303–313. <https://doi.org/10.1108/ET-01-2013-0009>.

⁶ Rewan Kumar Dahal, Binod Ghimire, Dilli Raj Sharma, Dipendra Karki, and Surendra Prasad Joshi, "Bridging the Gap: How Career Development Learning Mediates Higher Education and Employability Outcomes in Nepal," *Problems and Perspectives in Management* 23, no. 1 (2025): 643–655. [https://doi.org/10.21511/ppm.23\(1\).2025.48](https://doi.org/10.21511/ppm.23(1).2025.48).

into professional practice while adapting to increasingly diverse and competitive workplaces. Social Cognitive Career Theory (SCCT) provides a good explanation of this psychological approach. SCCT suggests that people's views about their own capabilities are key to influencing career-related behaviours and outcomes.⁷ In SCCT, self-efficacy refers to an individual's belief in their ability to carry out activities successfully and accomplish desired goals.⁸ Graduates with higher self-efficacy are more likely to feel confident about their future careers and see themselves as marketable. Thus, self-efficacy is a feasible psychological mechanism by which Career Development Learning is converted into enhanced perceptions of employability, by increasing students' confidence in their capacity to effectively use their talents in the labour market.⁹

Though self-efficacy allows graduates to trust in their own talents, confidence alone might not be sufficient to boost employability if these capabilities are not adequately conveyed to potential employers.¹⁰ Thus, more emphasis has been paid to environmental elements that might improve or diminish the relationship between psychological resources and employability outcomes. English Language Proficiency (ELP) is one such characteristic that has become more significant, although it has been researched less, especially in the context of multilingual and highly competitive Asian labour markets. In Malaysia, although graduates hold the right academic qualifications, employers still view English communication competence as a key factor in graduate employment. In this setting, competency in the English language does not act solely as a communication skill, but as an enabling mechanism where graduates are able to articulate, demonstrate and transfer their competencies into employability outcomes. Therefore, graduates with similar levels of self-efficacy may have varying employability outcomes depending on their ELP level. Therefore, using ELP as a moderating variable provides a more comprehensive view of the translation of psychological confidence into employability perceptions in multilingual labour markets.¹¹

This study proposes and evaluates a moderated mediation model that addresses these theoretical and contextual gaps, exploring the link between CDL and SPE through SE, with ELP as a contextual moderator. This study contributes to the existing employability research by merging the educational, psychological and contextual views into one analytical framework, and presents a more holistic explanation of graduate employability in the multilingual Asian higher education contexts. The study tries to answer the following research questions: (RQ1) What is the effect of CDL on SPE? (RQ2) What is the influence of CDL on graduates' SE? (RQ3) What is the impact of SE on SPE? (RQ4) Does SE

⁷ Robert W. Lent, Steven D. Brown, and Gail Hackett, "Toward a Unifying Social Cognitive Theory of Career and Academic Interest, Choice, and Performance," *Journal of Vocational Behavior* 45, no. 1 (1994): 79–122. <https://doi.org/10.1006/jvbe.1994.1027>.

⁸ Merve Gerçek, "Serial Multiple Mediation of Career Adaptability and Self-Perceived Employability in the Relationship between Career Competencies and Job Search Self-Efficacy," *Higher Education, Skills and Work-Based Learning* 14, no. 2 (2024): 461–478. <https://doi.org/10.1108/HESWBL-02-2023-0036>.

⁹ Addisalem Yallow and Paul Dipitso, "Language and Employability in Higher Education Research: A Scoping Review," in *Annual Review of Comparative and International Education* 2023, ed. Alexander W. Wiseman (Bingley, UK: Emerald Publishing Limited, 2023), <https://doi.org/10.1108/S1479-36792023000046A008>.

¹⁰ Haliza Harun, Hazlina Abdullah, Hazleena Baharun, and Suzanah Selamat, "Rethinking Communicative Competence: Employers' Perspectives of English Language Use in Professional Settings," *Issues in Language Studies* 14, no. 2 (2025): 135–147. <https://doi.org/10.33736/ils.10628.2025>; Nora Mohd Basir, Yong Zulina Zubairi, Rohana Jani, and Diana Abdul Wahab, "Soft Skills and Graduate Employability: Evidence from Malaysian Tracer Study," *Pertanika Journal of Social Sciences & Humanities* 30, no. 4 (2022): 1975–1989. <https://doi.org/10.47836/pjssh.30.4.26>.

¹¹ Denise Jackson and Ruth Bridgstock, "What Actually Works to Enhance Graduate Employability? The Relative Value of Curricular, Co-curricular, and Extra-curricular Learning and Paid Work," *Higher Education* 81, no. 4 (2021): 723–739. <https://doi.org/10.1007/s10734-020-00570-x>.

mediate the association between CDL and SPE? and (RQ5) Does ELP moderate the relationship between SE and SPE?

2. METHODS

For testing the proposed hypotheses, a quantitative approach was used through numerical data analysis.¹² This study adopted a quantitative cross-sectional survey design within a positivist research paradigm to examine the relationships among CDL, SE, ELP, and SPE among final-year undergraduate students in Malaysian private higher education institutions (PrHEIs).¹³ A purposive sampling technique was employed because the study specifically targeted final-year undergraduate students who had completed their internship requirements and were therefore considered capable of evaluating their CDL experiences and perceived employability. Data were collected through a structured online questionnaire distributed via lecturers, programme coordinators, faculty administrators, university career centres, and direct invitations from the researcher to final-year undergraduates who had completed their internship requirements in private universities in Selangor. To determine the adequate sample size, Cochran's formula for a large and unspecified population was applied, and a minimum requirement of 460 respondents was obtained.¹⁴ Initial responses totalled 460, but data screening procedures, including procedures for identifying and removing outliers, resulted in a final sample of 446 valid cases for analysis.

The measurement instrument comprised previously validated scales adapted from established studies because these instruments have been extensively validated in previous research and were considered appropriate for measuring the respective constructs in the present study. Before the main data collection, the questionnaire was reviewed by the research supervisors and academic experts to ensure the clarity, relevance, and comprehensibility of the measurement items for the target respondents. CDL was assessed with the CareerEDGE Employability Development Profile on a 7-point Likert scale.¹⁵ Self-efficacy was measured using the New General Self-Efficacy Scale.¹⁶ Finally, SPE was measured using the items developed by Rothwell et al.¹⁷ Both constructs were measured using 5-point Likert scales. The study retained the original response formats of the respective instruments, with CDL measured on a seven-point Likert scale and both SE and SPE measured on five-point Likert scales. Retaining the original scaling preserves consistency with the validated instruments and facilitates meaningful comparison with findings reported in previous studies.¹⁸ Construct validity and internal

¹² Haradhan Kumar Mohajan, "Qualitative Research Methodology in Social Sciences and Related Subjects," *Journal of Economic Development, Environment and People* 7, no. 1 (2018): 23–48. <https://doi.org/10.26458/jedep.v7i1.571>.

¹³ John W. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 4th ed. (Thousand Oaks, CA: SAGE Publications, 2014); Stefan Hunziker and Michael Blankenagel, *Research Design in Business and Management: A Practical Guide for Students and Researchers* (Wiesbaden: Springer Fachmedien Wiesbaden, 2024).

¹⁴ William G. Cochran, *Sampling Techniques*, 3rd ed. (New York: John Wiley & Sons, 1977).

¹⁵ Lorraine Dacre Pool and Peter John Sewell, "The Key to Employability: Developing a Practical Model of Graduate Employability," *Education + Training* 49, no. 4 (2007): 277–289. <https://doi.org/10.1108/00400910710754435>.

¹⁶ Gilad Chen, Stanley M. Gully, and Dov Eden, "Validation of a New General Self-Efficacy Scale," *Organizational Research Methods* 4, no. 1 (2001): 62–83. <https://doi.org/10.1177/109442810141004>; Damianus Abun, Marlene M. Nicolas, Estrella C. Apollo, Theogenia C. Magallanes, and Mary Joy O. Encarnacion, "Employees' Self-Efficacy and Work Performance of Employees as Mediated by Work Environment," *International Journal of Research in Business and Social Science* 10, no. 7 (2021): 1–15. <https://doi.org/10.20525/ijrbs.v10i7.1397>.

¹⁷ Andrew Rothwell, Ian P. Herbert, and Frances Rothwell, "Self-Perceived Employability: Construction and Initial Validation of a Scale for University Students," *Journal of Vocational Behavior* 73, no. 1 (2008): 1–12. <https://doi.org/10.1016/j.jvb.2007.12.001>.

¹⁸ Joseph F. Hair Jr., G. Tomas M. Hult, Christian M. Ringle, Marko Sarstedt, Nicholas P. Danks, and Soumya Ray, *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R* (Cham: Springer, 2021).

consistency reliability were subsequently evaluated through the assessment of indicator loadings, average variance extracted (AVE), Cronbach's alpha, composite reliability, and discriminant validity following the recommended PLS-SEM guidelines. The detailed measurement model assessment is presented in the Results section.

ELP was operationalised as an observed ordinal variable based on respondents' self-reported overall ELP. Respondents classified their proficiency into one of four ordered categories (Basic, Intermediate, Advanced, or Native), representing increasing levels of English proficiency. Unlike the other study variables, ELP was not conceptualised as a latent construct requiring multiple indicators but was treated as an observed contextual variable and incorporated as a moderator in the structural model. This operationalisation was considered appropriate because the study sought to distinguish respondents according to their overall level of ELP rather than to measure multiple dimensions of language competence. Consistent with PLS-SEM guidelines, moderating variables may be modelled as observed variables when they represent directly observable respondent characteristics rather than latent psychological constructs. Accordingly, ELP was included to examine whether different levels of ELP influenced the strength of the relationship between SE and SPE. Although self-reported proficiency provides an efficient means of categorising respondents according to their perceived ELP, the use of a single-item ordinal measure represents a practical rather than comprehensive assessment of language competence. This limitation is acknowledged and discussed in the Discussion section.

PLS-SEM was employed to analyse the proposed research model using SmartPLS 4.0. PLS-SEM was considered appropriate because the study examined a relatively complex structural model comprising multiple latent constructs, direct relationships, mediation, and moderation effects simultaneously. Furthermore, the study sought to extend existing employability frameworks by investigating the predictive relationships among CDL, SE, ELP, and SPE. As PLS-SEM is prediction-oriented and well suited for theory development and extension, it provides an appropriate analytical approach for examining complex relationships among latent constructs. In addition, PLS-SEM is robust to violations of multivariate normality and is widely recommended for behavioural and social science research involving complex structural models.¹⁹

3. FINDINGS AND DISCUSSION

Findings

3.1 Demographic Profile of the Respondents

Demographic characteristics of the participants, including gender, age, ELP and faculty, are presented in Table 1. Concerning gender, the study's participants included 186 male students (41.7%) and 260 female students (58.3%). All respondents were between the ages of 21 and 25, thus allowing for a uniform age group for analysis. In terms of self-reported ELP, 20.6% reported being native speakers, 24.4% advanced-level speakers, 37.0% intermediate-level speakers, and 17.9% basic-level speakers of the language. Students were of different academic disciplines. The largest group was the Faculty of Accountancy, Finance and Management (20.0%), followed by students from the Faculty of

¹⁹ Joseph F. Hair Jr., G. Tomas M. Hult, Christian M. Ringle, and Marko Sarstedt, *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (Sage Publications, 2022).

Science (18.4%), the Faculty of Education (16.4%) and the Faculty of Art and Social Sciences (14.6%). Other faculties included Business and Administration (8.7%), Engineering and Science (10.3%), Hospitality, Tourism and Events (4.7%), Computer Science and Information Technology (3.1%), Economics and Administration (2.7%) and Language and Linguistics (1.1%).

3.2 Measurement Model

The reflecting measurement model's indicator loadings (IL), average variance extracted (AVE), Cronbach's alpha (CA), and composite reliability (CR) were examined for convergent validity and internal consistency in Table 2.²⁰ The results show that all constructs meet reliability and validity standards. Item dependability was high because all indication loadings ranged from 0.702 to 0.949 and were near to 0.70. CDL showed strong loadings (0.928–0.949), indicating a well-defined construct. Convergent validity was supported by Self-Efficacy (0.702–0.7770) and SPE (0.725–0.766) loadings. All constructs had Cronbach's alpha and composite reliability ratings over 0.70 for internal consistency. CDL was most reliable (CA = 0.965; CR = 0.973), followed by SE and SPE (CA = 0.889; CR = 0.911 and 0.886, respectively), suggesting significant internal consistency across all constructs. All AVE values exceeded 0.50, confirming convergent validity. CDL had a high AVE (0.878). SE (AVE = 0.562) and SPE (AVE = 0.556) exceeded the threshold. Like other PLS-SEM uses for single-indicator constructions, ELP was regarded as a single-item ordinal variable with 1.000 indicator loading. The measurement model has strong reliability and convergent validity, laying the groundwork for structural model analysis. The Harman single-factor test was used to assess for common method bias (CMB). One component explained less than 50% of the variance, showing that common technique bias is unlikely in this study. The full collinearity variance inflation factor (VIF) values were similarly below the recommended threshold of 3.3, demonstrating that common technique bias does not significantly affect findings.²¹

Table 2. *Measurement model*

Construct/Item	IL	CA	CR (rho_a)	CR (rho_c)	AVE
Career Development Learning (CDL)		0.965	0.966	0.973	0.878
CDL1	0.949				
CDL2	0.936				
CDL3	0.928				
CDL4	0.940				
CDL5	0.932				
English Language Proficiency (ELP) (Ordinal)	1.000				
Self-Efficacy (SE)		0.889	0.894	0.911	0.562
SE1	0.754				
SE2	0.724				
SE3	0.762				
SE4	0.770				

²⁰ Joseph F. Hair Jr., Jeffrey J. Risher, Marko Sarstedt, and Christian M. Ringle, "When to Use and How to Report the Results of PLS-SEM," *European Business Review* 31, no. 1 (2019): 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>.

²¹ Ned Kock, "Common Method Bias in PLS-SEM: A Full Collinearity Assessment Approach," *International Journal of e-Collaboration* 11, no. 4 (2015): 1–10. <https://doi.org/10.4018/ijec.2015100101>.

SE5	0.769				
SE6	0.702				
SE7	0.759				
SE8	0.757				
Self-Perceived Employability (SPE)		0.886	0.887	0.909	0.556
SPE10	0.733				
SPE11	0.763				
SPE13	0.739				
SPE16	0.726				
SPE5	0.725				
SPE6	0.754				
SPE8	0.756				
SPE9	0.766				
ELP moderates Self-Efficacy	1.000				

IL: Indicator Loading
CA: Cronbach Alpha
CR: Composite Reliability
AVE: Average Variance

Source: Researchers' construct

3.3 Validity Assessment

The discriminant validity was evaluated using the Heterotrait-Monotrait ratio (HTMT) based on the threshold of 0.85 suggested in the literature.²² Table 3 presents the HTMT values, which were below the threshold, ranging from 0.036 to 0.747, indicating the establishment of discriminant validity among all constructs. The highest level of HTMT value was between SE and SPE (0.747), which was within the acceptable threshold. All other correlations between constructs, including those involving ELP and the interaction term (ELP x SE), were much lower, providing further support for the distinctiveness of the constructs. Taken together, the findings provide support for the empirical distinctiveness of each construct and thus satisfy the requirements for discriminant validity.

Table 3. Discriminant Validity – HTMT Matrix

Constructs	CDL	ELP	SE	SPE	ELP x SE
Career Development Learning (CDL)					
English Language Proficiency (ELP)	0.219				
Self-Efficacy (SE)	0.651	0.302			
Self-Perceived Employability (SPE)	0.529	0.200	0.747		
English Language Proficiency (ELP) x Self-Efficacy (SE)	0.126	0.099	0.124	0.036	

Source: Researchers' construct

Model fit was evaluated using standardised root mean square residual (SRMR), d_ULS, d_G, chi-square and normed fit index (NFI) following the recommended guidelines for PLS-SEM. Table 4 shows that the SRMR value for the saturated model was 0.060, and the estimated model was 0.065, both below the cut-off value of 0.08, suggesting an acceptable model fit. The discrepancy measures (d_ULS

²² Joseph F. Hair Jr., Jeffrey J. Risher, Marko Sarstedt, and Christian M. Ringle, "When to Use and How to Report the Results of PLS-SEM," *European Business Review* 31, no. 1 (2019): 2-24. <https://doi.org/10.1108/EBR-11-2018-0203>.

and d_G) showed slightly larger values in the estimated model than in the saturated model, as expected, and the chi-square values also showed a marginal increase. Further, the NFI values of both models were close to the recommended value of 0.90 (0.890 and 0.887), indicating an acceptable model fit. In general, these results indicate that the model fit the data well, thus supporting its adequacy for further evaluation of the structural model.

Table 4. Model Fit Indices

Fit Indices	Saturated model	Estimated model
SRMR	0.060	0.065
d_ULS	0.908	1.060
d_G	0.295	0.304
Chi-square	751.008	770.494
NFI	0.890	0.887

Source: Researchers' construct

3.4 Structural Model

The path coefficients and the associated t-values were employed to assess the structural relationships. The structural model, as shown in Figure 1, includes the effects of CDL on SPE, CDL on SE and SE on SPE. Moreover, the model analyses the mediating effect of SE in the relationship between CDL and SPE and the moderating effect of ELP in the relationship between SE and SPE. ELP was measured as a single-item ordinal variable measuring respondents' self-assessed level of proficiency (e.g., basic, intermediate, advanced, and native). Single-item measures are considered appropriate for constructs that are concrete, unidimensional and easy to interpret by respondents, especially in the context of PLS-SEM applications. Furthermore, considering ELP as an ordinal variable is consistent with the categorical nature of ELP and previous employability research that has regarded proficiency levels as important discriminators when evaluating graduate capabilities.

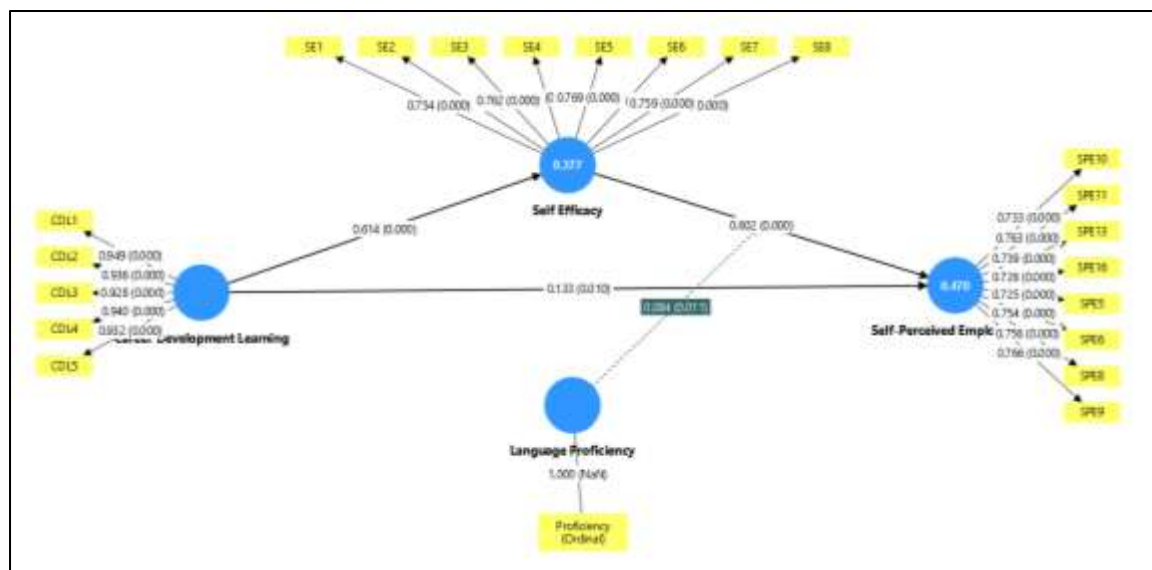


Figure 1. Structural Model with t-values

Source: Researchers' construct

The significance of the hypothesised paths within the structural model was assessed by bootstrapping using 10,000 resamples. The estimated path coefficients were tested for significance

using t-statistics and p-values.²³ The relationship was considered statistically significant when the p-value was less than 0.05, and the t-value was greater than the critical value of 1.96. The results in Table 5 indicate the statistical significance of all the hypothesised relationships. CDL had a significant impact on SPE ($\beta = 0.133$, $t = 2.580$, $p < 0.05$); hence, H1 was supported. In addition, the effect of CDL on SE was strong and statistically significant ($\beta = 0.614$, $t = 17.289$, $p < 0.001$), and H2 was supported. The predictor SE was statistically significant for SPE ($\beta = 0.602$, $t = 13.223$, $p < 0.001$); hence, H3 was supported. The indirect effect of CDL on SPE via SE was statistically significant ($\beta = 0.370$, $t = 9.873$, $p < 0.001$), hence confirming the mediating role of SE and supporting H4. This suggests that CDL primarily boosts students' perceptions of their employability by strengthening their SE. The moderating effect of ELP on the relationship between SE and SPE was also found significant ($\beta = 0.084$, $t = 2.545$, $p < 0.05$), supporting H5. Overall, the results of this study provide strong support for the mediating role of SE and the moderating role of ELP, emphasising the significance of both individual confidence and contextual factors in influencing students' perceptions of their employability.²⁴ It indicates that the positive effect of SE on perceptions of employability is stronger for students with higher levels of ELP. The variance inflation factor (VIF) values were used to test for multicollinearity before assessing the structural relationships. All the VIF values were below the recommended threshold of 3.3, suggesting that multicollinearity is not a problem and the predictor constructs do not present high levels of collinearity.²⁵

Table 5. Assessment Results of the Structural Model Path Coefficient -Direct, Total and Specific Indirect & Mediating Effect

H	Relationship	β (OS)	SM	SD	t-value	p-value	Decision
H ₀₁	CDL → SPE	0.133	0.130	0.051	2.580	0.010	Supported
H ₀₂	CDL → SE	0.614	0.615	0.036	17.289	< 0.001	Supported
H ₀₃	SE → SPE	0.602	0.606	0.046	13.223	< 0.001	Supported
H ₀₄	CDL → SE → SPE (Indirect Effect)	0.370	0.373	0.037	9.873	< 0.001	Supported
H ₀₅	ELP × SE → SPE	0.084	0.083	0.033	2.545	0.011	Supported

Source: Researchers' construct

The explanatory power of the model for the endogenous constructs was assessed using the coefficient of determination (R^2). The R^2 values, as suggested by Henseler et al., show the amount of variance in the endogenous variables explained by the exogenous variables.²⁶ Table 6 shows the results. CDL accounts for 37.7% of the variance in SE ($R^2 = 0.377$), which can be classified as a moderate level of explanatory power. Furthermore, the combined effect of CDL, SE and the interaction term (English Language Proficiency × Self-Efficacy) accounts for 47.0% of the variance in SPE ($R^2 = 0.470$), which indicates moderate explanatory power. In general, the R^2 values are above the minimum of 0.10

²³ Joseph F. Hair Jr., Jeffrey J. Risher, Marko Sarstedt, and Christian M. Ringle, "When to Use and How to Report the Results of PLS-SEM," *European Business Review* 31, no. 1 (2019): 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>.

²⁴ Mel Fugate, Angelo J. Kinicki, and Blake E. Ashforth, "Employability: A Psycho-Social Construct, Its Dimensions, and Applications," *Journal of Vocational Behavior* 65, no. 1 (2004): 14–38. <https://doi.org/10.1016/j.jvb.2003.10.005>.

²⁵ Ned Kock, "Common Method Bias in PLS-SEM: A Full Collinearity Assessment Approach," *International Journal of e-Collaboration* 11, no. 4 (2015): 1–10. <https://doi.org/10.4018/ijec.2015100101>.

²⁶ Jörg Henseler, Christian M. Ringle, and Marko Sarstedt, "A New Criterion for Assessing Discriminant Validity in Variance-Based Structural Equation Modeling," *Journal of the Academy of Marketing Science* 43, no. 1 (2015): 115–135. <https://doi.org/10.1007/s11747-014-0403-8>.

suggested for PLS-SEM, indicating that the model has sufficient predictive power for the endogenous constructs.

Table 6. Assessment Results of the Structural Model on Coefficient of Determination (R^2)

Endogenous	β (OS)	SM	SD	t-statistics (O/STDEV)
Self-Efficacy	0.377	0.380	0.044	8.655
Self-Perceived Employability	0.470	0.478	0.037	12.767

Source: Researchers' construct

Effect size (f^2) was assessed to evaluate the magnitude of influence of each exogenous construct on the endogenous variables. Effect sizes were calculated using the recommendations of Cohen, where small, medium and large are at f^2 values of 0.02, 0.15 and 0.35, respectively.²⁷ As presented in Table 7, CDL has a large effect on Self-Efficacy ($f^2 = 0.606$), which indicates that it is a key determinant in enhancing students' confidence in their abilities. On the other hand, CDL has a negligible direct effect on SPE ($f^2 = 0.021$), indicating that its direct contribution to perceptions of employability is marginal. On the other hand, SE had a significant effect on SPE ($f^2 = 0.408$), indicating its significant contribution to the formation of students' employability perceptions. Combined, these results suggest that the effect of CDL on SPE is mainly through SE, rather than a direct pathway, which further strengthens the mediating role of SE in the model.²⁸

Table 7. Assessment Results of Structural Model on Effect Size (f^2)

Relationship	β (OS)	SM	SD	t-statistics (O/STDEV)
Career Development Learning → Self-Efficacy	0.606	0.621	0.116	5.229
Career Development Learning → Self-Perceived Employability	0.021	0.023	0.017	1.207
Self-Efficacy → Self-Perceived Employability	0.408	0.421	0.085	4.822

Source: Researchers' construct

Discussion

3.1 Career Development Learning and Self-Perceived Employability

Career Development Learning (CDL) involves planned learning to improve students' knowledge of careers, their career planning and decision-making skills, and skills related to employability. CDL is based on the CareerEDGE model and includes elements like career planning, work-related learning and reflective practices that allow students to understand possible career pathways and align themselves with labour market expectations.²⁹ By contrast, SPE refers to

²⁷ Jacob Cohen, *Statistical Power Analysis for the Behavioral Sciences*, 2nd ed. (Hillsdale, NJ: Lawrence Erlbaum Associates, 1988).

²⁸ Joseph F. Hair Jr., Jeffrey J. Risher, Marko Sarstedt, and Christian M. Ringle, "When to Use and How to Report the Results of PLS-SEM," *European Business Review* 31, no. 1 (2019): 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>.

²⁹ Lorraine Dacre Pool and Peter John Sewell, "The Key to Employability: Developing a Practical Model of Graduate Employability," *Education + Training* 49, no. 4 (2007): 277–289. <https://doi.org/10.1108/00400910710754435>; Denise Jackson and Ruth Bridgstock, "What Actually Works to Enhance Graduate Employability? The Relative Value of Curricular, Co-curricular, and Extra-curricular Learning and Paid Work," *Higher Education* 81, no. 4 (2021): 723–739. <https://doi.org/10.1007/s10734-020-00570-x>.

perceptions of one's ability to obtain and retain employment, which are influenced by individual skills and external labour market conditions.³⁰ This construct is made up of the dimensions of self-belief, perceptions of the university reputation and the availability of opportunities in the job market. Participation in CDL is expected to improve employability perceptions by increasing students' awareness of their own skills, improving clarity of career aspirations and increasing their sense of employment readiness. Structured career-related learning experiences help students to better understand employer expectations and to reflect on their own competencies too. Empirical evidence has consistently indicated a positive relationship between CDL and employability outcomes.³¹ However, much of the existing research has concentrated mainly on linear approaches, with little regard for the contextual and psychological factors that may influence this relationship. On this basis, the following hypothesis is proposed.

H1: Career Development Learning positively and significantly influences Self-Perceived Employability

3.2 Career Development Learning and Self-Efficacy

Self-efficacy was introduced by Bandura as the belief of an individual in his or her capability to perform tasks and achieve desired outcomes. Drawing on Social Cognitive Theory, self-efficacy is a key mechanism through which learning experiences impact behavioural outcomes. In other words, relevant experiences increase confidence, which then affects performance and decision-making. CDL fosters self-efficacy through mastery experiences, real-world work experience, and feedback mechanisms. Internships, career workshops and reflective learning activities help students to develop confidence in their own capabilities.³² Recent research has shown that career-related learning has a positive impact on students' self-efficacy and confidence in performing career-related tasks.³³ Therefore, the following hypothesis is proposed.

H2: Career Development Learning positively and significantly influences students' Self-Efficacy

3.3 Self-Efficacy and Self-Perceived Employability

Self-efficacy influences important career behaviours such as job-search activities, adaptability and career decision-making, and in turn contributes to employability development.³⁴ Students with higher self-efficacy are more likely to see themselves as employable, as they feel more capable of meeting labour market demands and overcoming career-related challenges. The positive association between self-efficacy and employability is consistently supported by empirical evidence. However,

³⁰ Andrew Rothwell, Ian P. Herbert, and Frances Rothwell, "Self-Perceived Employability: Construction and Initial Validation of a Scale for University Students," *Journal of Vocational Behavior* 73, no. 1 (2008): 1–12. <https://doi.org/10.1016/j.jvb.2007.12.001>.

³¹ Thuy Thi Hai Ho, Van Hong Le, Duong Tuan Nguyen, Chi Thi Phuong Nguyen, and Ha Thi Thu Nguyen, "Effects of Career Development Learning on Students' Perceived Employability: A Longitudinal Study," *Higher Education* 86, no. 2 (2023): 297–315. <https://doi.org/10.1007/s10734-022-00933-6>.

³² Donald Crestofel Lantu, Yulianto Suharto, Ira Fachira, Anggraeni Permatasari, and Grisna Anggadwita, "Experiential Learning Model: Improving Entrepreneurial Values through Internship Program at Start-Ups," *Higher Education, Skills and Work-Based Learning* 12, no. 1 (2022): 107–125. <https://doi.org/10.1108/HESWBL-01-2021-0014>.

³³ Liridona Jemini-Gashi, Dashamir Bëruxulli, Jon Konjufca, and Laura Cakolli, "Effectiveness of Career Guidance Workshops on the Career Self-Efficacy, Outcome Expectations, and Career Goals of Adolescents: An Intervention Study," *International Journal of Adolescence and Youth* 28, no. 1 (2023): Article 2281421. <https://doi.org/10.1080/02673843.2023.2281421>.

³⁴ Xinmeng Yao, Ampapan Tuntinakhongul, and Piyapong Sumettikoon, "Enhancing Undergraduate Employability and Career Adaptability through Career Planning Education: The Mediating Role of Career Decision-Making Self-Efficacy," *Eurasian Journal of Educational Research* 113 (2024): 251–274. <https://doi.org/10.14689/ejer.2024.113.15>.

most of the studies have examined this relationship without considering contextual boundary conditions that may moderate the strength of this relationship. So, the following hypothesis was formulated,

H3: Self-Efficacy positively and significantly influences Self-Perceived Employability

3.4 Mediating Role of Self-Efficacy

CDL improves students' skills and knowledge, which improves their self-efficacy, thereby improving their employability perceptions. This implies that self-efficacy serves as a key psychological mechanism through which learning experiences influence employability outcomes. Both Social Cognitive Theory and the CareerEDGE model highlight the role of self-efficacy as a mechanism through which learning experiences are translated into career outcomes.³⁵ Recent studies confirmed that self-efficacy mediates employability models, meaning that learning experiences impact employability indirectly by increasing confidence.³⁶ Although there is strong evidence for mediation, existing studies are primarily concerned with explaining how employability is developed and largely ignore when or under what conditions these relations are strengthened or weakened. Hence, the mediating hypothesis is formulated as follows.

H4: Self-Efficacy mediates the relationship between Career Development Learning and Self-Perceived Employability

3.5 Role of English Language Proficiency as a Moderator

English Language Proficiency (ELP) is the ability to communicate in professional settings and is increasingly being recognised as a core component of employability, especially in globalised labour markets.³⁷ English is the lingua franca of business communication in multilingual contexts like Malaysia and is often a fundamental consideration when recruiting. Employers consistently identify communication competence as a critical requirement for graduate employability.³⁸ Therefore, ELP is not only a practical skill but a source of competitive advantage in the labour market. Research has shown that good communication and language skills are linked to increased employment opportunities, career advancement and performance at work.³⁹ On the other hand, graduates with little ELP find it difficult to get jobs even if they have relevant academic qualifications. Empirical studies also demonstrate that while both employers and students recognise the importance of ELP, a significant gap exists between the graduates' perceived competence and the employers' expectations, especially in professional communication and the use of language in the workplace.⁴⁰

³⁵ Albert Bandura, *Self-Efficacy: The Exercise of Control* (New York: W. H. Freeman, 1997).

³⁶ Baba Kachalla Wujema, Roziah Mohd Rasdi, Zeinab Zaremohzzabieh, and Seyedali Ahrari, "The Role of Self-Efficacy as a Mediating Variable in the CareerEDGE Employability Model: The Context of Undergraduate Employability in the North-East Region of Nigeria," *Sustainability* 14, no. 8 (2022): Article 4660. <https://doi.org/10.3390/su14084660>.

³⁷ Chiara Succi and Magali Canovi, "Soft Skills to Enhance Graduate Employability," *Studies in Higher Education* 45, no. 9 (2020): 1834–1847. <https://doi.org/10.1080/03075079.2019.1585420>.

³⁸ Nur Iqliah Maksan and Hanna Insyirah Mohd Sukri, "The Importance of English Language Proficiency on Employability in Malaysia among Non-English Major Students," *International Journal of Research and Innovation in Social Science* 9, no. 24 (2025): 770–781. <https://doi.org/10.47772/IJRISS.2025.924IJIID0084>.

³⁹ Denise Jackson, "Re-conceptualising Graduate Employability: The Importance of Pre-Professional Identity," *Higher Education Research & Development* 35, no. 5 (2016): 925–939. <https://doi.org/10.1080/07294360.2016.1139551>.

⁴⁰ Siti Zaidah Binti Zainuddin, Stefanie Pillai, Francisco Perlag Dumanig, and Adriana Phillip, "English Language and Graduate Employability," *Education + Training* 61, no. 1 (2019): 79–93. <https://doi.org/10.1108/ET-06-2017-0089>.

This mismatch suggests that confidence may not be enough to lead to positive employability outcomes if individuals are not able to communicate their competencies in professional settings. In this context, it is not expected that the effect of self-efficacy on employability will be the same for all individuals. An individual's internal sense of confidence and their ELP link to the degree to which their confidence can be transformed into observable and valued performance.⁴¹ This has opened the possibility that students with high self-efficacy and low levels of ELP might be less employable. It is expected that ELP will strengthen the relationship between self-efficacy and employability in this sense by providing individuals with an opportunity to express their confidence and demonstrate their competencies in professional settings.⁴² ELP, however, as an important contextual factor, has received little attention in the existing employability literature. This study fills this gap by introducing ELP as a moderating variable and contributes to a better understanding of employability development in the Asian higher education context.

H5: English Language Proficiency moderates the relationship between Self-Efficacy and Self-Perceived Employability

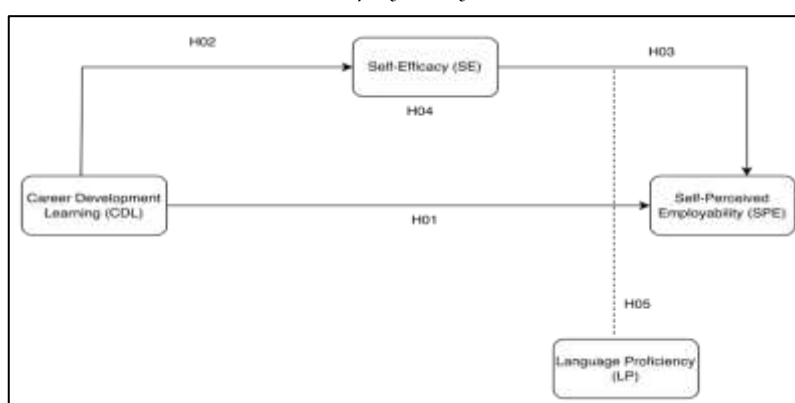


Figure 2. Research Model

Source: Researchers' construct

This study examined CDL and students' SPE mediated by SE and moderated by ELP. Based on HCT and SCCT, the findings suggest that employability is a function of competency development, psychological processes, and context-based factors. These data demonstrate how personal belief and external variables affect Malaysian private higher education students' employability perceptions. These findings suggest ways Malaysian institutions can better educate graduates for increasingly complicated professional situations while supporting their educational progress.

3.6 Career Development Learning and Graduate Employability

The results show that CDL positively and significantly affects SPE, suggesting that structured career-related interventions including career counselling, labour market dynamics, and experiential learning boost students' employability confidence. The HCT views CDL as an investment in career-

⁴¹ Albert Bandura, *Self-Efficacy: The Exercise of Control* (New York: W. H. Freeman, 1997); Denise Jackson, "Re-conceptualising Graduate Employability: The Importance of Pre-Professional Identity," *Higher Education Research & Development* 35, no. 5 (2016): 925–939. <https://doi.org/10.1080/07294360.2016.1139551>.

⁴² Jane Andrews and Helen Higson, "Graduate Employability, 'Soft Skills' Versus 'Hard' Business Knowledge: A European Study," *Higher Education in Europe* 33, no. 4 (2008): 411–422. <https://doi.org/10.1080/03797720802522627>.

related competencies that boost labour market worth.⁴³ These findings support prior research that career development programs promote employability awareness, even if their effects are indirect and mediated by psychological characteristics like self-efficacy and professional confidence.⁴⁴ Malaysian universities educate diverse student populations, including many Muslim students, who are expected to apply their academic knowledge and professional skills to their jobs and communities. The effectiveness of this technique depends on how students internalise these experiences and turn them into career benefits. This supports the idea that educational interventions alone cannot boost employment until students gain confidence in CDL abilities identification, application, and communication. SCCT supports this conclusion by showing that learning experiences shape self-efficacy beliefs and career outcomes.⁴⁵ Students' CDL events provide mastery, real-life, and positive feedback, which are known to boost self-efficacy. Current research shows that planned career interventions and employability training boost students' confidence to handle career transitions and employment obstacles.⁴⁶

3.7 Self-Efficacy as the Psychological Mechanism of Employability Development

Self-efficacy has a big and positive effect on students' SPE, showing that students with more talent confidence saw themselves as employable. This study supports SCCT's claim that job-related task beliefs affect career behaviour, persistence, and success. Self-efficacy helps students recognise, use, and transmit CDL abilities and boosts their employability. This supports previous research that shows stronger self-efficacy improves job adaptability, proactive career activities, and employability perceptions. In Malaysia, where graduates are expected to compete in more dynamic and competitive job markets, self-efficacy appears to be an important psychological resource for career transitions. Self-efficacy mediates the CDL-SPE link, as confirmed by the data. This implies that CDL's impact on employability is mostly due to its ability to enhance students' confidence in applying their skills and knowledge. SCCT supports the idea that learning experiences might indirectly affect professional outcomes through self-efficacy beliefs. The mediation effect suggests that career-related learning improves employability by developing competencies and boosting confidence in their usage, supporting previous empirical data. Partial mediation supports the idea that CDL directly affect employment, but self-efficacy is strongest.

3.8 English Language Proficiency as a Contextual Enabler of Employability

This study identified ELP as a contextual modulator of self-efficacy and SPE, a significant finding. The data suggest that higher ELP students have a greater favourable impact on employment. This implies that confidence alone may not be enough if people cannot communicate their expertise. In multicultural, competitive global labour markets like Malaysia, ELP is a crucial employability skill and

⁴³ Gary S. Becker, *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*, 3rd ed. (Chicago: University of Chicago Press, 2010).

⁴⁴ Thuy Thi Hai Ho, Van Hong Le, Duong Tuan Nguyen, Chi Thi Phuong Nguyen, and Ha Thi Thu Nguyen, "Effects of Career Development Learning on Students' Perceived Employability: A Longitudinal Study," *Higher Education* 86, no. 2 (2023): 297–315. <https://doi.org/10.1007/s10734-022-00933-6>.

⁴⁵ Robert W. Lent and Steven D. Brown, "Social Cognitive Career Theory at 25: Empirical Status of the Interest, Choice, and Performance Models," *Journal of Vocational Behavior* 115 (2019): Article 103316. <https://doi.org/10.1016/j.jvb.2019.06.004>.

⁴⁶ Jos Akkermans, Kristina Paradniké, Beatrice I. J. M. Van der Heijden, and Ans De Vos, "The Best of Both Worlds: The Role of Career Adaptability and Career Competencies in Students' Well-Being and Performance," *Frontiers in Psychology* 9 (2018): Article 1678. <https://doi.org/10.3389/fpsyg.2018.01678>.

often the deciding factor in hiring.⁴⁷ Effective English communication allows many Malaysian Muslim students to confidently present their knowledge and skills in increasingly diverse professional environments, engaging with colleagues and clients from different cultural backgrounds. Language enables internal confidence and external performance, explaining this study's moderating influence. ELP measures how well someone expresses their self-efficacy in job interviews, workplace interactions, and the professional environment. Thus, students with high self-efficacy and poor ELP may struggle to demonstrate their skills, lowering the benefit of self-efficacy on employability.

4. CONCLUSION

CDL directly and indirectly affects graduate employability through self-efficacy, while ELP strengthens the link between self-efficacy and SPE. More importantly, the data show that self-efficacy's effect varies with student ELP level. This emphasises contextual elements in employability development research. The study integrates educational, psychological, and contextual perspectives to explain higher education graduate employability. In multilingual and competitive employment markets, employability is important not only in terms of skills acquisition but also psychological preparation and the ability to communicate competencies. These findings are crucial for Malaysian institutions preparing graduates, including many Muslim students, to navigate increasingly varied professional situations while contributing to society.

By integrating higher education employability development, this study advances employability theory. HCT suggests that CDL advantages go beyond skill acquisition since psychological resources like self-efficacy influence its effect.⁴⁸ In other words, education investments work best when internalised through methods that create confidence to help pupils apply what they have learned. The findings support SCCT's empirical applicability, particularly self-efficacy's mediation of learning experiences and employability outcomes.⁴⁹ By showing that self-efficacy does not apply in all settings, this research expands SCCT's theoretical boundaries. The fact that ELP moderates the confidence-employability link suggests that contextual elements are crucial to professional decisions. The linear and mediating explanations offered in the study add to employability literature. The tested moderated mediation model adds to employability literature by explaining if these interactions exist and how and when they develop or decline.⁵⁰

This study has several consequences for higher education, policy, and career practitioners. In particular, universities must better incorporate CDL into academic curricula to expose students to employability-related skills and help them build the confidence to use them in real life.⁵¹ The results also show that language abilities, particularly ELP, greatly affect employability. As moderators,

⁴⁷ Muhammad Aizat Azhari and Onaliza Satimin, "Evaluating English Language Education for Career Readiness in Intercultural Communication: Employer Insights and Recommendations," *International Journal of Research and Innovation in Social Science* 8, no. 10 (2024): 2923–2934. <https://doi.org/10.47772/IJRIS.2024.8100245>.

⁴⁸ Gary S. Becker, *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*, 3rd ed. (Chicago: University of Chicago Press, 2010).

⁴⁹ Robert W. Lent and Steven D. Brown, "Social Cognitive Career Theory at 25: Empirical Status of the Interest, Choice, and Performance Models," *Journal of Vocational Behavior* 115 (2019): Article 103316. <https://doi.org/10.1016/j.jvb.2019.06.004>.

⁵⁰ Joseph F. Hair Jr., Jeffrey J. Risher, Marko Sarstedt, and Christian M. Ringle, "When to Use and How to Report the Results of PLS-SEM," *European Business Review* 31, no. 1 (2019): 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>; Kristopher J. Preacher, Derek D. Rucker, and Andrew F. Hayes, "Addressing Moderated Mediation Hypotheses: Theory, Methods, and Prescriptions," *Multivariate Behavioral Research* 42, no. 1 (2007): 185–227. <https://doi.org/10.1080/00273170701341316>.

⁵¹ Denise Jackson, "Employability Skill Development in Work-Integrated Learning: Barriers and Best Practice," *Studies in Higher Education* 40, no. 2 (2015): 350–367. <https://doi.org/10.1080/03075079.2013.842221>.

institutions should focus on enhancing students' communication abilities as part of employment programs. This may involve adding communication-related content to curricula, offering targeted language support, and giving students industry-relevant communication practices.⁵² Career services may also consider combining skills development with confidence-building initiatives. Mentoring, experiential learning, and reflection can boost self-efficacy and prepare students for career obstacles. These programs address competence and confidence to help students translate their skills into employability. These initiatives may help diverse Malaysian students, including many Muslim students, develop the confidence, communication skills, and professional competencies needed to succeed in multicultural workplaces.

This study has major consequences for Asian higher education policy, where graduate employability is a major problem. Higher education in Malaysia serves students from diverse cultural and religious backgrounds, including a large Muslim student population. Employability policies should continue to promote graduate development that combines professional competence with effective communication, confidence, and responsible social participation. The findings underline the importance of integrating CDL into higher education policies rather than as an optional or add-on activity. Career development activities like internships, industry involvement, and career-focused modules can help students build relevant skills and gain confidence in applying them in real life. This supports work-readiness policies and higher education's congruence with labour market needs. The findings also suggest that policy should focus more on communication skills, particularly ELP, which are essential in many Asian employment markets. Clearer ELP benchmarks and policy support for discipline-specific communication training are needed to meet employer expectations. In addition to technical and communication skills, employability strategies should consider psychological aspects, notably self-efficacy, in graduate outcomes. Mentorship, experiential learning, and reflective practice policies can boost student confidence and prepare them for career changes. These findings show that effective employability policies should incorporate skills development, psychological empowerment, and communication competence to prepare graduates for competitive employment markets.

While this study provides some useful insights into graduate employability, there are a few limitations to take note of. One limitation is the use of a cross-sectional research design, which captures relationships at one point in time and thus limits the ability to draw causal inferences.⁵³ Future research could employ longitudinal designs to explore the development of perceptions of employability as students transition into the workforce. Another issue is related to the scope of the sample, which is confined to private higher education institutions in Malaysia. This context is highly relevant to the study, but it may also limit the generalizability of the findings to other educational systems or geographical settings. Future research could be expanded to include cross-country comparisons or comparisons between types of institutions, giving a broader understanding of employability development.⁵⁴ Further, ELP was captured in this study with a single-item measure. While this is acceptable for categorical constructs in PLS-SEM, it may not capture the multidimensional nature of language competence. Future studies could consider more comprehensive measurement approaches

⁵² Chiara Succi and Magali Canovi, "Soft Skills to Enhance Graduate Employability," *Studies in Higher Education* 45, no. 9 (2020):

1834–1847. <https://doi.org/10.1080/03075079.2019.1585420>.

⁵³ John W. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 4th ed. (Thousand Oaks, CA: SAGE Publications, 2014).

⁵⁴ Bryman, Alan. *Social Research Methods*. 5th ed. (Oxford: Oxford University Press, 2016).

that better capture the different aspects of communication ability.⁵⁵ Lastly, there is an opportunity to explore other moderating variables that may further influence employability outcomes. Digital competencies, socio-economic background or access to professional networks may provide a better understanding of the broader dynamics influencing graduate employability. The consideration of these aspects would offer insight into the complex educational, psychological and contextual processes which contribute to graduate employment.

The authors affirmed that there is no conflict of interest in this article. Author 1 contributed to conceptualisation, methodology, data curation, formal analysis, and writing the original draft of the article. Author 2 was involved in conceptualisation, supervision, and review of the full article. Author 3 was involved in proofreading, reviewing, editing and contributed to the interpretation of results. AI tools were used in their standard automated modes for grammar correction, clarity, and accuracy enhancement. Accordingly, no structured or content-generating prompts were employed. Grammarly AI was used to assist in improving grammar and language quality. The authors further declare that AI tools were not used to generate the research data, conduct the bibliometric analysis, or produce the scientific results presented in this manuscript. The authors take full responsibility for the integrity, accuracy, and originality of the work.

Ethical approval for this study was obtained from the Universiti Malaya Research Ethics Committee (UMREC) before the data collection. Before completing the online questionnaire, participants were provided with an information sheet outlining the purpose of the study, the voluntary nature of their participation, and assurances regarding the anonymity and confidentiality of their responses. Informed consent was obtained electronically before respondents proceeded with the questionnaire. No personally identifiable information, including names, student identification numbers, telephone numbers, or email addresses, was collected, and all data were used solely for academic research purposes. Participants were also informed that they could withdraw from the study at any time before submitting their responses. The authors received no financial support for the research, authorship, and/or publication of this article.

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⁵⁵ Joseph F. Hair Jr., Jeffrey J. Risher, Marko Sarstedt, and Christian M. Ringle, "When to Use and How to Report the Results of PLS-SEM," *European Business Review* 31, no. 1 (2019): 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>.

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