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Impact of Educational and Cultural Differences on Employability Skill Development among Bangladeshi Students in Malaysia

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Abstract

The growing mobility of international students has revealed the challenges they face in adapting to different educational environments and in preparing for employment in host countries. This paper explores the impact of education and cultural adaptation on the development and signaling of employability skills among Bangladeshi students in Malaysian higher educational institutions. The method used was quantitative and data were collected through an online questionnaire from 152 Bangladeshi students studying in Malaysian universities. Descriptive statistics, Pearson correlation and multiple regression analysis were used to analyze the data with IBM SPSS Statistics. affect the development of employability skills. The strongest factor was cultural adaptation which means that students who can adapt well to multicultural learning environments have better communication, teamwork and problem-solving skills. The results also point to the fact that educational differences imply higher signaling problems when students attempt to signal their competencies to potential employers. Interestingly, stronger employability skills and higher cultural adaptation did not reduce signaling challenges as expected. Alternatively, students with higher levels of adaptation and skills development reported greater awareness of challenges associated with communicating and demonstrating their competencies in employment-related contexts. The findings suggest that both educational differences and cultural adjustment positively The study finds that employability skills acquisition may not be sufficient for international graduates to fill the labor market information gaps. The findings provide practical insights for universities, employers and policy makers interested in ways to improve supports mechanisms for international students and improve graduate employability outcomes.

Keywords: Employability Skills, Signalling Challenge, Cultural Adaptation, Educational Difference, Critical Awareness Effect.

Introduction

Malaysia has been rapidly internationalized in higher education and it is now one of the top regional education centres in the Southeast (SEA) region (EMGS, 2025). Malaysia has a vibrant network of the private Higher Education Institutions (HEIs) that provide English-speaking courses with industry interest and facilitate the enrollment of various international student groups (Lashari et al., 2023). Of this group, Bangladeshi students are one of the most stable and increasing international student population at Malaysian tertiary campuses (Zaman et al., 2024). As for these learners, cross-border mobility involves a two-layered transition process, one in the classroom where they learn about new pedagogies and another in the host society where they need to make the transition to integration into the host culture (Gu et al., 2010; Rohman et al., 2025).

Soft skills and transferable skills like cross-cultural communication, problem-solving, digital literacy, collaborative teamwork and professional ethics play a vital role in today's globalized job market (Jackson, 2024; Mohamad et al., 2025). While student-centered learning (SCL) is a principle strongly promoted in the learning methods of HEIs in Malaysia, learning approaches in Bangladesh are perceived as more teacher-centred and more examination oriented and more content oriented compared to the student-centred learning approach undertaken by many HEIs in Malaysia (Ahmmed, 2025; Sultana, 2026). This pedagogical shift leads to pedagogical friction and therefore has an impact on the acquisition, internalisation and demonstration of employability skills by Bangladeshi international students (Chowdhury, 2024; Rienties et al., 2012).

In addition to classroom issues, socio-cultural adaptation also has a catalytic and active influence on graduate professional readiness (Berry, 2005; Ward & Kennedy, 1999). These variations in communication styles (direct or indirect), attitude towards authority, and norms for cross-cultural teamwork are all known to have a significant impact on the interaction of international learners in academic and workplace contexts (Nadeem et al., 2022; Xiaohan, 2025). Important for these graduates is that they are confronted with “signalling challenges” in the labor market as they move closer to labour market entry (Spence, 1973; Anderson & Tomlinson, 2021). Host recruitment markets are often characterised by information asymmetry which can result in a failure to decode the competencies of a graduate in accordance with the competencies required for a particular job, due to the lack of awareness of the employer about the competency being attained by the foreign educational system, and the disparity between the competency achieved and the competency required for the job (Syed, 2008; Tomlinson & Anderson, 2021).

While there is a growing volume of academic literature on international student mobility and studies on employability skill development of students globally, there has been little empirical work to link the direct impacts of education difference and cultural adaptation on both internal employability skill development and external signalling challenges (Hosain et al., 2023; Nyland et al., 2009). Moreover, despite the significant increase in the number of Bangladeshi students studying in Malaysian HEIs, empirical works that investigate a combined effect of educational differences and cultural adaptation on the development of employability skills and signalling problems are still scarce. In addition, empirical research relating to this specific structural framework in Bangladeshi international students at Malaysian HEIs is still scanty, hence this study investigates these relationships to support higher education

practices, corporate recruitment strategies and educational policies according to the United Nations Sustainable Development Goals SDG 4 (Quality Education), SDG 8 (Decent Work and Economic Growth) and SDG 10 (Reduced Inequalities).

Research Objectives

This study aims to:

- **RO1:** Examine the effect of Educational Differences on Employability Skill Development among Bangladeshi students in Malaysian HEIs.
- **RO2:** Examine the effect of Cultural Adaptation on Employability Skill Development among Bangladeshi students in Malaysian HEIs.
- **RO3:** Examine the effect of Educational Differences on Signalling Challenges faced by Bangladeshi students in the host labor market.
- **RO4:** Examine the effect of Cultural Adaptation on perceived Signalling Challenges during professional transitions.
- **RO5:** Examine the effect of Employability Skill Development on perceived Signalling Challenges among Bangladeshi graduates.

Research Questions

This study seeks to answer the following research questions:

- **RQ1:** What is the effect of Educational Differences on Employability Skill Development among Bangladeshi students in Malaysian HEIs?
- **RQ2:** What is the effect of Cultural Adaptation on Employability Skill Development among Bangladeshi students in Malaysian HEIs?
- **RQ3:** What is the effect of Educational Differences on Signalling Challenges faced by Bangladeshi students in the host labor market?
- **RQ4:** What is the effect of Cultural Adaptation on perceived Signalling Challenges during professional transitions?
- **RQ5:** What is the effect of Employability Skill Development on perceived Signalling Challenges among Bangladeshi graduates?

Literature Review

The Literature Review provides the conceptual and empirical basis for the examination of the difference between educational backgrounds and the challenges of host-market signalling when evaluating the employability skill development and host-market signalling challenges of Bangladeshi international students in Malaysian Higher Education Institutions (HEIs).

Theoretical Underpinnings

This research combines three complementary theories: Human Capital Theory (Becker, 1964), Job Market Signalling Theory (Spence, 1973) and Cross-Cultural Adjustment Theory (Black et al., 1991; Ward & Kennedy, 1999) to provide an explanation for internal competency acquisition as well as external labour market screening dynamics.

Human Capital Theory

In accordance with Human Capital Theory, the individual's investment in education, specialized training and experiential learning directly improves cognitive skills, knowledge and economic productivity (Becker, 1964). In tertiary education, students have the opportunity to develop technical skills and transferable soft skills like critical thinking, problem-solving,

digital literacy, and adaptable teamwork (Jackson, 2024; Mohamad et al., 2025) by adjusting to a well-resourced learning setting. The core element of gaining human capital relevant to today's requirements in the workplace is through active engagement in student-centered learning (SCL) among international students (Tang, 2023). In the context of human capital orthodoxy, however, the market is assumed to be a purely meritocratic one, which generally does not apply to international migration where structural market entry barriers exist (Brown et al., 2011).

Spence's Job Market Signalling Theory

The Job Market Signalling Theory by Spence (1973) deals with cases of extreme information asymmetry between employers and job applicants. Employers can only see outward signs of capability, such as university degrees, institutional rankings, standardized test scores, etc., rather than someone's actual productivity, so they use these signals as proxies for capability (Spence, 1973). Foreign credentials from the pre-university stage (i.e. a student's bachelor's, master's or PhD) can create greater "signalling noise" for international graduates in the host labor market, as employers are unable to accurately decode, benchmark, or trust foreign qualifications, which leads to increased friction when screening for potential hires (Anderson & Tomlinson, 2021; Tomlinson & Anderson, 2021).

Cross-Cultural Adjustment Theory

Cross-Cultural Adjustment Theory (Black et al., 1991; Ward & Kennedy, 1999) provides an explanation of so journey's adjustment in the academic, interactional and socio-cultural domains in an international or host environment. Successful cross-cultural adjustment helps students deal with power differences, cultivate cross-cultural relationship, and internalize the professional norms of the host country, in turn improving their academic learning and interview skills (Berry, 2005; Gu et al., 2010). Specific adjustment to behaviors in these changes as discussed in Hofstede (2011) on the nuances of communication in a contextually different culture, only adds to the list of behaviors that need to be adapted. When these three models are integrated together, there is a tri-theoretical framework that connects internal human capital formation, socio-cultural adjustment and external mechanism of decoding the market.

Educational Differences and Employability Skill Development

The transition vector of difference between the secondary education system of South Asia and higher education in Malaysia is of critical significance. In Bangladesh, secondary education is traditionally teacher-centred, exams are high-staked, summative tests and learning is based on rote learning (Ahmmed 2025; Sultana 2026). On the other hand, Malaysian HEIs have been using the student-centred learning (SCL) approach extensively, which includes interactive team projects, continuous formative assessment, capstone research, and industry-oriented assignments (Tang, 2023; Hallinger & Lu, 2013).

The nature of this developmental process is the starting point of a fundamental debate in Scholarship that has been sparked by pedagogical friction (Kwan & Tam, 2016). A body of literature holds that pedagogical differences are catalysts for development. For learners who come from an exam-driven context, the mismatch between what they know and what they experience in SCL environments is a force that drives them to create self-directed learning strategies, problem-solving skills, and analytical thinking (Kolb, 1984; Rienties et al., 2012). On

the other hand, alternative research suggests that when transitions are severe, they cause intense academic stress and cognitive overload, resulting in passive learning experiences instead of active learning (Lashari et al., 2023).

Based on Human Capital Theory (Becker 1964), interactive SCL environments are the experiential platform to develop transferable human capital and workplace competencies (Jackson 2024). Based on empirical evidence, it has been shown that active learning-centered teaching strategies can increase the participation, critical thinking, and analysis skills of students in higher education programs to a great extent, which is more effective than the passive teaching method of lecturing (Hallinger & Lu, 2013; Tang, 2023). Cross border learning research also reveals that students learning internationally acquire adaptive learning strategies and complex problem solving skills to satisfy the continuous need for formative assessment (Gu et al., 2010; Rienties et al., 2012). Adjustment to the curriculum rigidities of home countries and gaps in learning through exams is significantly related to increased self-efficacy and market-oriented skill development for South Asian graduates (Chowdhury, 2024; Sultana, 2026). But literature tends to focus on pedagogical shifts in domestic cohorts and/or Western universities, with a lack of literature on how South Asian international students turn pedagogical tensions into viable human capital in Southeast Asian educational hotspots. It is important to investigate this relationship to understand if instructional contrast is a growth stimulus or developmental barrier.

- Research Gap: There is meager evidence in the existing literature to see cross-border pedagogical mismatch between teacher-centered South Asian backgrounds and host-country SCL models as a facilitative or constraining force in internal employability skill acquisition.
- H1: Educational differences have a significant effect on employability skill development among Bangladeshi students in Malaysian HEIs.

Cultural Adaptation and Skill Acquisition

The literature from cross cultures, also stresses that technical knowledge alone does not mean that career readiness is automatically in place, it is the role of socio-cultural adaptation to ensure functional skill acquisition (Berry, 2005; Mohamad et al., 2025). International students that actively adapt to host multicultural environments overcome language barriers and adjust to other team members and their communication styles (direct vs indirect) (Nadeem et al., 2022; Xiaohan, 2025).

There is a general consensus in the literature that socio-cultural integration is a multidimensional process involving academic, psychological and social integration (Ward & Kennedy, 1999). But there is empirical disagreement about what is the main source of skill acquisition in cross-border education. Based on the classical acculturation models, academic competency should be preceded by socio-cultural adaptation, which is to say that social integration contributes to the development of emotional intelligence, negotiation skills, and cross-cultural leadership (Gu et al., 2010; Rohman et al., 2025). Other researchers, however, propose that academic performance can be achieved without being immersed in the socio-cultural environment, since technical mastery could be sufficient to achieve learning goals, and that the socio-cultural environment is a desired outcome of academic performance rather than one of its main drivers (Rienties et al., 2012).

The concept of overcoming cultural distance is supported by Cross-Cultural Adjustment theory (Black et al., 1991; Ward & Kennedy, 1999) which states that sojourners are able to engage more fully across interactional, academic and professional areas by overcoming cultural distance, which directly supports acquisition of behavioral skills. Empirical studies have found that international students' competence in intercultural communication and socio-cultural adjustment positively influence the collaborative group performance, negotiation and interpersonal communication skills (Nadeem et al., 2022; Rohman et al., 2025). Through cross cultural interaction, students can overcome their anxiety and face the different team structures and they can learn soft skills that are much in demand with current employers (Lashari et al, 2023; Xiaohan, 2025). However, there is a contextual gap as to how socio-cultural adaptation works for students from a South Asian background at multicultural Malaysian HEIs with specific socio-cultural distances. The test of this link is essential to separate the contribution of social integration to holistic skill formation of the graduates.

- Research Gap: Empirical evidence regarding the extent to which socio-cultural integration drives transferable workplace skill acquisition among South Asian international students remains limited.
- H2: Cultural adaptation significantly and positively influences employability skill development among Bangladeshi students in Malaysian HEIs.

Educational Differences and Signalling Challenges

Local host employers tend to have higher levels of information asymmetry when they assess foreign workers with different educational qualifications than they are used to (Spence, 1973; Syed, 2008). Employers' misunderstanding of South Asian grading systems, high school courses, and pre-university recognition systems often result in undervaluing foreign qualifications or misinterpreting university transcripts (Hosain et al., 2023; Sultana, 2026).

The literature shows that there is a tension between the traditional assumptions in signalling and the actual institutional gatekeeping. Classical Job Market Signalling Theory postulates that the academic qualification is the unambiguous signal of the underlying productivity (Spence 1973). But, according to critical employment scholars, signals are not trans-national (Brown et al., 2011; Tomlinson & Anderson, 2021). Although institutional literature indicates that degree qualifications from other countries should facilitate the process of entry into markets, empirical labour market researchers report that host employers apply a “foreign qualification discount” to degrees that are not known from many countries, which translates into increased screening friction and perceived risk (Nyland et al., 2009; Syed, 2008).

When the educational background of workers is very different from the norm in the local labour market, the decoding costs the employer, leading to “signalling noise”, according to the Job Market Signalling Theory of Spence (1973). Research findings suggest that international students are disadvantaged by employers' lack of understanding of secondary school qualifications across other countries (Anderson & Tomlinson, 2021; Hosain et al., 2023). But no previous research has measured the direct effect of pre-tertiary inequalities on the perceived difficulty of entering the labour market in host recruitment channels. This relationship is important to understand graduate recruitment noise.

- Research Gap: Prior graduate employability studies rarely examine how pre-tertiary educational background disparities directly contribute to credential decoding friction and employer uncertainty in host recruitment markets.
- H3: Educational differences significantly increase perceived signalling challenges faced by Bangladeshi students in the host labor market.

Cultural Adaptation and Signalling Challenges

Socio-cultural adaptation is understood as a linkage process that could bridge the decoding gap between employer and candidate during the screening process in the recruitment (Ward & Kennedy, 1999; Anderson & Tomlinson, 2021). International graduates who are culturally adapted are familiar with local contexts, know how to behave in the workplace, and are adept at communicating professionally when applying for jobs (Nadeem et al., 2022).

The issue of whether or not individual cultural assimilation can defeat structural market gatekeeping is a major debate. The literature on acculturation claims that the acculturation continuum is linear and that more advanced acculturation levels lower the uncertainty employers have in the job market and the barriers they set for screening candidates, as more advanced acculturation levels reduce the cross-cultural behavioral noise (Berry, 2005; Rohman et al., 2025). Positional and relational employability theories, on the other hand, suggest that individual adaptation is not enough to overcome institutional protectionism, legal conditions for visas, foreign hiring quotas or in-group bias on the part of employers (Holmes, 2013; Syed, 2008). This poses a theoretical paradox of individual adaptation as a barrier-reducer versus structural barriers independent of student assimilation.

Behavioral matching professional norms of the host society serves as secondary signals that decrease risk associated with evaluating candidates in an interview process (Tomlinson & Anderson, 2021) based on the combination of Cross-Cultural Adjustment Theory (Black et al., 1991) and the Signalling Theory (Spence, 1973). Empirical research has demonstrated that it is positively related to interview performance and rapport-building (Nadeem et al., 2022). There is, however, an empirical void in understanding whether cultural adaptation actually decreases the perceived existence of signalling barriers or shifts in perception of labour market gatekeeping during transition. This path should be evaluated to gain important insights into the boundary conditions of cross-cultural adaptation.

- Research Gap: Empirical literature lacks consensus on whether individual socio-cultural adaptation successfully dismantles host-market signalling barriers or whether structural labor market gatekeeping persists regardless of assimilation.
- H4: Cultural adaptation significantly reduces perceived signalling challenges during host market entry.

Employability Skill Development and Signalling Challenges

Drawing on Human Capital and Signalling theories, the act of acquiring new skills within the business, expressed in the form of verifiable project portfolios, leadership opportunities and technical certifications, is a high-value secondary signal to prospective employers (Becker, 1964; Spence, 1973; Anderson & Tomlinson, 2021).

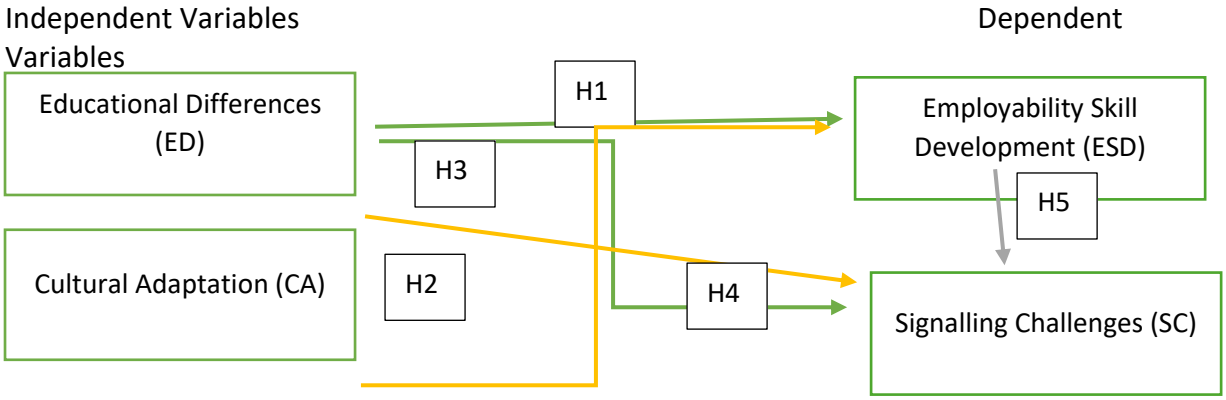
Scholarship involves a basic conflict between meritocratic Human Capital Theory and critical Positional Employability perspectives. Human capital models claim that the ability to accumulate competency (but not credential) directly counteracts credential uncertainty, giving evidence of competency that diminishes the apparent recruitment friction (Mohamad et al., 2025; Jackson, 2024). There are, however, alternative theories that suggest that skill possession is secondary to market position (Positional Perspective, Holmes, 2013; Global Auction Theory, Brown et al., 2011). They believe that under any conditions of highly developed human capital, institutional credential discounting and local recruitment bias will continue to exist and generate what they call an "employability paradox" – high human capital accumulation but long-lasting institutional disadvantage (Syed, 2008).

High-performing applicants use the secondary skill signals embedded in their resumes to distinguish themselves and to lower the information asymmetricities of the job market (Tomlinson & Anderson, 2021) in line with the concepts of Human Capital Theory (Becker 1964) and the Signalling Theory (Spence 1973). Research studies have shown that in reality, students who have practical portfolios and exhibited soft skills are more employable for their future. (Jackson, 2024). However, empirical studies on internal human capital formation in tandem with the external credential decoding friction between foreign graduates is still very limited. Investigating H5 is essential to establish if internal skill development can be used as an effective barrier reduction mechanism within host recruitment channels.

- Research Gap: Existing research lacks integrated frameworks that empirically test whether internal skill acquisition directly reduces external credential signalling challenges for foreign graduates during labor market entry.
- H5: Employability skill development significantly reduces perceived signalling challenges among Bangladeshi graduates in the host labor market.

Some scholars argue that greater labour market participation and exposure may increase awareness of structural employment barriers faced by international graduates rather than eliminating them (Holmes, 2013; Syed, 2008)

Conceptual Framework



Identification of the Research Gap

Although the general literature includes topics of international student mobility, cross-cultural adaptation, and graduate employability (Berry, 2005; Gu et al., 2010; Jackson, 2024), there are three important gaps in the research literature:

1. Lack of Integrated Dual-Focus Frameworks: Prior research focuses mostly on either internal skill development (human capital) (Becker, 1964) or on external job market entry (signalling) (Spence, 1973; Tomlinson & Anderson, 2021). Empirical models do not typically test the interplay of the educational transition and cultural adaptation processes, starting from the same approach and targeting the acquisition of internal competencies and the signalling problems in the host market together in a single model.

2. Contextual Void in Malaysian HEIs: Although Bangladeshi students are one of the largest and most stable international student populations in private HEIs in Malaysia (EMGS, 2025; Zaman et al., 2024), there is very little empirical research specifically addressing their pedagogical transitions, skill acquisition pathways and host-market signalling barriers in these institutions (Chowdhury, 2024; Sultana, 2026).

3. Understudied Interplay Between Adaptation and Credential Decoding: There has been limited empirical research to determine whether non-academic capacities (socio-cultural adaptation and soft skills development) can actively reduce degree-decoding disadvantages and foreign credential discounting in host recruitment markets (Anderson & Tomlinson, 2021; Syed, 2008).

This study fills the specific theoretical, contextual and empirical gaps and contributes to the area of international higher education management, cross-cultural recruitment literature and human resource development strategies under the UN SDG 4 (Quality Education), SDG 8 (Decent Work and Economic Growth) and SDG 10 (Reduced Inequalities).

Methodology

This study uses a positivist research philosophy, deductive approach and cross-sectional quantitative research design to explore the effect of educational and cultural gap on the development of employability skills and labor market signaling problems of Bangladeshi international students studying in the Malaysian Higher Education Institutions (HEIs) (Saunders et al., 2015; Sekaran & Bougie, 2016). The study uses Saunder's (2000) Research Onion as a model to evaluate the impact of academic transition and socio-cultural adaptation on graduate labour market outcomes, as informed by Becker's (1964) Human Capital Theory, Spence's (1973) Job Market Signalling Theory, and Cross-Cultural Adjustment Theory (Black et al., 1991; Ward & Kennedy, 1999), while contextualizing cross-cultural dimensions through the lens of Hofstede (2011).

Overall Design, Target Population, Sampling, and Sample Size

The target population were Bangladeshi international students studying or just graduated (1 year or less) from private higher education institutions in urban areas of Kuala Lumpur and Klang Valley (EMGS, 2025). Primary data collection was conducted using non-probability sampling approach by convenience sampling (from peer groups among the university students and peer groups among student societies) and snowball sampling (across the regional campuses (Sekaran & Bougie, 2016). The minimum sample size was determined for a linear multiple regression model with up to three predictors, medium effect size ($f^2 = 0.15$), significance level alpha, $\alpha = 0.05$ and a statistical power $1 - \beta = 0.95$ using G*Power 3.1.9.7

software (Faul et al., 2007; Cohen, 1988) to be N = 119. Only Bangladeshi nationals who had studied at least one physical semester in Malaysia were eligible non-Bangladeshi nationals and fully online distance learners were not eligible.

Instrumentation

The primary data were gathered by taking the help of a self-administered online questionnaire displayed on Google Forms. The variables of this study (Educational Differences, (5 items, adapted from Tang, 2023; Hallinger & Lu, 2013) and Cultural Adaptation (5 items, adapted from Rohman et al., 2025; Nadeem et al., 2022) were measured in Section B. The dependent variables were measured in Section C: Employability Skill Development (6 items adapted from Jackson, 2024; Mohamad et al., 2025) and Signalling Challenges (5 items adapted from Anderson & Tomlinson, 2021). Each of the item constructs was itemized on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree).

Data Collection and Data Analysis

Eligible participants were sent electronically an electronic copy of a self-administered questionnaire. All the collected data were coded and analyzed with IBM SPSS Statistics Version 31. The following were used as preliminary screening to establish that the data are not skewness and kurtosis (± 2.0) and to delete unengaged responses. All constructs showed internal consistency (Cronbach's $\alpha > 0.70$) of measurement scale. Pearson's correlation was used for bivariate associations and three direct effect models were used to structure the five structural path hypotheses (H1-H5), for empirical testing. All diagnostic tests included Variance Inflation Factor (VIF < 5.0) and Tolerance (> 0.20) as well as unengaged response screening and full-collinearity tests to detect common method bias.

Results

Demographic Information of Respondents

A total of 152 valid responses were retained and analyzed following data screening. Female respondents constituted the majority of the sample at 52.0% (n = 79), male respondents accounted for 22.4% (n = 34) and 25.7% (n = 39) selected “Prefer not to say”. In terms of age, 51.3% (n = 78) were aged 23–26 years, 43.4% (n = 66) were aged 18–22 years and 5.3% (n = 8) were aged 27 years and above, representing a predominantly university-aged cohort (94.7% aged 18–26).

Regarding academic qualification level, undergraduate (Bachelor’s Degree) students comprised 42.1% (n = 64) and postgraduate (Master’s Degree) students comprised 39.5% (n = 60) of the sample, with the remaining respondents distributed across Diploma (7.9%, n = 12), Doctorate/PhD (5.3%, n = 8), recent alumni within 1 year (3.3%, n = 5), and Foundation/Pre-University studies (2.0%, n = 3). Academic fields were concentrated heavily in STEM disciplines (70.4% combined), led by Computing, Technology, and AI (39.5%, n = 60) and Engineering (30.9%, n = 47), followed by Business, Accounting, and Finance (14.5%, n = 22), Social Sciences / Humanities (14.5%, n = 22), and Others (0.7%, n = 1). Lastly, 46.1% (n = 70) of respondents had resided in Malaysia for 1–3 years, 41.4% (n = 63) for less than 1 year, and 12.5% (n = 19) for more than 3 years.

Reliability and Descriptive Statistics

Cronbach's alpha (α) was used to measure the reliability of the scales and internal consistency. Construct scales all achieved the criterion of α = 0.70, which denotes acceptable to good internal reliability. In Table 1, descriptive central tendency statistics (Mean and standard deviation) were obtained on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) as well as normality indices.

Table 1

Descriptive Statistics, Normality, and Scale Reliability (N = 152)

Construct	Mean (M)	Std. Deviation (SD)	Skewness	Kurtosis	Cronbach's Alpha (α)	Reliability Level
Educational Differences (ED)	3.99	0.74	-1.062	0.109	.702	Acceptable
Cultural Adaptation (CA)	3.97	0.76	-0.949	-0.468	.730	Acceptable
Employability Skill Development (ESD)	3.91	0.75	-1.181	0.191	.799	Good
Signalling Challenges (SC)	3.94	0.81	-1.073	0.050	.787	Acceptable / Good

Note: All skewness and kurtosis indices fall within the acceptable univariate normality threshold of ± 2.0.

Convergent and Discriminant Validity (Bivariate Correlations)

All composite measures were found to be univariate normally distributed thus justifying the use of parametric testing. All variables were analyzed using bivariate Pearson correlation analysis (r) to determine the strength, direction, and significance of the relationship between each pair of variables ($p < .001$ for all pairs).

Table 2
Bivariate Pearson Correlation Matrix (N = 152)

Construct	ED_Mean	CA_Mean	ESD_Mean	SC_Mean
ED_Mean	1	.856	.756	.808
CA_Mean	.856	1	.821	.762
ESD_Mean	.756	.821	1	.696
SC_Mean	.808	.762	.696	1

Correlation is significant at the 0.01 level (2-tailed).

Multicollinearity Diagnostics
Multicollinearity diagnostic tests were assessed for structural regression models because there is a strong correlation between independent variables (r = .856). Independent Variables had a Tolerance value of 0.267 and 3.745 for Variance Inflation Factor (VIF). As a result, all the VIF values are kept below the conservative threshold of 5.0 (and 10.0) and there is no concern about that multicollinearity affecting the stability of the parameters or the estimation of the model.

Regression Models and Path Coefficients
Hypothesis testing was executed across three linear regression models in IBM SPSS Statistics Version 31.

- **Model 1 (H1 & H2):** ESD is predicted by the Educational Differences (ED) and Cultural Adaptation (CA). The overall model was statistically significant ($F(2, 149) = 161.630$, $p < .001$), accounting for 68.4% of the variance in skill development ($R^2 = .684$, Adjusted $R^2 = .680$). Educational Differences ($\beta = .201$, $t = 2.260$, $p = .025$) and Cultural Adaptation ($\beta = .648$, $t = 7.283$, $p < .001$) both exerted significant positive direct effects on ESD, supporting H1 and H2.
- **Model 2 (H3 & H4):** Forecasts Signalling Challenges (SC) in terms of Educational Differences (ED) and Cultural Adaptation (CA). The model was statistically significant ($F(2, 149) = 152.431$, $p < .001$), explaining 67.2% of the variance in signalling hurdles ($R^2 = .672$, Adjusted $R^2 = .667$). Educational Differences significantly influenced Signalling Challenges ($\beta = .583$, $t = 6.421$, $p < .001$) in favor of H3. Cultural Adaptation, however, had a positive coefficient ($\beta = .263$, $t = 2.893$, $p = .004$) not the hypothesized reduction (negative relationship) and thus H4 was Not Supported because of a directional inversion.
- **Model 3 (H5):** Assesses the direct effect of Employability Skill Development (ESD) on Signalling Challenges (SC). The model was statistically significant ($F(1, 150) = 141.021$, $p < .001$), with skill acquisition accounting for 48.5% of variance in signalling challenges ($R^2 = .485$, Adjusted $R^2 = .481$). The relationship was strongly positive ($\beta = .696$, $t = 11.875$, $p <$

.001). ESD did not decrease the challenges of the signalling, so it was Not Supported because of directional inversion (H5).

Discussion

This study examined the relationships between Educational Differences, Cultural Adaptation, Employability Skill Development, and Signalling Challenges among Bangladeshi international students studying in Malaysian Higher Education Institutions (HEIs). H1 and H2 were supported by the regression model, which explained 68.4% of the variance in Employability Skill Development ($R^2 = .684$, $p < .001$). Educational Differences also significantly predicted Signalling Challenges ($R^2 = .672$, $p < .001$), supporting H3. The results indicate that the learning experiences and adaptation in multicultural settings have a positive relationship with the development of transferable employability skills such as critical thinking, communication, teamwork, and problem solving.

This result indicated that Cultural Adaptation had the highest impact on the development of Employability Skill ($\beta = .648$, $p < .001$) which highlights the importance of socio-cultural integration in developing graduate competencies. This is in line with the Cross-Cultural Adjustment Theory (Black et al., 1991; Ward & Kennedy, 1999) indicating that successful adaptation allows international students to be more involved in academic and social settings, facilitating personal and professional development. Likewise, the positive relationship between Educational Differences and Employability Skill Development was found to be congruent with Human Capital Theory (Becker, 1964) that indicates that new pedagogical approaches and learning environments contribute to the development of valuable workplace competencies.

Another finding of the study was that Educational Differences significantly increased Perceived Signalling Challenges ($\beta = .583$, $p < .001$). This result is similar to the predictions of Job Market Signalling Theory (Spence, 1973) that the employer's assessment of job applicants depends on signals which are observable in cases of information asymmetry. Educational differences may therefore present greater challenges to students in communicating and demonstrating their qualifications, competencies, and achievements to prospective employers.

In contrast to H4 and H5, Cultural Adaptation ($\beta = .263$, $p = .004$) and Employability Skill Development ($\beta = .696$, $p < .001$) proved to be positively related to Signalling Challenges. Higher levels of cultural adaptation and employability skill development were associated with greater perceived signalling challenges.

Positive relationships between Cultural Adaptation and Employability Skill Development, and between Signalling Challenges and Employability Skill Development were unexpected and must be interpreted with caution. One possible explanation, referred to here as the Critical Awareness Effect, is that students with stronger cultural adaptation and higher levels of employability skill development may become more aware of the difficulties involved in communicating and demonstrating their competencies to potential employers. These findings do not necessarily indicate a lack of preparedness. Instead, they may reflect greater awareness of the challenges involved in effectively communicating qualifications, skills, and experiences within labour market contexts.

This interpretation differs from the traditional expectations of Human Capital Theory and Job Market Signalling Theory. According to Human Capital Theory, the process of acquiring knowledge, skills, and competencies has a positive effect on employment outcomes and Job Market Signalling Theory states that educational credentials and competencies act as signals to decrease the information gap between job seekers and job providers. The present results suggest, however, that individuals with stronger competencies may also be more aware of these challenges. It is therefore not concluded that employability skills or cultural adaptation is a barrier to employment but that these skills could be correlated with an increased awareness of the signalling issues present.

It should be noted that this interpretation must be viewed with a certain amount of caution as there was not a direct measure of the awareness of the signalling difficulties in the present study. Therefore, the results are not to be considered as proof of a new theoretical concept. Rather, they provide a possible explanation that warrants further investigation through qualitative, mixed-method, and longitudinal research.

The interpretation is consistent with the viewpoints of Holmes (2013) and Brown, Lauder, and Ashton (2011) who suggest that the employability outcomes are affected not only by skills, but also by broader contextual and institutional factors that impact how skills are interpreted and valued. Thus, employability should be viewed not only as the possession of competencies but also as a process involving the communication, interpretation, and recognition of those competencies within labour market contexts.

Theoretical and Practical Implications

The findings provide additional empirical support for the application of Human Capital Theory, Job Market Signalling Theory, and Cross-Cultural Adjustment Theory in understanding international student employability. The findings indicate that higher levels of skills acquired may also increase awareness of challenges in conveying skills to employers and/or potential employers, though this is consistent with the Human Capital Theory that posits that education and skill development leads to better graduate outcomes. Likewise, even though Job Market Signalling Theory argues that the signalling process is important to overcome information asymmetry, it was found that signalling problems can be relevant even amongst highly skilled and culturally adapted students. The results add to the emerging debate about the complexity of graduate employability in an international environment.

The focus here is on practical aspects, in which higher education institutions can further develop tools and processes to facilitate the transfer of acquired competencies into employment skills for international students. This could be in the form of career readiness programs, employer involvement, networking events, mentorship programs, or specific career support for international students. Employers may also benefit from adopting competency-based assessment methods which focus more on skills and capabilities that are demonstrated than on the amount of formal education acquired. This can be achieved through initiatives that decrease the perception of signalling problems and enhance graduate transition outcomes.

Limitations and Future Research Directions

This study has several limitations. First, the cross-sectional design does not allow for causal inferences to be drawn between the relationships between Educational Differences, Cultural Adaptation, Employability Skill Development and Signalling Challenges. Second, this study used self-reported data, the findings reflect participants' perceptions rather than objectively verified labour market outcomes. Thirdly, the study was conducted with students at private Malaysian HEIs where the majority were Bangladeshi students studying STEM courses, which could affect the generalisability of the results to other student groups and educational environments. Lastly, the unexpected positive correlations among Cultural Adaptation, Employability Skill Development and Signalling Challenges suggested a possible interpretation of the Critical Awareness Effect, but the mechanisms were not directly measured and hence warrant further research.

Longitudinal studies could be used in future research to explore changes in the perceptions of signalling, employability skills and Cultural Adaptation over time from higher education to work. Interviews, focus groups and employer perspectives would also be useful in qualitative and mixed-method studies to better understand the mechanisms leading to the proposed Critical Awareness Effect. Comparative studies of various international student populations, host countries and institutional contexts also could inform wider generalizations of the findings in the present study.

Conclusion

This study investigated the impact of Educational Differences and Cultural Adaptation on Employability Skill Development and Signalling Challenge faced by Bangladeshi international students in Malaysian Higher Education Institutions (HEIs). The results show that Educational Differences and Cultural Adaptation have positive correlations with the variables of Employability Skill Development with Cultural Adaptation being the highest of them all. The educational differences also strongly contributed to the higher perceived Signalling Challenges. Interestingly, these results indicated that Cultural Adaptation and Employability Skill Development were positively related to Signalling Challenges, indicating that individuals who adapted better and had higher competency in the skills did not necessarily experience less perceived signalling challenges. The study frames an explanation for this unexpected pattern in the Critical Awareness Effect as a possible interpretive mechanism: the students who are more adapted and employable are more likely to be aware of any problems with communicating and demonstrating competencies in employment related settings. This interpretation is not a new theory, but one that offers further understanding of the link between human capital development and signalling processes, and international graduate employability. The results emphasize how vital it is to help international students not only to build employability skills but also to convey these skills in labour market settings.

Conflict of Interest Statement

The author declares that there is no conflict of interest regarding the publication of this study.

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