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Student Adaptation Across Institutional Boundaries: A Mixed-Methods Study of a "3 + 1" Joint Training Programme in China

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"3 + 1" joint training programmes, in which students spend three years at a partner institution and return to their home institution for a final year, have expanded rapidly in Chinese higher education. Little is known about how students adapt when they cross institutional, disciplinary, and geographic boundaries within a single national system. A convergent mixed-methods design combined a survey of 54 joint-training students (University W: n = 21; University B: n = 33) with semi-structured interviews with 15 of them. A 33-item instrument measured four dimensions of adaptation. Survey data were analysed with independent-samples t-tests, Cohen's d with 95% confidence intervals and Spearman correlations; Bonferroni correction was applied across the five institution-level comparisons (adjusted $\alpha = 0.01$). Interviews were analysed thematically (Braun & Clarke, 2006) with deductive and inductive coding. The two institutions differed only in living adaptation, and the difference was large ($d = -1.42$, 95% CI [-2.03, -0.81], $t(52) = -5.10$, $p < 0.001$). It was concentrated in three campus-environment items: campus location and environment ($d = -1.99$), recreational facilities ($d = -1.59$) and the living environment ($d = -0.97$). Professional learning ($d = -0.37$), psychological adaptation ($d = -0.15$) and career planning ($d = -0.29$) did not differ reliably, nor did any year-level comparison. Restricting the institution comparison to first-year students, the only year level at which both partners enrolled participants (n = 21 vs. 16), reproduced the living-adaptation contrast ($d = -1.46$) while also yielding a difference in the full-scale composite ($p = 0.008$). Composites were intercorrelated ($\rho = 0.36$ to 0.88). Interview accounts located the same contrast in the physical campus rather than in teaching or belonging. In this programme, institutional differences were confined to the material conditions of campus life rather than to academic or psychological adjustment. Because geographic distance covaries with campus facilities, disciplinary specialisation, and peer composition, the difference cannot be attributed to distance alone; administrative and logistical coordination is the more actionable lever. The four boundary-crossing mechanisms appeared unevenly: Identification and coordination were common, reflection appeared mainly in second-year accounts, and no account met the criterion for transformation. Given the small sample and partially confounded design, results are exploratory and hypothesis-generating.

Keywords: joint training programme, student adaptation, institutional distance, boundary crossing, mixed methods, higher education, China

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Introduction

Background

Cross-institutional collaboration has become a prominent strategy for cultivating interdisciplinary talent, and in China the "3 + 1" model has been adopted by a growing number of universities to combine complementary institutional strengths (Ministry of Education, 2015). The programme studied here operates within a municipal joint-training scheme: Students enrolled at a foreign studies university (University H) spend three years at one of two partners—University B, strong in foreign language education and area studies, or University W, specialising in international relations and diplomacy—before returning to H for their final year.

Students in these programmes cross several boundaries at once: geographically separated campuses, distinct disciplinary traditions, and two administrative systems. Research on student adaptation has largely examined single-institution settings (Tinto, 1993; Pascarella & Terenzini, 1980; 2005; Credé & Niehorster, 2012), and cross-border education research has concentrated on international students moving between countries (Altbach & Knight, 2007). Reviews have mapped the outcomes of interdisciplinary provision without settling how students experience it (Van den Beemt et al., 2020; Oudenampsen, Das, Blijlevens, & van de Pol, 2024; Vereijken et al., 2023), and work on how Chinese students negotiate joint and cooperative programmes is only beginning to appear (Hang & Zhang, 2024; Lai & Jung, 2025). The experience of students moving between domestic institutions within one national system remains comparatively underexamined.

Theoretical Framework

This study draws on two complementary frameworks. Institutional distance theory (Kostova & Zaheer, 1999) conceptualises differences between organisations along regulatory, normative, and cognitive dimensions, and has been applied to adjustment difficulties in cross-institutional arrangements (Nguyen, Nhan, & Ta, 2021). Boundary crossing theory (Akkerman & Bakker, 2011) describes how individuals navigate discontinuities between contexts through four mechanisms: identification, coordination, reflection, and transformation.

These frameworks provide an interpretive rather than a confirmatory lens. No mediation or moderation is posited; the study asks how students account for their adaptation and whether patterns in the survey align with the mechanisms the literature describes.

Two qualifications carry through the whole analysis. The four dimensions are read against the boundary-crossing mechanisms rather than against hypotheses. And transformation is used in Akkerman and Bakker's strict sense of a durable reshaping of practice: Changes in career aspiration alter what a student aims at rather than what they do, and are therefore read as products of reflection (Section 3.2.8).

Research Questions

1. How do joint-training students describe their academic, administrative, and emotional adaptation across the two institutional settings?
2. What differences, if any, are observable between students placed at the two partner institutions?
3. How do students' accounts map onto the mechanisms of boundary crossing?

Methods

Design

This study used a convergent mixed-methods design (Creswell & Creswell, 2021). The quantitative strand (survey) and the qualitative strand (interviews) were conducted in parallel with the same population, and their

results were brought together at the point of interpretation so that statistical patterns could be read alongside participants' own accounts. The design is exploratory but is not sequential: The qualitative strand did not inform the development or revision of the survey instrument.

Programme Structure and Participants

University H is the students' home institution and degree-awarding body. Under the "3 + 1" structure, students spend their first three years at one of its two partners—University B (foreign language education and area studies) or University W (international relations and diplomacy)—and return to University H for their final year.

Three features of this arrangement constrain every comparison that follows. First, the two cohorts share a single home institution and differ only in their placement, so the comparison is between two placements within one programme, not two independent populations. Second, within the survey every University W respondent was first-year and every second-year respondent attended University B, so the institution × academic year design contains one empty cell and the two variables are partially, not wholly, confounded. Third, the survey sample is separated by discipline too: Every University W respondent was enrolled in international politics and every University B respondent in one of six foreign-language programmes. Institution therefore cannot be separated from discipline, and each difference reported below may be read as a difference in either. Because both partners enrolled first-year students, one comparison does hold year within a single level, and it is reported in Section 3.1.5. This qualification applies throughout.

Data collection took place in 2026. Questionnaires were distributed during classroom sessions at both partners with coordinators' cooperation and returned on site; participation was voluntary and anonymous, giving 54 usable responses. Against enrolment figures supplied by the partners this corresponds to 21 of 32 students at University W (65.6%) and 33 of 40 at University B (82.5%), a pooled 75.0% (54 of 72). Attendance on the distribution days was not recorded, so these rates are lower bounds.

The University W respondents were all first-year entrants in a single discipline (international politics, diplomatic studies track). The University B respondents spanned six foreign-language programmes (Albanian, Croatian, Hungarian, Portuguese, Romanian, and Spanish) and included both first-year (n = 16) and second-year (n = 17) students. Table 1 summarises the sample.

Table 1

Sample Characteristics (N = 54)

Characteristic	University W (n = 21)	University B (n = 33)	Total (n = 54)
Academic year			
First year	21 (100.0%)	16 (48.5%)	37 (68.5%)
Second year	0 (0.0%)	17 (51.5%)	17 (31.5%)
Discipline			
International politics (diplomatic studies)	21 (100.0%)	0	21 (38.9%)
Albanian	0	6 (18.2%)	6 (11.1%)
Romanian	0	8 (24.2%)	8 (14.8%)
Hungarian	0	10 (30.3%)	10 (18.5%)
Spanish	0	4 (12.1%)	4 (7.4%)
Portuguese	0	3 (9.1%)	3 (5.6%)
Croatian	0	2 (6.1%)	2 (3.7%)

Table 1 to be continued

Gender			
Female	13 (61.9%)	27 (81.8%)	40 (74.1%)
Male	8 (38.1%)	6 (18.2%)	14 (25.9%)
Stream *(2 missing)*			
Arts	11 (52.4%)	17 (51.5%)	28 (51.9%)
Science	9 (42.9%)	15 (45.5%)	24 (44.4%)
Not reported	1 (4.8%)	1 (3.0%)	2 (3.7%)
Only child			
Yes	17 (81.0%)	31 (93.9%)	48 (88.9%)
No	4 (19.0%)	2 (6.1%)	6 (11.1%)

Notes. Percentages are within institution. Because all University W respondents were first-year students and all second-year respondents attended University B, the two variables are partially rather than wholly confounded, and the comparison of the two partners' first-year students separates them (Section 2.2).

Fifteen students took part in semi-structured interviews lasting approximately 40 minutes, selected to vary in partner institution and year of study, and recruited through an open invitation from programme coordinators in class; volunteers came forward, and no interviewee was traced through a survey response. Seven attended University W and eight University B, with both year levels represented at each partner; year group is recorded at interview rather than at survey. Participants were informed of the purpose and assured of confidentiality before recording began, and follow-up interviews were conducted with three participants for clarification.

To limit bias, transcripts were reviewed by a second reader not involved in study design; interviewers avoided leading questions and encouraged candid accounts, including negative ones.

Measures

The 33-item instrument was developed for this study, drawing on established measures of academic and social integration, student adjustment, and career adaptability, with all items on a five-point Likert format (1 = strongly disagree to 5 = strongly agree). The instrument was administered in Chinese; an English translation of all items is available from the author on reasonable request.

Following the theoretical grouping used in the original instrument design, items were assigned to four dimensions: professional learning (13 items), psychological adaptation (9), career planning (6) and living adaptation (5). Composites were computed listwise as the mean of the items in each dimension, and an overall score as the mean of all 33; valid n is reported for each analysis.

Table 2

Internal Consistency of Adaptation Dimensions (N = 54)

Dimension	Items (k)	Cronbach's α	Valid n	Status
Professional learning	13	0.918	53	Acceptable
Living adaptation	5	0.897	54	Acceptable
Career planning	6	0.757	54	Acceptable
Psychological adaptation	9	0.669	53	Below 0.70—interpret with caution
Full scale	33	0.925	52	Acceptable

Notes. Composites computed listwise within dimension. No exploratory factor analysis was conducted: The case-to-item ratio is 1.64:1 and KMO = 0.525, below the conventional 0.60 threshold.

Internal consistency was assessed on the present sample (Table 2). Values were acceptable for professional learning (α = 0.918), living adaptation (α = 0.897), career planning (α = 0.757), and the full scale (α = 0.925);

psychological adaptation fell below the conventional threshold (α = 0.669), and all results for it are flagged below. No factor analysis was conducted: With 33 items and 54 respondents the case-to-item ratio is 1.64:1 and KMO = 0.525, so factor-analytic claims would not be defensible.

Data Availability

The de-identified item-level dataset and the scripts reproducing every statistic in Section 3 are available from the author on reasonable request.

Analytic Strategy

Independent-samples t-tests compared institutions and academic years. Given the exploratory purpose and small sample, effect sizes with 95% confidence intervals are emphasised over significance testing (Cumming, 2014). Spearman correlations examined associations among composite dimensions.

Bonferroni correction was applied to the five institution-level composite comparisons reported in Table 3, Panel A (adjusted α = 0.05/5 = 0.01), because those comparisons bear directly on the research questions; its scope does not extend to the year-level comparison (Section 3.1.4) or to the item-level tests, which are reported with uncorrected p-values and are descriptive only.

Table 3

Institutional Comparisons of Adaptation Composites

Panel A. Institution Comparison (University W vs. University B)

Composite	University W M (SD)	University B M (SD)	t	df	p	Cohen's d	95% CI for d	Significant at α = 0.01
Professional learning	3.43 (0.60)	3.71 (0.85)	-1.29	51	0.203	-0.37	[-0.93, 0.19]	No
Psychological adaptation	3.68 (0.60)	3.77 (0.59)	-0.55	51	0.585	-0.15	[-0.71, 0.40]	No
Career planning	3.34 (0.62)	3.56 (0.84)	-1.03	52	0.308	-0.29	[-0.84, 0.26]	No
Living adaptation	3.07 (1.06)	4.29 (0.71)	-5.10	52	<0.001	-1.42	[-2.03, -0.81]	Yes
Overall adaptation	3.45 (0.52)	3.77 (0.63)	-1.89	50	0.064	-0.54	[-1.11, 0.03]	No

Panel B. Institution Comparison Restricted to First-Year Students (University W vs. University B)

Composite	University W M (SD)	University B M (SD)	t	df	p	Cohen's d	95% CI for d	Significant at α = 0.01
Professional learning	3.43 (0.60)	3.88 (0.70)	-2.10	34	0.043	-0.71	[-1.38, -0.03]	No
Psychological adaptation	3.68 (0.60)	3.97 (0.44)	-1.58	35	0.122	-0.53	[-1.19, 0.14]	No
Career planning	3.34 (0.62)	3.71 (1.00)	-1.38	35	0.176	-0.46	[-1.12, 0.20]	No
Living adaptation	3.07 (1.06)	4.41 (0.69)	-4.40	35	<0.001	-1.46	[-2.19, -0.73]	Yes
Overall adaptation	3.45 (0.52)	3.95 (0.55)	-2.83	34	0.008	-0.95	[-1.64, -0.26]	Yes

Notes. Bonferroni correction applied within Panel A, across the five institution comparisons (adjusted α = 0.05/5 = 0.01). Degrees of freedom vary because composites requiring complete data within a dimension have slightly different valid n. Levene's test indicated unequal variances for living adaptation in Panel A (p = 0.034); Welch's correction returns t = -4.67, df = 31.3, p < 0.001, leaving the conclusion unchanged. Panel B restricts the institution comparison to first-year students, holding academic year at one level; the same five-comparison correction is applied within it (adjusted α = 0.01). Valid n is 20-21 for University W and 16 for University B.

Qualitative Analysis

Interview transcripts were analysed thematically following Braun and Clarke's (2006) six phases: familiarisation, initial coding, theme generation, theme review, theme definition, and reporting (see also Creswell & Poth, 2018).

Coding was both deductive and inductive. Deductive codes were drawn from the two frameworks: geographic, administrative and cultural distance, and identification, coordination, reflection and transformation. Inductive codes arose from the data and comprised cohort cohesion, information sharing, emotional support, institutional liminality, logistical barriers, and career uncertainty.

Two researchers coded all transcripts independently: the author and a trained assistant. After coding the first five separately they compared codes, resolved disagreements and refined definitions, then applied the revised framework to the full set; later disagreements were resolved by consensus. Codes were organised hierarchically into the macro-themes of Section 3.2 and their micro-codes (Lincoln & Guba, 1985; Nowell, Norris, White, & Moules, 2017).

No inter-coder agreement coefficient is reported. Braun and Clarke (2006) locate coding as an interpretive, iterative engagement with the data rather than as a measurement procedure, so a coefficient of coding stability would misdescribe what was done. Quality is argued instead through the procedural criteria Nowell et al. (2017) set out.

Coding proceeded across all 15 interviews, and the code set stabilised before the final three, which introduced no substantively new codes and served to refine the boundaries of themes already in the framework. Table 5 sets out the resulting framework, and Table 6 records the saturation judgement in auditable form. Saturation here concerns the coding rather than the population (Guest, Bunce, & Johnson, 2006; Malterud, Siersma, & Guassora, 2016); because the coding record does not date the point at which the set stabilised, we state only what it supports—no new codes after the final three interviews.

Table 4

Item-Level Institutional Differences (Items With $|d| \geq 0.4$)

Item	University W M (SD)	University B M (SD)	t(52)	p	Cohen's d	95% CI for d
Satisfaction with campus location and environment	2.48 (1.21)	4.36 (0.74)	-7.12	<0.001	-1.99	[-2.65, -1.32]
Satisfaction with recreational facilities	2.48 (1.17)	4.09 (0.91)	-5.68	<0.001	-1.59	[-2.21, -0.96]
Tendency to make study plans	2.52 (1.12)	3.70 (1.19)	-3.62	0.001	-1.01	[-1.59, -0.43]
Adaptation to the living environment	3.10 (1.37)	4.21 (0.99)	-3.47	0.001	-0.97	[-1.54, -0.39]
Positive campus atmosphere	3.62 (1.50)	4.48 (0.80)	-2.77	0.008	-0.77	[-1.34, -0.21]
Adjustment of study goals	3.05 (1.02)	3.82 (1.10)	-2.57	0.013	-0.72	[-1.28, -0.15]
University preferred over high school	3.67 (1.24)	4.30 (0.98)	-2.09	0.041	-0.58	[-1.14, -0.03]
Seeking help from a counsellor	2.76 (1.45)	2.06 (1.37)	1.80	0.078	+0.50	[-0.05, 1.06]
Comfort at school	3.48 (1.40)	4.12 (1.24)	-1.77	0.083	-0.49	[-1.05, 0.06]
Knowing what knowledge is needed	3.19 (0.98)	3.61 (1.00)	-1.50	0.139	-0.42	[-0.97, 0.13]

Notes. Negative d indicates lower scores at University W. Item-level p-values are uncorrected and are reported descriptively, consistent with the correction scope stated in Section 2.5 (Table 3, Panel A only). Full item statistics are available from the author on reasonable request.

Table 5

Coding Framework: Themes, Micro-Codes, and Boundary-Crossing Mechanisms

Macro-theme	Constituent micro-codes	Boundary-crossing mechanism(s)
1. Overall programme feedback	Combined resources; diverse cultures; professional networks; programme value recognition	Identification
2. Disciplinary variations	Resource availability; peer support; language-acquisition difficulty; professional identity	Identification; reflection
3. Year-level variations	Initial confusion; expectation divergence; overseas exchange access	Reflection

Table 5 to be continued

4. Institutional environment variations	Geographic distance; logistical difficulties; administrative procedures; home-university activities; connectivity challenges; institutional belonging	Coordination; identification
5. Student management variations	Cohort composition; dense joint-training cohorts; dispersed placement; cohesion; isolation; sense of belonging	Coordination
6. Academic performance and student characteristics	Strong academic performance; genuine interest; active engagement; extracurricular participation; institutional belonging; regret; feelings of inadequacy; neglect	Identification

Notes. Mechanisms were mapped after coding was complete, as an interpretive step; the mapping is heuristic, and a single theme may bear on more than one mechanism.

Table 6

Saturation Record

Item	Value
Interviews conducted and analysed	15
Interview format	Semi-structured, approximately 40 minutes each
Follow-up interviews conducted where clarification was needed	3 participants
Coders	2 (the author and a trained research assistant)
Coding approach	Combined deductive and inductive
Interviews in which no substantively new code appeared	The final 3
Themes added once the code set had stabilised	0
Disagreement resolution	Consensus discussion between the two coders

Notes. Saturation is a claim about the coding, not about the population: The code set stopped generating new entries before the final three interviews, which served to refine existing themes rather than to generate new ones. We record it as "the final three interviews" rather than as a numbered stopping point, because that is the precision our coding record supports.

Ethics

The study was approved by the Academic Ethics Committee of Beijing International Studies University (Approval number 20260010, granted prior to data collection) and conducted in accordance with the British Educational Research Association's Ethical Guidelines for Educational Research (BERA, 2018). All participants received written information on the study's purpose, voluntary participation, and data handling.

In line with the Committee's policy for non-interventional educational research, written informed consent was not required, and this formed part of the approved application; verbal consent was obtained before each questionnaire was distributed or interview began, and a returned questionnaire was taken as consent. No signed record was created: It would have been the only document linking a participant to an anonymous response. Interview data are confidential rather than anonymous and were kept apart from the survey returns. Participants could decline any question and withdraw without consequence.

Results

Quantitative Findings

Sample characteristics. The 54 respondents comprised 37 first-year and 17 second-year students, the latter all at University B. Forty were female and 14 males; 48 only children; 28 from arts streams and 24 from science (two did not report). All 17 second-year respondents attended University B, so the year group is nested within the University B group rather than identical to it.

Reliability. Table 2 reports internal consistency; psychological adaptation alone fell below 0.70 ($\alpha = 0.669$).

Institutional differences in adaptation. Composite scores for the two institutions are compared in Table 3

(Panel A). Applying the adjusted threshold of $\alpha = 0.01$, only living adaptation differed significantly: University W students reported markedly lower satisfaction ($M = 3.07$, $SD = 1.06$) than University B students ($M = 4.29$, $SD = 0.71$), $t(52) = -5.10$, $p < 0.001$, $d = -1.42$, 95% CI [-2.03, -0.81]—a large effect.

The remaining composites showed no significant differences: professional learning ($M = 3.43$ vs. 3.71; $d = -0.37$), psychological adaptation (3.68 vs. 3.77; $d = -0.15$), career planning (3.34 vs. 3.56; $d = -0.29$), and overall adaptation (3.45 vs. 3.77; $d = -0.54$, $p = .064$). For all four, the confidence intervals include zero.

The living-adaptation difference was not a general dissatisfaction with university life. It was concentrated in three items concerning the physical campus and its facilities (Table 4):

- satisfaction with campus location and environment ($d = -1.99$, 95% CI [-2.65, -1.32]);
- satisfaction with recreational facilities ($d = -1.59$, 95% CI [-2.21, -0.96]);
- adaptation to the living environment ($d = -0.97$, 95% CI [-1.54, -0.39]).

One item ran in the opposite direction. University B students reported lower scores on seeking help from a counsellor (University W $M = 2.76$ vs. University B $M = 2.06$, $d = +0.50$), although the difference was not significant ($p = 0.078$, uncorrected). This may indicate greater reluctance to use psychological support services at University B, or simply a difference in how the item was understood; we return to it in Section 4.1.3.

Year-level differences. Comparisons between first- and second-year students showed no significant difference on any dimension: professional learning ($d = 0.11$), psychological adaptation ($d = 0.38$), career planning ($d = 0.10$), living adaptation ($d = -0.52$), and overall adaptation ($d = 0.15$), all $p > 0.05$.

Two cautions apply. First, this comparison is confounded with institution (Section 2.2) and cannot be read as a year effect. Second, without a comparison group outside joint training, general maturation cannot be ruled out. The comparisons are reported for completeness rather than interpreted substantively.

Sensitivity analysis: Holding academic year constant. Both partners enrolled first-year students, so one comparison holds academic year at a single level: University W ($n = 21$) against University B ($n = 16$). Restricted to that cohort, the living-adaptation contrast reproduces and is slightly larger than in the full comparison ($d = -1.46$, $t(35) = -4.40$, $p < 0.001$; Welch $p < 0.001$), still significant at $\alpha = 0.01$, while the full-scale composite also differed at the adjusted threshold ($p = 0.008$; Table 3, Panel B); professional learning differed only at the uncorrected level ($p = 0.043$). Where the comparisons above are null, they may therefore understate differences among first-year entrants.

Associations among dimensions. All dimensions were positively correlated, from $\rho = 0.36$ (career planning with living adaptation, $p = 0.008$) to $\rho = 0.88$ (professional learning with overall adaptation, $p < 0.001$). The dimensions thus tap a broadly common underlying construct while remaining distinguishable: with career orientation varying most independently. The three largest coefficients are partly artefactual: The overall score includes all 33 items, so values above $\rho = 0.70$ are inflated by item overlap and indicate coherence rather than independent association. The correlations are reported descriptively, consistent with the correction scope stated in Section 2.5.

Summary of quantitative findings. One substantive quantitative finding emerged. Institution differences in this programme were confined to living adaptation, and specifically to the physical campus and its facilities; differences in academic, psychological, and career-related adaptation were not statistically reliable. The living-adaptation contrast persisted when the comparison was restricted to first-year students, where it was accompanied by a difference in the full-scale composite (Section 3.1.5).

Qualitative Findings

Coding framework and theme structure. Coding proceeded over all 15 transcripts, deductively and inductively, yielding six macro-themes with their micro-codes, set out in Table 5 together with their mapping onto boundary-crossing mechanisms. Segments routinely carried several micro-codes. The six themes follow; where a theme bears on a quantitative result, the two are compared explicitly.

Theme 1—Overall programme feedback. Interviews revealed generally positive attitudes toward the programme. Most students reported benefiting from the combined academic resources of both institutions and from the professional networks they were able to build. One student noted:

> I participated in many diplomatic competitions, and teachers from both universities arranged networking events, enabling us to make many friends.

Some students also reported academic and living challenges. These varied across disciplines, year groups, institutional settings, and class composition, and the following subsections trace those variations in turn.

Theme 2—Disciplinary variations. Students in disciplines with strong institutional resources and supportive peer environments reported higher satisfaction and better adjustment, and expressed a stronger professional identity. Students in less commonly taught languages described greater difficulty, particularly where institutional support was thin. One remarked:

> The language is extremely challenging, and I struggled to keep up with classmates. The lack of peer support made it even more difficult.

The survey does not corroborate this contrast. Because discipline and institution are indistinguishable in this sample, the relevant comparison is the composite in Table 3, where professional learning did not differ reliably ($d = -0.37$, $p = 0.203$), although two individual items within it did move (Table 4). The disciplinary contrast should therefore be read as an account of what students themselves treated as consequential rather than as a verified group difference.

Theme 3—Year-level variations. First-year students often described confusion and disappointment, particularly where the reality of the arrangement diverged from what they had expected on applying:

> When I applied, I thought I would spend three years at University H and then go to University W. I hadn't understood how the arrangement actually worked.

Second-year students, by contrast, tended to describe their situation more positively as they became familiar with both environments and gained access to overseas exchange opportunities.

No year-level difference is reliable (Section 3.1.4; all $p > 0.05$; uncorrected by design, Section 2.5), so the contrast is reported only as it appeared in accounts, without the status of a verified difference.

Theme 4—Institutional environment variations. Distance between the home institution and the partner institutions shaped students' daily experience. Students placed at University W reported logistical difficulty in taking part in University H activities and in completing administrative procedures. Those at University B, which occupies a more central location with better transport connections, reported fewer such difficulties:

> Every time I need to submit a document to University H, I have to take a two-hour commute. It makes me feel like I'm not really part of either institution.

This is where the two strands converge most clearly. The survey identified living adaptation as the only dimension on which the placements differed (d = -1.42, 95% CI [-2.03, -0.81]; Table 3), concentrated in items concerning the physical campus. The interviews give the same picture from the student's side: What students described was not academic or psychological difficulty but the campus itself and where it sits, suggesting an infrastructure gap rather than a gap in adaptive capacity.

University W and University B also differ in disciplinary focus, facilities, and peer composition, so the difference cannot be attributed to distance as such (Section 4.1.1).

Theme 5—Student management variations. Class composition emerged as a salient factor. Students in cohorts where joint-training students formed a substantial share of the class described stronger cohesion and faster adjustment. One explained:

> When half the class is in the same programme, we naturally form study groups and support networks. We share information about navigating both institutions' systems.

Students dispersed across existing classes described more isolation and a weaker sense of belonging.

Theme 6—Academic performance and student characteristics. Students reporting the most positive experiences shared several characteristics: strong academic performance, genuine interest in the discipline, engagement with faculty and peers, and extracurricular participation. These students tended to speak of both institutions as their alma maters.

Those with more negative experiences described academic difficulty, regret about their programme choice, and feelings of inadequacy or neglect.

Mapping themes onto boundary-crossing mechanisms. The six themes were mapped onto the four boundary-crossing mechanisms (Akkerman & Bakker, 2011). The mapping is exploratory and heuristic—a way of reading accounts against theory, not a test of it.

Identification involves recognising and articulating differences between contexts. Students frequently contrasted the two settings, describing differences in academic expectations, campus culture, and administrative procedure. One noted:

> The teaching style at University H is much more interactive, while at my partner university it's more lecture-based. At first it was confusing, but now I appreciate both.

Coordination involves developing routines and procedures for bridging boundaries. Students in dense joint-training cohorts described forming study groups and information-sharing networks to manage requirements spanning both institutions, as already quoted in Section 3.2.6.

A feature of this coordination is worth drawing out: It was peer-driven and informal rather than institutionally structured. Students described coordinating with one another, not with a designated office or procedure.

Reflection: Some students described a broadened perspective arising from having experienced two institutional cultures: "Studying at both universities gave me a much wider view of international relations. I can see how different academic traditions approach the same problems". Others described a consequent change in what they wanted to do: "I originally wanted to work in diplomacy, but after experiencing both institutions, I realised I'm more interested in research and policy analysis". We count this as a product of reflection. It alters what a student aims at; it does not alter what they do.

Fewer accounts described reflection than identification or coordination, and we do not claim that reflective capacity increased with year of study: The year comparisons provide no support for that claim.

Transformation involves a durable reshaping of practice as a result of boundary encounters. We use the term strictly, and on that criterion no account met it. Changes in aspiration did occur, but these concern orientation rather than practice and are read above as reflection. The absence reported here is therefore an absence of observed transformation in the strict sense, not a claim that it cannot occur.

The four mechanisms thus appeared unevenly: Identification and coordination were common, reflection less frequent and mainly in second-year accounts, transformation absent. Given the exploratory character of the mapping, this is a tentative observation about how often each mechanism appeared; its implication for the theory is taken up in Section 4.1.2.

Discussion

Interpretation of Findings

Institutional differences are specific, not general. The survey evidence points to a narrower conclusion than one might expect: The two institutions did not differ in how well students adjusted academically, psychologically or in career terms, but in the material conditions of daily life.

The three items that drove this difference—campus location, recreational facilities and living environment—are properties of a campus rather than of a programme. What students experienced as an adaptation gap was in important part an infrastructure gap.

Nor can it be attributed to geographic distance: The two partners differ simultaneously in location, disciplinary focus, facilities and peer composition, and distance covaries with all of these. The finding is framed as an association and a causal reading is declined; the design cannot separate distance from what accompanies it.

The living-adaptation difference could reflect a cohort effect rather than a difference between placements, and the two are not fully separable in this design. It does persist in the comparison that holds academic year constant (Section 3.1.5), so the placement reading survives that test even though a residual cohort contribution cannot be excluded.

What the findings suggest about the two theories. Although the two theories are applied interpretively rather than tested, four observations bear on their scope.

First, the boundary-crossing framework has little to say about material conditions. Akkerman and Bakker's four mechanisms are relational or symbolic—how a person is positioned, how procedures are aligned, how meaning is made—and none refers to the physical circumstances of the crossing. Yet here material conditions were the only dimension on which the institutions differed: The survey located the difference in campus location, facilities and living environment, the accounts in commutes, administrative errands and missed campus events. Where boundaries fall within one national system, so that regulatory and normative distance are compressed, material and everyday conditions may carry more explanatory weight than the mechanisms the theory foregrounds. Recent evidence from China points the same way: First-year adaptation tracks the move itself rather than the academic demands that follow it (Chen, Fang, & Zhang, 2026). This is offered as a proposition for testing elsewhere.

Second, coordination appears socially distributed rather than organisationally anchored. Akkerman and Bakker locate coordination primarily in formal arrangements; here it happened largely through peer networks, as students shared knowledge to manage requirements spanning both institutions rather than using channels the

institutions had established (Gehreke, Schilling, & Kauffeld, 2024; Glass, 2022). Its contingency is what makes it informative: Dense cohorts described it readily, dispersed students isolation instead. Coordination was produced by proximity to peers, not supplied by the programme: Practically, that dependence on peer density is fragile and argues for formal credit-recognition procedures and a single contact point; theoretically, the mechanism may be more socially distributed than the original formulation implies.

Third, transformation may have a temporal boundary condition. On the strict criterion of Section 3.2.8—a durable reshaping of practice—no instance was observed; what occurred were changes in aspiration, read above as reflection. Akkerman and Bakker tie transformation to sustained engagement across a boundary in which something new is created; participants were in the placement's first two years, so only the early crossing was observed, and whether transformation appears in the fourth year at University H is beyond this design. The claim is therefore a boundary condition, not a disconfirmation.

Fourth, when institutional distance is small, non-geographic dimensions may dominate. On Kostova and Zaheer's formulation, regulatory distance is minimal within one national system, and the difficulties observed arose from normative and cognitive differences plus material conditions. The framework treats its dimensions as parallel; these data hint that where regulatory distance is low, administrative and physical distance may matter more for everyday experience.

Countervailing patterns worth noting. Institutional identity was largely unproblematic in the accounts available: Students reporting positive experiences spoke of both institutions as their alma maters (Section 3.2.7). This is consistent with the absence of a reliable institution difference in psychological adaptation ($d = -0.15$) and helps interpret it: If the boundary is not experienced as a problem of identity, a measure of psychological adjustment would not be expected to register one. The null result should nonetheless be read cautiously, since this dimension had the lowest internal consistency ($\alpha = 0.669$).

A second result ran opposite to the general direction. University B students reported the lowest item mean among the items reported in Table 4 on seeking help from a counsellor ($M = 2.06$), raising a question for future work: whether greater provision is accompanied by greater reluctance to use it, whether through stigma or reliance on peer support.

Limitations

Confounded design, partial participation, small sample and reliability. In the survey sample, institution and academic year are partially confounded, and institution is inseparable from discipline and covaries with facilities and peer composition, so no difference can be attributed to a single factor—hence the associational language used throughout. Participation differed across the two partners (65.6% and 82.5%), so self-selection cannot be ruled out. The analytic sample of 54 is insufficient for factor analysis (Section 2.3), confirmatory testing, mediation or moderation, and several confidence intervals are wide. Psychological adaptation fell below the conventional reliability threshold ($\alpha = 0.669$), so its null result may partly reflect measurement error. No participant had entered the third year of the placement or the return year at University H, so the findings describe the away phase only. The study covers a single municipal programme, and transferability to other schemes is a matter for readers to judge. Because survey responses were anonymous, the two strands could not be linked at the level of individual students.

Implications for Practice

Three implications follow, offered in proportion to the strength of the evidence.

Living conditions are a design variable, not an afterthought. The finding is specific to campus location, facilities, and daily living, and programmes can act on these directly—through accommodation arrangements, transport support, and recreational provision at the less well-equipped campus—without first resolving more diffuse differences in institutional culture.

Responsiveness matters as much as provision. Respondents described problems that were not resolved promptly when raised—a two-hour commute to file a single form, administrative procedures spanning both institutions (Section 3.2.5). What was lacking is less a facility than a channel for resolving routine problems. A named contact with authority to act, and a stated turnaround expectation, would cost little and address the concern directly.

Expectations should be managed explicitly. Students described discovering practical constraints after arrival, and one identified scholarship eligibility as unclear during initial implementation—an issue bearing hardest on a first cohort, who have no senior students to ask. Briefing before departure on campus location, transport and facilities, and published answers to recurrent administrative questions, would reduce the mismatch between expectation and experience.

Conclusion

This study examined student adaptation in a "3 + 1" joint training programme using a 54-student survey and 15 interviews. Institutional differences were confined to living adaptation and specifically to the physical campus environment; academic, psychological and career-related adaptation did not differ reliably, and year-level differences were neither reliable nor separable from institution. The contribution is bounded but useful: It locates adjustment problems in the material conditions of daily life rather than in teaching and learning, and suggests that coordination may operate more informally than boundary crossing theory anticipates, while transformation may require a crossing longer than the away phase observed here provides.

These findings are exploratory. They nonetheless suggest a practical priority: Programmes that attend to the least well-equipped campus may address the most salient dimension of student adaptation.

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