

The Mediating Role Of Differentiated Instruction In Intercultural Adaptation And Subjective Well-Being

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Abstract: Previous research indicates that the development of subjective well-being (SWB)—a critical factor for second language learners' psychological health and motivation—depends on intercultural adaptation (IA). However, much of the literature has concentrated on theoretical discussions and position papers, with few empirical investigations addressing second language acquisition, particularly in the context of English. To fill this gap, the present study examines the influence of IA on SWB by introducing differentiated instruction (DI) as a mediating variable. Survey data were collected from 193 Chinese as a Second Language (CSL) university students and analyzed using the SEM-PLS model. The results reveal that key components of IA, including cultural empathy, emotional stability, and Chinese proficiency, significantly enhance SWB, while DI exerts a positive mediating effect on the IA–SWB relationship. Based on these findings, we recommend that educators emphasize thematic care in IA development to help learners maintain a strong connection to Chinese culture during cross-cultural adaptation. In addition, teachers should adopt diverse instructional strategies and assessment tools to foster learners' sensitivity and openness to cultural exploration. This research offers valuable insights for CSL educators seeking to improve international students' well-being and promote their mental health through culturally informed practices.

Keywords: Differentiated Instruction; Intercultural Adaptation; Subject Well-being; Chinese as a Second language Learning; PLS-SEM.

1. INTRODUCTION

The concept of modern language has shifted the focus of language teachers from written language acquisition to learners' expressive language skills (Coleman, 2005). This emphasis on affective expression reflects the growing recognition of how second language learners use socialized language to connect with others. Aligned with this tendency, in second language teaching, positive affective learning experiences are closely tied to a strong sense of Subjective Well-Being (SWB), which primarily stems from two factors: teaching fairness and academic satisfaction (Pomfret et al., 2023).

Differentiated Instruction (DI), as a tailored instructional approach, incorporates various methods to provide personalized learning solutions targeted at the diverse needs, abilities, and learning styles of students (Roy et al., 2015). Its primary aim is to stimulate motivation among second-language learners, enhance their well-being, and maximize their learning potential (Gaitas et al., 2022). Previous studies have primarily applied DI in language teaching to areas such as phonetics and vocabulary, demonstrating that DI not only encourages a more systematic and effective approach to language learning but also enhances learners' SWB (Ainscow et al., 2006). However, there is limited research on how DI impacts learners' well-being in the context of Intercultural Communicative Competence (ICC). Doucerain et al. (2015) highlighted that ICC is the ability of individuals from different cultural backgrounds to engage with one another, establish harmonious relationships, and promote mutual growth.

Currently, in the context of Chinese as a Second Language (CSL) research, to form Intercultural Adaptation (IA) ability is the main goal of teachers to hold ICC activities or open ICC courses, thereby promoting a greater sense of SWB among international students (IS) both in academic settings and in authentic social contexts (Han & Xuan, 2024).

To investigate the mediating role of DI in the relationship between SWB and IA, we adopt three theoretical frameworks: the DI framework proposed by Roy et al. (2013), the CSL IA framework proposed by Ran & Shiao-Yun Chiang (2015), and the SWB framework proposed by Diener et al. (1985) and Steger et al. (2006). Our aim is to develop a new, more comprehensive DI framework for CSL teachers to effectively address the relationship between IA and SWB. This study represents the first attempt to advance and refine the current research on IA within the context of CSL among university students.

2. LITERATURE REVIEW

A. Differentiated Instruction (DI)

DI involves adapting to the diverse learning styles and needs of students by employing intelligent methods to foster creative thinking, encourage innovative problem-solving, and promote self-directed learning with the approach aiming to create a self-reinforcing learning cycle through mobilizing students' active engagement in their own learning processes (Corno, 2008). Therefore, in the classroom, the primary commitment of DI should be to enhance task engagement and accommodate each learner's preferences (Lambert et al., 2023, Rasikawati et al., 2024).

DI in CSL, originating from Zhang & Cao (2023), who first proposed that DI is an essential component of CFL teaching and cannot be omitted, was firstly included to analysis the complex path between IA and SWB. Given the inherently diverse and sometimes conflicting backgrounds of CFL learners, incorporating DI into the development of IA skills allows teachers to respect the extant personal identities of different learners, thus guiding them to adapt to the culture of the target country in a more reasonable manner.

B. Subjective Well-being (SWB)

SWB is the emotional elicitation for individual's evaluation on whether they gain satisfaction in life, reflected in one's confidence to face challenges, the ability to maintain positive interpersonal relationships and the capacity to handle hurdles through diverse coping strategies, thereby reducing negative emotions (Proctor, 2024).

In the process of second language acquisition, the educational and living environments constitute the primary contexts in which learners engage in both formal pedagogical activities and broader social interactions (Kapteyn et al., 2015). Together, these two elements create a diverse and evolving micro-society in which the social support available plays a crucial role in shaping learners' SWB. Teachers and peers are among the most important learning partners, with their roles significantly influencing learners' sense of SWB (Passeggia et al., 2023). From the students' perspective, teachers represent the principal source of linguistic knowledge, with academic achievement serving as a primary goal in their learning endeavors (Aghayani et al., 2024). Consequently, it is essential for teachers to provide ample learning resources, emotional support, and effective instructional strategies. Peers also function as vital sources of social support that contribute to SWB by offering interpersonal connections, emotional reinforcement, and academic assistance beyond the classroom (Ryff, 1989).

C. DI as a mediator between SWB and Intercultural Adaptation

IA refers to "the dynamic process by which individuals, upon relocating to new, unfamiliar, or changed cultural environments, establish (or re-establish) and maintain relatively stable, reciprocal, and functional relationships with those environments" (Kim, 1988, p. 31). When international students relocate to a host country—even for a brief period—they undergo profound physical and psychological immersion in a cultural environment that markedly differs from their own (Yan & Berliner, 2009). In response to these challenges, several researchers have identified DI as an effective mechanism that educational institutions can utilize to enhance learners' intercultural competence and overall well-being (Stairs-Davenport, 2023). DI mobilizes learners' multiple intelligence systems and focuses on cultivating various facets of intelligence even within the limited time of a single classroom session. In the classroom, guided by DI, teachers help learners cement their IA across five dimensions—content, process, product, classroom environment, and teacher involvement—thereby contributing to a heightened sense of SWB (Schwarz & Strack, 1991).

D. Current Study

According to Bailey & Phillips (2016), it is high time for IA researchers to recognize that IA is not the finishing line but a vehicle to guide overseas students to become more willing to engage in wider social interactions, rather than isolating themselves to only school settings. So we propose the following hypothesis:

(H1): IA will show a positive relationship with SWB.

(H1a): IA will predict an increased Satisfaction with Life.

(H1b): IA will predict an increased Meaning in Life.

(H2): Cultural Empathy will be positively related with IA.

(H3): Open-mindedness will be positively related with IA.

(H4): Emotional Stability will be positively related with IA.

(H5): Social Flexibility will be positively related with IA.

(H6): Chinese Proficiency will be positively related with IA.

Given that IA is an irreplaceable experience for every international student, we further extend the literature by examining DI as a mediating effect between IA and SWB. Therefore, based on the theoretical framework proposed by Roy et al. (2013), we proposed the following hypothesis:

(H7): DI will be expected to present a salient mediating role between DI and SWB.

(H7a): Instructional Adaptations will show a positive significance between DI and SWB.

(H7b): Academic Progress Monitoring will show a positive significance between DI and SWB.

3. METHOD

A. Participants

A total of 216 international undergraduate students participated voluntarily, with the sample selected through convenience sampling. After gathering all questionnaires from July 2024 to November 2024, the reliability of the instrument was examined first. An index of 0.83 was obtained, which falls within the ideal range of 0.8 to 0.9, indicating that the instrument's reliability is satisfactory.

B. Measures

1) Differentiated Instruction (DI)

This study employed the DI Scale (DIS), developed and validated by Roy et al. (2013). The scale consists of 12 items that measure various aspects of differentiated instruction, including differentiation of instructional content, instructional process differentiation, academic progress monitoring, and teacher self-reflection on teaching practices.

2) Intercultural Adaptation (IA)

This questionnaire used a questionnaire developed by Ran and Shiao-Yun Chiang (2015) to specifically assess CFL learners' ability to adapt their learning across cultures. Ran and Shiao-Yun Chiang's (2015) questionnaire consisted of 25 items across five dimensions: Cultural Empathy, Open-mindedness, Emotional Stability, Social Initiative, and Chinese Proficiency.

3) Subjective Well-being (SWB)

The Subjective Well-Being Scale (SWBC) was consisted of 2 questionnaires developed by Diener et al. (1985), consists of 5 items and is scored using a five-point Likert scale and Steger et al. (2006), consists of 10 items and is also scored using a five-point Likert scale to test the Meaning in Life Questionnaire (MLQ). Higher scores reflect a greater level of perceived SWB. Over the past four decades, the two scales has been widely used and has demonstrated excellent convergent, discriminant, and IA validity.

4. RESULTS

A. Evaluations of the Reflective Measurement Models

Table 1 presents the factor loadings of each construct as derived from the reflective measurement models. Previous studies indicate that in the social sciences, FL exceeding 0.8 are generally considered acceptable, with values above 0.9 regarded as outstanding. Based on this standard, of the nine constructs examined, six achieved FL above the 0.8 threshold, while only Open-mindedness, Social Flexibility, and Meaning in Life failed to reach this level. Therefore, three dimensions failing to meet the standards were excluded for the next analysis.

Table 1 Results summary for the reflective measurement model

Construct	Indicators	Factor Loadings (FL)	Indicator Reliability (loadings ²) (IR)	Composite Reliability (CR)	Average variance extracted (AVE)
Cultural Empathy	CE1	0.882	0.727	0.911	0.772
	CE2	0.901	0.892		
	CE3	0.817	0.827		
	CE4	0.809	0.883		
	CE5	0.892	0.816		
Open-mindedness	OM1	0.676	0.701	0.776	0.468
	OM2	0.567	0.597		
	OM3	0.729	0.698		

Construct	Indicators	Factor Loadings (FL)	Indicator Reliability (loadings2) (IR)	Composite Reliability (CR)	Average variance extracted (AVE)
	OM4	0.694	0.654		
	OM5	0.586	0.599		
Emotional Stability	ES1	0.907	0.777	0.899	0.801
	ES2	0.896	0.802		
	ES3	0.912	0.856		
	ES4	0.889	0.718		
	ES5	0.902	0.887		
Social Flexibility	SF1	0.678	0.567	0.799	0.411
	SF2	0.701	0.674		
	SF3	0.664	0.591		
	SF4	0.541	0.696		
	SF5	0.576	0.700		
Chinese Proficiency	CP1	0.900	0.796	0.883	0.790
	CP2	0.846	0.902		
	CP3	0.887	0.887		
	CP4	0.815	0.892		
	CP5	0.902	0.747		
Instructional Adaptations	IA1	0.904	0.787	0.817	0.542
	IA2	0.856	0.904		
	IA3	0.833	0.923		
	IA4	0.838	0.768		
	IA5	0.911	0.781		
	IA6	0.879	0.709		
	IA7	0.812	0.721		
	IA8	0.876	0.892		
Academic Progress Monitoring	APM1	0.923	0.906	0.909	0.672
	APM2	0.951	0.928		
	APM3	0.855	0.857		
	APM4	0.886	0.914		
Satisfaction with Life	SWL1	0.856	0.799	0.882	0.518
	SW2	0.900	0.802		
	SW3	0.897	0.816		
	SW4	0.817	0.813		
	SW5	0.838	0.794		
Meaning in Life	MIL1	0.565	0.672	0.698	0.408
	ML2	0.786	0.511		
	ML3	0.784	0.702		
	ML4	0.692	0.707		
	ML5	0.711	0.587		
	ML6	0.410	0.512		
	ML7	0.744	0.690		
	ML8	0.734	0.600		
	ML9	0.563	0.674		
	ML10	0.442	0.701		

B. Discriminant Validity

As showed in Table 2, the reflective measurement models fully satisfy the criteria outlined above, providing strong evidence for the direct relationship between IA and SWB and for the mediating effect within this relationship. Figure 1 showed the SEM results.

Table 2 Results of Discriminant Validity

	Cultural Empathy	Emotional Stability	Chinese Proficiency	Instructional Adaptations	Academic Progress Monitoring	Satisfaction with Life
Cultural Empathy	0.878					
Emotional Stability	0.818	0.894				
Chinese Proficiency	0.365	0.675	0.888			
Instructional Adaptations	0.724	0.557	0.675	0.736		
Academic Progress Monitoring	-0.223	0.437	0.609	0.364	0.819	
Satisfaction with Life	0.563	-0.025	0.673	0.657	0.462	0.760

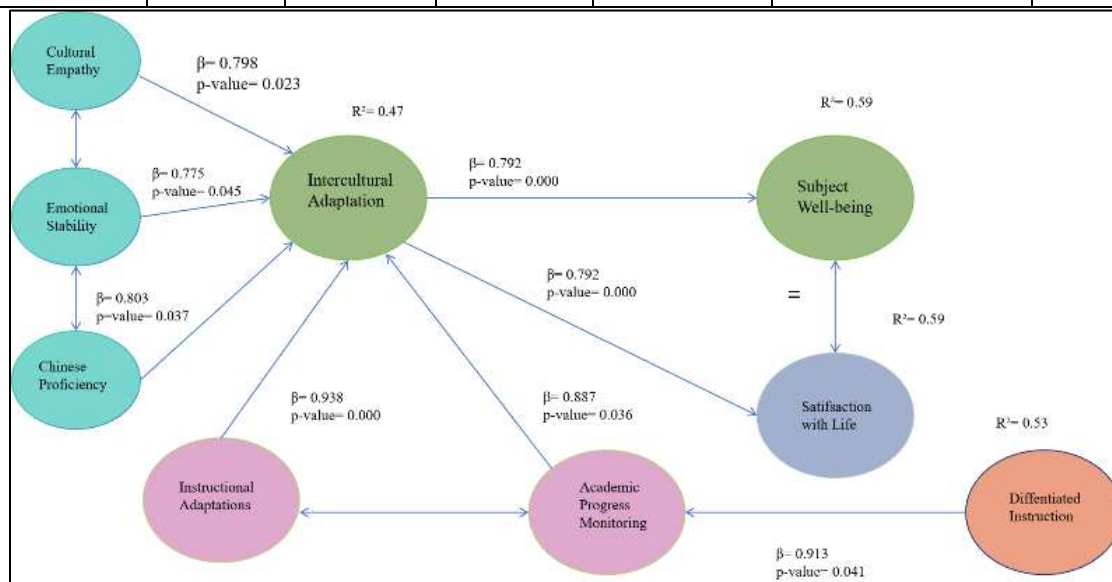


Figure 1 SEM result

5. DISCUSSION

In our study, Chinese Proficiency ($\beta = 0.803$) plays a more significant role in promoting SWB. For one thing, Chinese society does not simply view language as a tool for communication but also, to a certain extent, as a tool for evaluating one's identity. For another, the profound history of the Chinese language has endowed it with a rich variety of expressions, such as idioms, proverbs, and puns, which are still commonly used in daily conversation compared with those in other societies. With strong explanatory power, Cultural Empathy ($\beta = 0.798$) and Emotional Stability ($\beta = 0.075$) aligned with previous research regarding positive contribution to the promotion of SWB. According to the learner typology theory proposed by Coleman & Klapper (2004), one type of learner values observation, practice, and reflection, while the other type focuses on auditory, tactile, visual, and kinesthetic learning, which directly corresponds to Cultural Empathy and Emotional Stability. In contrast to previous studies, this research found that Open-mindedness (AVE = 0.468) and Social Flexibility (AVE = 0.411) did not significantly contribute to the promotion of SWB. Regarding its abstract concept, even under the guidance of a culturally inclusive mindset, open-mindedness may still not be sufficient to determine whether a person will practice culturally inclusive behaviors (Wilczewski, 2023). The

key difference between open-mindedness and empathy can be explained by the fact that the former is merely a rational attitude, while the latter encompasses potential empathic actions.

DI as a mediating variable has a significant effect on the relationship between IA and SWB. One possible primary reason for this can be credited to cultural values, an important link that distinguishes individuals from other ethnicities and connects them to bounded communities, unaffected by universal values or norms. While various cultures, including Confucian culture, subtly promote a value orientation towards individuals aligning with group expectations, the social expectations do not directly correlate with individual identification. This study is the first to confirm that DI ($R^2 = 0.53$) as a mediating variable can effectively moderate the relationship between IA and SWB. Instructional Adaptations build a bridge between IA and SWB, enabling learners to quickly establish academic self-esteem in a heterogeneous cultural environment, critically reflect on their behaviors, and subsequently create their own cultural products. Academic Progress Monitoring is another effective factor in mediating the relationship between IA and SWB, highlighting the teacher's role as a mentor in the learner's IA capability. The initial development of IA skills primarily stems from the learner's individual personality and keen observation of the new environment.

6. CONCLUSION

The first conclusion of this study is that Cultural Empathy, Emotional Stability, and Chinese Proficiency within IA have a strong indicative effect on Satisfaction with Life in the SWB of the CSL group. The second conclusion is that Instructional Adaptations and Academic Progress Monitoring in DI have a significant path-directing effect on the IA-SWB relationship. Learners in classrooms where DI is integrated into the IA development process show a more significant level of satisfaction with their SWB.

Based on the above two conclusions, this study provides two teaching recommendations for the future development of learners' IA and SWB abilities. The first recommendation is that teachers should view learners as independent output individuals rather than cultural recipients in the process of IA development. The second teaching recommendation is to introduce diversified teaching methods to assess the development of learners' IA abilities (Chang et al., 2016).

Although this study largely explains the relationship between IA, DI, and SWB, there are still three limitations. The first limitation is the insufficient sample size. Secondly, the study lacks an in-depth qualitative exploration of the text, which would provide deeper insights into the construction paths of the explicit factors in the model and the mechanisms of the implicit factors. Finally, the study mainly focuses on undergraduate students without detailed subgroup differentiation for preparatory students or graduate students.

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