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Research on the Antecedents of Flow Experience among High School EFL Learners: Culturally Responsive Teaching and Teacher Support

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Abstract: In recent years, flow, hailed as the 'ultimate state of well-being', has garnered increasing attention within the field of second language acquisition research. Yet amidst this burgeoning interest, in-depth exploration of flow remains notably scarce. One key question "what factors are influencing high school EFL learners' flow experience in English classrooms" seems to be less understood. Consequently, grounded in control-value theory and social support theory, and focusing on high school EFL learners in Lhasa, China, this research employs a quantitative research design to investigate the major antecedents contributing to their flow experience within English classrooms. Through structural equation modelling, the research reveals that: (1) culturally responsive teaching can significantly and positively influence the flow experience; (2) teacher support exerts a mediating effect between culturally responsive teaching and the flow experience.

1. Introduction

Well-being is the ultimate value of education[1]; while education bears a noble mission in enhancing the people's well-being[2]. As Sarah Merser once said "*we cannot meaningfully discuss language learning in cognitive terms without also reflecting on the role of emotions*"[3]. Since the very first publication explicitly and specifically introducing Positive Psychology (PP) into the domains of second language acquisition (SLA) and foreign language education (FLE) in 2012[4], a range of empirical studies has focused on and investigated positive emotions and some relatively new topics and constructs, such as flow, contributing to a 'positive turn' within these academic fields[5][6]. Flow is defined as a positive psychological state when an individual fully absorbs in an activity, in which the one feels simultaneously motivated and efficient in cognition, without self-consciousness but with a deep perception of control[7]. Flow experience occurs when the skills of a person are well balanced with the challenge of a task in high level[8]. As an important concept stemming from PP, flow provides deep insights in promoting individual's well-being[9], thereby is viewed as one of sources of well-being[10].

However, research on the flow of high school learners in English classrooms is sparse. Meanwhile, current studies overlook cultural specificity and have not echoed the flow of English learners in ethnic

regions in China. To this end, grounding in control-value theory and social support theory, focusing on high school English learners in Lhasa, adopting a quantitative research method based on SEM, the present research stives to explore and unveil the antecedents of their flow experience in the context characterized by unfavourable natural geographical environments, and linguistic and cultural diversity. To be more specific, this research will clarify the relationship among culturally responsive teaching, teacher support and flow experience.

2. Research Hypotheses

2.1 Culturally Responsive Teaching and Flow Experience

According to Gay, culturally responsive teaching refers to "use the cultural characteristics, experiences, and perspectives of ethnically diverse students as conduits for teaching them more effectively"[11]. It is evident that the core philosophy of culturally responsive teaching revolves around the relationship between teaching and culture, emphasising the empowering role of students' native cultures in their development. Teaching cannot exist independently of or transcend culture; rather, it provides support for students from a particular community based upon their cultural background. Culturally responsive teaching emphasises the significant influence of the mother culture in learners' development, including their social interactions, communication methods, cognitive approaches, learning motivations, and behavioural patterns[12]. As a result, when teaching English through students' own culture and experience, they get the chance to treasure the value of both English and their own culture, and are more willing to engage in the world of exploring English, ultimately, make both improvement in English academic achievement and development in their own competence[13]. Regarding to the implementation outcomes of culturally responsive teaching. For instance, Howard T. conducted a three-year teaching experiment using culturally responsive teaching as an intervention to improve academic performance among African American students. The results showed enhancements in students' academic achievement, graduation rates, and college enrollment rates[14]. Savage C. similarly documented positive impacts in a survey of 23 indigenous (Maoli) secondary schools implementing culturally responsive teaching. Indigenous students enthusiastically described their appreciation for teachers' culturally responsive teaching and increased engagement, expressing fondness for teachers acknowledging their identity as Maoli learners[15]. Furthermore, Dee T. S.'s longitudinal quantitative study on the effects of culturally responsive teaching also demonstrated positive impacts on the academic performance of minority and marginalized student groups[16].

Nevertheless, after literature review, it is found that there seems to be no published empirical research directly exploring the relationship between culturally responsive teaching and flow experience. While English instruction in Lhasa is filled with the culture of Zang nationality since English teachers basically incorporate their cultural elements, involving Tangka, Guozhuang Dance, Zanba, and among others, into classes to attract and engage students. Therefore, this research attempts to inquire whether culturally responsive teaching that is frequently used by English teachers can exert effect on learners' flow experience.

Research Hypothesis 1 (H1): Culturally responsive teaching significantly and positively influences flow experience.

2.2 The Mediating Effect of Teacher Support

Culturally responsive teaching is an educational philosophy that advocates equality and humanistic care[17], which requires teachers to gain a deeper understanding of students' cultural backgrounds, life experiences and ways of thinking. Simultaneously, it fosters greater attention to students with

distinctive cultural backgrounds or weaker language foundations, thereby providing more in-depth, suitable language learning guidance and emotional support. Meanwhile, culturally responsive educators must possess the ability of care and empathy, and reflect from students' standpoints in specific educational contexts[12]. This subsequently translates into concrete supportive actions, including respecting students' cultural identities, affirming the value of cultural differences between English and their native language, and providing appropriate and practical English learning scaffolding[18].

Culturally responsive teaching plays an important role in affecting teachers' cognition and behaviour in education, while teacher support, as a positive constitutional part of teachers' behaviour, may further influence learners' flow. For example, the research of Gong and Xu supports the predictive role of teacher support on flow experience in EFL classrooms[19]. Therefore, it can be assumed that teachers' culturally responsive teaching may influence learners' flow experience through the support they provide in English classes.

Research Hypothesis 2 (H2): Teacher support exerts a mediating effect between culturally responsive teaching and flow experience.

The relationships among culturally responsive teaching, teacher support and flow experience were drawn in Figure 1.

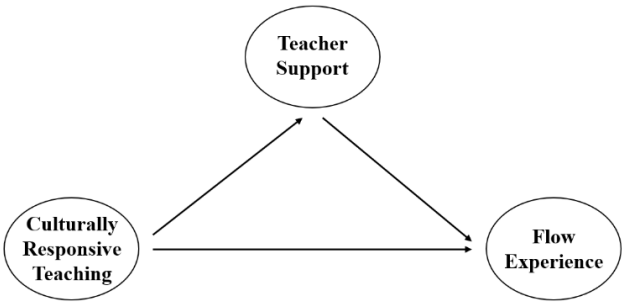

Figure 1: The hypothesized mediating model

3. Research Methods

3.1 Instruments

(1) Scale of Culturally Responsive Teaching

Student Measure of Culturally Responsive Teaching[20] was adopted to measure learner' perception of culturally responsive teaching. There are 3 dimensions and a total of 21 items in this scale. Response ratings range from 1 (strongly disagree) to 5 (strongly agree), with higher scores indicating that the student perceives more culturally responsive teaching. Items include: *Want students from different cultures to respect one another*, *Use examples from my culture when teaching*, and so on. In the current research, the Cronbach's alpha of this scale is .971.

(2) Scale of Teacher Support

Babad' *Students' Ratings of Teacher Behaviors*[21] was used to measure the teacher support learners perceived in their English classes. Two dimensions and a total of 9 items comprise this scale. Response ratings range from 1 (*strongly disagree*) to 7 (*strongly agree*), with higher scores indicating that the student perceives more teacher support. Items include: *Approaches especially to help me*, *Is warm and supportive to me*, and among others. In the current research, the Cronbach's alpha of this scale is .927.

(3) Scale of Flow Experience

Martine's *Short Flow Scale*[22] was applied to measure learners' perceptions of their flow

experience during English classes, which contains 9 items. Response ratings range from 1 (*strongly disagree*) to 7 (*strongly agree*), with higher scores indicating that the student experience more flow. Items include: *I feel I am competent enough to meet the high demands of the situation*, *I am completely focused on the task at hand*, etc. In the current research, the Cronbach's alpha of this scale is .924.

3.2 Distribution and Collection of Questionnaire

To obtain large scale data, this research surveyed several high schools in Lhasa by taking simple random sampling. The link of online questionnaire that had been sent to teachers who employed at different high schools in Lhasa was then sent to students. Students were required to complete the questionnaire on weekends. The process of data collection lasted around two months from the begin of November 2025 to the end of December 2025. In the end, 697 data were received. After removing questionnaires with missing values and patterned responses, 649 valid questionnaires were retained, resulting in an effective response rate of 93.1%. The effective data was then imported into SPSS 27 and AMOS 29 respectively for performing multiple analyses.

4. Research Results

4.1 Test for Common Method Bias

To examine whether there is severe common method bias in the data, the researcher employed Harman's single-factor method for testing. In SPSS 27, factor analysis was conducted on all items without rotation. The results showed that there were 7 factors with eigenvalues greater than 1, of which the first factors accounted for 40.431% of cumulative variance explained. Therefore, there is no severe common method bias in the data[23].

4.2 Correlation Analysis

The results of correlation analysis listing in Table 1 indicate that TS, CRT and FE are significantly and positively correlated. Specifically, CRT has a relatively strong correlation with FE, from which we can infer that the higher the CRT, the stronger the FE.

Table 1: Results of correlation analysis for the three variables

	TS	CRT	FE
TS	1		
CRT	.418**	1	
FE	.409**	.708**	1

Notes: (1) **represents $P<0.01$. (2) TS=Teacher Support, CRT=Culturally Responsive Teaching, FE=Flow Experience. The same with the followings.

4.3 Hypotheses Testing

As is shown in Table 2, all fit indexes of the hypothetical mediating model meet the reference standards (CMIN/*df*=1.005<3, RMSEA=0.043<0.08, RMR=0.003<0.08, GFI=0.947>0.9, NFI=0.962>0.9)[24], indicating the mediating model has a good alignment with the sample data and can reflect the sample data well.

Table 2: Goodness-of-Fit results of the mediating model

Indexes	Results	References
CMIN/*df*	1.005	<3.00
RMSEA	0.043	<0.08
RMR	0.003	
GFI	0.947	>0.90
NFI	0.962	

The mediating model was modelled and analysed in AMOS. Figure 2 exhibits the path relationships among the three variables. Firstly, CRT could significantly and positively predict the TS perceived by learners (β=0.44, P<0.001). Secondly, TS could significantly and positively predict FE (β=0.14, P<0.01), but the effect size is relatively small. Lastly, CRT could strongly significantly and positively predict FE (β=0.69, P<0.001), even in the situation of not controlling TS.

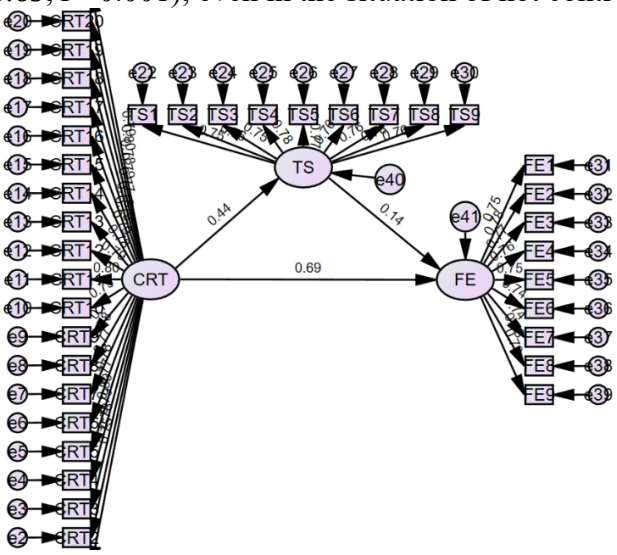

Figure 2: Structural equation model

It can be seen from the effect sizes of the mediating model (Table 3) that direct effect is significant and positive (β=0.901, P<0.001), and its 95% CI does not contain 0 (0.795, 1.018), demonstrating that H1 (Culturally responsive teaching significantly and positively influences flow experience) is supported. On the other hand, CRT has an indirect influence on FE through the mediation of TS since the mediating effect passes the significance test (β=0.081, P<0.001), and the 95% CI is not including 0 (0.040, 0.192), confirming that H2 (Teacher support exerts a mediating effect between culturally responsive teaching and flow experience) is supported. Therefore, the indirect path of "CRT → TS → FE" is supported and established. Meanwhile, the influence of the direct effect (91.75%) is much greater than the indirect effect (8.25%).

Table 3: Results of indirect effect, direct effect and total effect of the model

Parameter	Estimate	Lower	Upper	P	Effect Proportion
Indirect Effect	0.081	0.040	0.192	0.000	8.25%
Direct Effect	0.901	0.795	1.018	0.000	91.75%
Total Effect	0.982	0.885	1.095	0.000	

5. Discussion and Conclusion

5.1 Discussion

The current research demonstrates that culturally responsive teaching can significantly and positively influence flow experience, while teacher support partially mediates the influence of culturally responsive teaching on flow experience.

Pursuant to control-value theory, the appraisals of control and values are essential for the arousal of achievement emotions[25]. Specifically speaking, learners who highly appraise the value of their studies and feel in control of their learning process will develop positive achievement emotions and engage more actively in their studies[25][26]. In culturally responsive English teaching, when learners encounter their ethnic cultural elements within English classes or experiences closely tied to their daily lives, they, thus, expose to English within a familiar cultural context. This fosters an appreciation for the material's relevance[27], leading to a high appraisal of its values. Simultaneously, the presence of familiar elements within the learning content enhances learners' sense of control over language tasks. Ultimately, these will contribute to learners' positive achievement emotions. Positive achievement emotions are conducive to enhancing learners' cognitive flexibility and creativity, enabling greater focus on the task at hand, all of which serves as crucial antecedents for entering a state of flow[28].

Equally important, the results of SEM confirmed that the pathway "culturally responsive teaching → teacher support → flow experience" was empirically supported (β=0.081, P<0.001). This indicates that in English classes, teachers' implementation of culturally responsive teaching can not only directly induce learners' flow experience, but also trigger or sustain it by providing learners with support (including academic and emotional support) and scaffolding. As noted by Karimi & Fallah (2021), supportive behaviours and positive feedback from teachers can boost learners' confidence and self-efficacy, which reinforces their belief in their ability to succeed, thereby enhancing their sense of control[29]. An English classroom that implements culturally responsive teaching can significantly and positively enhance learners' perception of teacher support (β=0.901, P<0.001). This also confirms the earlier explanation: English teachers implementing culturally responsive teaching need a deep understanding of students' ethnic cultural backgrounds, life experiences, and ways of thinking, which in turn makes them more caring and enables them to provide support that is more profound, specific, and better aligned with students' needs. Concurrently, the establishment of this mediating model (β=0.982, P<0.001) offers a deeper explanation for how culturally responsive teaching can induce flow experience among learners within English education in Lhasa.

5.2 Conclusion

Based on questionnaire survey, this research empirically tested the two major antecedents of the flow experience among Chinese high school students by performing SEM. Specifically, the results of the present research reveals that culturally responsive teaching implementing by English teachers can significantly and positively influence the flow experience of high school EFL learners in Lhasa, China. Meanwhile, the support and scaffolding provided by teachers can mediate the influence of culturally responsive teaching on learners' flow experience in English classes. In terms of its significance, this research not only offers empirical evidence for the applicability of flow in educational contexts of ethnic minority, but also enriches and deepens the application of flow in the field of basic foreign language education in China. According to the research findings, it is advisable for English teachers to implement culturally responsive English teaching in instructional practice and strengthen support from the aspects of academic, and emotional and others.

Additionally, this research has several limitations. First, it employs a cross-sectional design using

static data, which limits the ability to accurately infer causal relationships among variables. Future research may consider using longitudinal designs to track the dynamic development of these variables. Second, the research examined only two antecedents, making it impossible to measure the impact of other potential factors on flow. Future research could incorporate additional classroom factors into the investigation.

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