

18 - Enjoyed or Bored? Learners' Experiences of Flow and Anti-Flow in Material Tasks Engagement

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Abstract

Flow provides learners with an optimal experience during English as a Foreign Language (EFL) material task engagement, while anti-flow can lead to boredom and hinder task completion. Despite its importance, the role of flow in single learning situations, such as materials use, remains underexplored. To address these gaps, this mixed-methods study employed Flow Theory to investigate the flow and anti-flow experiences of 287 non-English major Chinese college students during material task engagement. Quantitative data analyzed with SPSS and AMOS offered a holistic view, while semi-structured interviews with 8 participants provided in-depth qualitative insights through reflexive thematic analysis. Key findings include: (a) Approximately one-third of learners reported experiencing flow during material tasks, while others encountered anti-flow states such as boredom or anxiety. (b) Learners' perceptions of tasks significantly influenced flow and anti-flow experiences. (c) Teachers' academic and emotional material instruction and the classroom environment played pivotal roles in shaping these experiences. (d) These factors interact dynamically, forming a reciprocal network influencing learner engagement. These insights inform interventions in material design and pedagogy to foster enjoyable, engaging material learning experiences and enhance task completion.

Keywords: Flow theory, anti-flow, task engagement, EFL learners, material design, learner engagement, positive psychology, classroom environment, creativity in education, academic instruction.

1. Introduction

Flow, a state of optimal human experience characterized by complete absorption, focused attention, and heightened enjoyment during challenging activities (Csikszentmihalyi & Rathunde, 1993), has received increasing attention in task-based flow research (e.g., Czimmermann & Piniel, 2016; Egbert, 2003). However, what remains under-explored in the flow in English as Foreign Language (EFL) learning literature is the nature of flow with a single situational source factor, such as teaching materials, within the context of classroom instruction. Materials are crucial in classroom teaching and learning (Matsumoto, 2019). Despite the expansive literature on material development and evaluation, there needs to be more research on materials use within the realities of language classrooms (Guerrettaz et al., 2022). The few existing studies on materials use mainly focused on teachers rather than learners (e.g., Li et al. 2023). Moreover, most previous research on materials tends to focus on the development of the cognitive domain (knowledge, skills, analysis) without the emotional/affective domain (e.g., feelings, emotions, interest) being engaged. As learning cannot be explained by purely rational cognitive factors rather than affective variables, the latter also play a critical role in knowledge acquisition (Hidi, 2000). For learners, completing material tasks may generate anxiety and stress (Kusiak-Pisowacka, 2016). Hence, there is a call for investigating learners' affective experiences during materials use.

In response to this call, this study attempts to add a positive psychological perspective to the existing materials literature. Drawing on flow theory, this study conducted a mixed-methods study to investigate learners' materials use experiences, particularly during task engagement. The findings of this study could have important practical implications for materials design and instruction that aim to

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enhance learners' academic success and well-being by reducing anti-flow experiences and promoting enjoyment during materials use.

2. Literature review

2.1 Flow and anti-flow

Flow, as one of the foundational areas of positive psychology (Czimmermann & Piniel, 2016), is widely recognized as an optimal emotional state characterized by deep engagement in an activity, leading to enhanced performance (Csikszentmihalyi, 2008). Flow theory encompasses various interrelated variables, with the original components of flow identified as (a) merging action and awareness, (b) centring attention, (c) losing self-consciousness, (d) feeling in control, (e) experiencing a sense of coherence, and (f) engaging in autotelic or intrinsically motivating activities (Csikszentmihalyi, 2000).

Flow models are primarily based on the fundamental concept of balancing challenges and skills in an optimal manner, which has evolved into the Four Channel Flow Model. This model includes components such as interest, attention, control, and the balance between challenges and skills as indicators of flow experiences, as well as apathy, anxiety, and boredom as indicators of anti-flow experiences (Csikszentmihalyi, 2004). The Four Channel Flow Model helps identify the psychological state one experiences during task engagement based on the relationship between skills and challenges (Lambert et al., 2013). High skill and low challenge levels are associated with boredom, while low levels of both skills and challenges result in apathy. Anxiety can arise when challenges surpass one's skills, whereas the optimal combination of medium-high skills and challenges leads to the flow state. Within the framework of flow theory, there exists a "learning spiral" (Csikszentmihalyi, 2004) whereby the intrinsically rewarding experience of flow motivates individuals to strive for higher levels of performance (Csikszentmihályi, 2008).

Although flow has been argued to be a culturally universal phenomenon (Csikszentmihalyi, 1997b), the specific activities that elicit flow may vary across cultures and contexts (Egbert, 2003). For instance, interest, as a key component of flow, has been extensively studied and emphasized in the educational domain, with the recognition that interest, particularly situational interest, is dynamic and context-dependent (Dao & Sato, 2021). Flow and positive emotions are found to align well with learner characteristics such as learning motivations, self-efficacy, and gender (Dewaele & MacIntyre, 2016; Wu et al., 2024). While most previous research on flow has been conducted within Western contexts, there is a dearth of studies conducted in non-Western cultures, where cultural and linguistic differences may come into play (Nisbett et al., 2001). Moreover, existing analyses of flow research focused on online gamification (e.g., Zhang et al., 2022), there have been very few studies on flow's roles in EFL learning (Dewaele & MacIntyre, 2014).

2.2 Flow/anti-flow and task engagement in foreign language learning

In recent years, the area of EFL learning has been influenced by the emergence of positive psychology (PP), which focuses on the promotion of human flourishing and well-being (Seligman & Csikszentmihalyi, 2000; Wu et al., 2024). Positive psychologists often see humanistic psychology as one among several historical foundations leading to the creation of PP (Waterman, 2013). Given the potential benefits of flow, researchers started exploring the relationship between flow and task engagement. Engagement was "a state of heightened attention and involvement, in which participation is reflected not only in the cognitive dimension, but in social, behavioral, and affective dimensions as well" (Philp & Duchesne, 2016, p. 3). Informed by PP, engagement is vital for effective learning (Pan et al., 2023; Wu et al., 2024).

Flow has been suggested to occur during task engagement in foreign language learning (Schmidt et al., 1996). However, despite its potential significance, flow experiences have not been extensively studied in the context of foreign language education (Czimmermann & Piniel, 2016). Although scholars recently started to pay attention to flow-related studies (e.g., Dao & Sato 2021; Jin & Qin, 2024), the whole analysis of flow and anti-flow remains substantially lacking, as PP strives to achieve a balance between positive and negative emotions (Seligman & Csikszentmihalyi, 2000; Wu et al.,



2024). The few existing studies like Egbert (2003) examined the role of flow in foreign language learning and determined that four task conditions operate to facilitate flow: (a) a perceived balance of task challenge and participant skills, (b) opportunities for learners to focus their attention, (c) an intrinsic interest in doing the task, and (d) an ability to exercise control over the task process and outcome. Czimmermann and Piniel (2016) extended Egbert's (2003) study to investigate whether the general level and task-specific level of Hungarian EFL learners' classroom experiences can be characterized by peak moments of flow and to what extent. Their study indicates that learners' perception correlates with flow and anti-flow experiences. Aubrey (2016) added a cultural viewpoint to study flow and task engagement in language use when learners perform oral, collaborative tasks under inter-cultural and intra-cultural conditions.

Despite the significance of existing flow research in EFL learning, most of them are quasi-experimental studies, and applications of a mixed-methods approach are rare. What remains under-explored in the flow literature is the nature of flow with a single situational source factor, such as teaching materials, within the context of natural classroom instruction.

2.3 *Materials in language teaching*

Materials play a vital role in foreign language classrooms, with teachers often relying heavily on their use (Guerrettaz & Johnston, 2013). However, academic research needs to look more into the actual utilization of textbooks (Matsumoto, 2019). Most previous research on EFL materials tends to neglect the emotional/affective domain (e.g., feelings, emotions, interest) (Pham & Tin, 2022). The few existing materials use research often focused on teachers' material instruction (e.g., Li et al., 2023). It neglects the important issue of learners' completion and engagement with material tasks. Informed by flow theory, exploring how learners actually utilize materials can provide humanistic and valuable insights that inform the development process of these instructional materials (Pham & Tin, 2022; Tomlinson, 2012).

The existing materials use research suggests an ecological relationship among material stakeholders such as designers, teachers, and learners (Shu et al., 2023). Guerrettaz and Johnston (2013) proposed that materials serve as the primary source for curriculum organization, with teachers and learners being integral participants in classroom activities. The study of material is considered a problem-solving task that involves both internal factors, such as learners' learning style, and external factors, such as the content of textbooks or teachers' instructions (Beishuizen et al., 1994). To the best of our knowledge, few material studies conducted flow-related research. The few existing studies of material flow research like Pham and Tin (2022) explored learner interest in EFL teaching materials by comparing material activities and humanistic activities. However, such studies often neglect learners' task perceptions (Czimmermann & Piniel (2016), whole flow components and materials use ecological factors (Li et al., 2023; Shu et al., 2023). Moreover, there exists a warrant to investigate learners' flow and anti-flow experiences within a single material use environment, which were often based on specific unit topics (Beishuizen et al., 1994).

In summary, existing literature shows a positive link between flow and learners' task engagement, influenced by their characteristics and task perceptions. However, several gaps remain: (1) most flow studies focus on Western contexts, with limited research in Eastern settings; (2) flow research in EFL is scarce; (3) existing EFL flow studies mainly use quasi-experimental methods, lacking mixed-methods approaches; (4) the role of specific situational factors, like material use, in flow is unclear; (5) EFL material research mostly focuses on language, with limited exploration of material use; and (6) research on material use tends to focus on teachers, neglecting the learner's perspective and positive psychology.

Investigating a situated and nuanced understanding of learners' task engagement during materials use is crucial not only for improving our understanding of the complexity of the flow phenomenon. It also serves to ensure the pedagogical value of task-based material design and instruction. Moreover, it gives the existing research on materials use a humanistic layer. Therefore, within the Chinese context and adopting flow theory, this study aims to bridge these research gaps by employing a mixed-methods approach to address the following research questions:

RQ1: What are the learners' experiences of flow and anti-flow during materials task engagement?

RQ2: What are the antecedents of Chinese learners' flow and anti-flow experiences during materials task engagement?

3. Research design

This research employed a mixed-methods approach, utilizing questionnaires and interviews to gain a comprehensive and in-depth understanding of learners' flow and anti-flow experiences during EFL material task engagement.

3.1 Participants and settings

This study was based in mainland China, where English is treated as a foreign language in universities. Task-based language teaching (TBLT) is implemented by China's policy (Butler et al., 2018). Using convenience sampling (Dörnyei, 2007), we selected 287 non-English major college students from three technological universities in Xi'an, Shaanxi province as the sample for the quantitative study. There were 161 (56%) males and 126 (44%) females. Their age ranged from 18 to 23 years ($M=19.1$, $SD=0.91$). The grades of participants were from the first (58.53%) and second (41.72%) grades, corresponding to Chinese universities' English teaching spans. The English learning experiences of participants ranged from six to twelve years ($M=10.12$, $SD=0.99$). Most of them reported their English proficiency at an average level.

For the qualitative study, we interviewed eight participants (male = 4, female = 4; age range = 18-21, mean = 18.8; $SD = 0.9$) who had completed our questionnaire survey. Before the research, participants were required to carefully read the informed consent form, which detailed the purpose, procedure, and confidentiality of the study. Then we obtained from each participant a signed consent form and kept these forms on file confidentially. We made the participants feel at ease when being interviewed. For the study's trustworthiness, we drew upon our reflexivity as key to a successful audit trail in the data analysis. We kept a self-critical account of the research process (Braun & Clarke, 2021).

3.2 Instruments

3.2.1 Flow

The flow questionnaire was adapted from Czimmermann and Piniel (2016) and Egbert (2003). Krosnick and Presser (2010) argued that reverse-worded items are cognitively burdensome and result in measurement error and respondent fatigue. We removed the reversed items, leaving 13 flow items, including interest (3 items), control (4 items), attention (3 items), and challenge-skills balance (3 items). The participants responded to each item on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Higher total scores indicate higher flow levels. We adapted items for specific materials use situations. For example, one item was "Completing material tasks was exciting, I enjoyed the experience of task engagement". The Cronbach's alpha coefficient was 0.846 for the flow subscale.

3.2.2 Anti-flow

To measure participants' anti-flow experiences. We partially adapted scales from Czimmermann and Piniel (2016) and Egbert (2003), particularly for boredom (4 items) and apathy (4 items). The items of anxiety were adapted from Dewaele and MacIntyre (2014). After deleting reversed items, we got 3 anxiety items. We used a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher total scores indicate higher anti-flow levels. The items were adapted to the specific context of materials use. For instance, one item was "I was bored during material task completion". The Cronbach's alpha coefficient was 0.867 for the anti-flow subscale.

3.2.3 *Learners' task perception*

Learners' perception of material tasks was adapted from Czimmermann and Piniel (2016). It measured participants' perceived abilities levels required by the task, perceived task difficulty, and perceived level of creativity required by the task. The students were asked to respond by circling one of the five choices, i.e., 1 (not at all), 2 (to a certain extent), 3 (at an average level), 4 (rather), and 5 (absolutely).

The whole questionnaire also involved demographic information, including participants' gender, age, English language learning years, and self-reported level of English proficiency.

3.2.4. *Interview guideline questions*

The questions explored learners' flow and anti-flow experience in material task engagement. The researchers developed and refined the following questions based on quantitative results, and after piloting them with three students:

(1) Have you ever experienced flow or anti-flow during material task engagement?

(2) Describe one specific event in completing material tasks that you enjoyed/bored. Please describe your feelings in as much detail as possible.

(3) What factors do you think may influence your flow and anti-flow experiences during material task engagement?

(4) What are your suggestions for material designers regarding task design?

Follow-up questions were then based on learners' responses to gain a deeper understanding of the "How" and "Why" behind their flow or anti-flow experiences.

3.3 *Data collection*

This study employed a mixed-methods sequential explanatory design with two phases. In the first phase, quantitative data was collected through convenience sampling. All questionnaire items were translated into Chinese and underwent a rigorous review process by three experienced college teachers. Problematic items, such as those with confusing expressions or rarely used words, were rephrased, and the final translated version was agreed upon through discussions between the language experts and researchers. Participants' English teachers were invited to take part as assistants responsible for coordinating the administration of the instruments. These teachers were responsible for explaining the project's purpose to the students based on the instrument guide, distributing the questionnaires immediately after task completion, and collecting the students' answer scripts. Before data collection, the teachers received comprehensive training to ensure a thorough understanding of the project's objectives, the constructs being measured by the instruments, as well as the implementation procedures and requirements. Participants accessed the Wenjuanxing. Wenjuanxing was a tool to launch questionnaires through online social networking apps such as WeChat. Through Wenjuanxing, participants started completing the questionnaires within the allotted time. Then the researchers gathered all eligible questionnaires and extracted the data.

In the second phase, eight participants were selected from the abovementioned participants to conduct semi-structured interviews. To promote a comfortable environment for participants to express their thoughts, all interviews were conducted in Mandarin. Before the interviews, relevant concepts were explained to the participants. Guided by the research questions, the researchers asked the participants to provide detailed evidence regarding their experiences of flow and anti-flow during task completion. Specifically, researchers focused on understanding the reasons behind the participants' choices in the questionnaires. Participants were prompted to explore the elements that may influence their experiences of flow and anti-flow.

Throughout the study, we strictly adhered to research ethics. Consent forms were provided to every participant and reviewee, clearly explaining the voluntary nature of their participation and their ability to withdraw from the study at any time. To protect confidentiality, all participants' identities were anonymized and coded using alphanumeric symbols.

3.4 Data analysis

To answer RQ1, we used SPSS version 26.0 and AMOS 21.0 to gain a comprehensive view of learners’ flow and anti-flow experiences during material task engagement. Through employing Structural Equation Modelling (SEM) and functions such as descriptive statistics and correlation analysis, the researchers analysed the obtained data. First, the whole data was pre-processed to ensure the suitability of the data. The validity of the data was measured. Second, the construct validity and reliability indices of the scales were measured. Third, descriptive statistics was used to gain a holistic insight into learners’ flow and anti-flow experiences during material task engagement. Lastly, correlation analysis was used to examine the associations among learners’ task perceptions, flow experiences, and anti-flow experiences.

We used a bottom-up approach to answer RQ2 and obtain an in-depth insight into learners’ flow and anti-flow experiences. First, we recorded and transcribed the interviews. Second, we translated the original Chinese text into English with the help of two linguistic professors. Third, the transcribed and translated data from interviews was coded by NVivo 11. Fourth, we used reflexive thematic analysis (Braun & Clarke, 2021) to identify themes and patterns of meaning. Reflexive thematic analysis aims to identify and make sense of patterns of meaning across a dataset (ibid.), which aligns well with our qualitative study’s purpose of investigating “How” and “Why” behind learners’ flow and anti-flow experiences during material task engagement. We conducted qualitative data analysis in six recursive stages: familiarization, initial coding, searching for themes, reviewing themes, defining themes, and reporting (Braun & Clarke, 2021; Wu et al. 2024). For example, the data describing the awkwardness of participating in material interactive tasks in front of classmates were coded as “classmates,” serving as evidence supporting the theme of “classroom environment”.

Reflexivity is essential for maintaining transparency and rigor in qualitative research, especially in reflexive thematic analysis (Braun & Clarke, 2021). We addressed our positionality by acknowledging our prior experiences in research and teaching. We kept reflective throughout the research. We also bracketed ourselves and used audit trialing to avoid imposing our own views on the interviewees’ answers. We did our utmost to remain transparent throughout the whole data analysis. All those efforts ensured valid and reliable findings.

4. Results

4.1 The comprehensive analysis

4.1.1 Confirmatory factor analysis

A confirmatory factor analysis (CFA) was performed to measure the goodness-of-fit indices to ensure construct validity. Fig. 1 illustrates the validated CFA model for learners’ flow experiences scale by utilizing AMOS 21.0. Researchers should primarily look at several indicators such as the chi-square value, significance, and RMSEA to determine whether the model achieves an overall level of fitness (Hoyle, 2013). This study reported the CMIN/DF, RMSEA, GFI, and CFI to evaluate the model’s goodness of fit. Adopting Hu and Bentler’s (1999) criteria, the goodness of fit of the flow model was reported in Table 1, which indicates excellent goodness of fit for the learners’ flow model.

Likewise, we also evaluated the validity of the anti-flow model by employing the CFA. The validated CFA model for learners’ anti-flow experiences scale is illustrated in Fig. 2. Evaluated by the same criteria mentioned above, Table 2 shows the results of the goodness of fit of the anti-flow model. The data in Table 2 clearly show that learners’ anti-flow scale has a high acceptance level and robust validity.

Table 1 - The goodness of fit indices for learners’ flow

	CMIN/DF	RMSEA	CFI	GFI
Standard values	<3	<0.08	>0.9	>0.9
Revised model	2.396	0.70	0.910	0.930

Table 2 - The goodness of fit indices for learners' anti-flow

	CMIN/DF	RMSEA	CFI	GFI
Standard values	<3	<0.08	>0.9	>0.9
Revised model	2.215	0.65	0.956	0.945

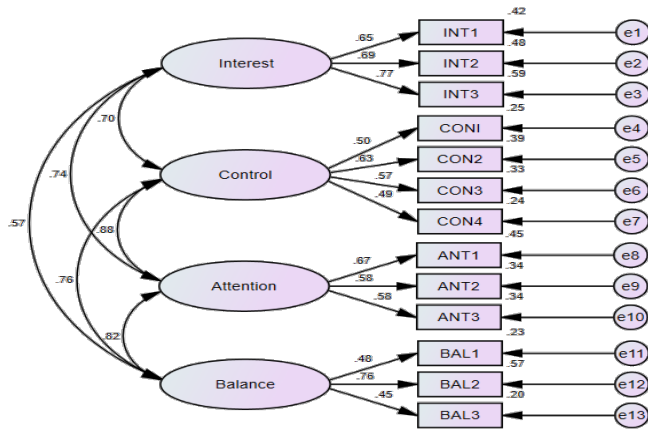


Figure 1. CFA model of learners' flow experiences during material task engagement.

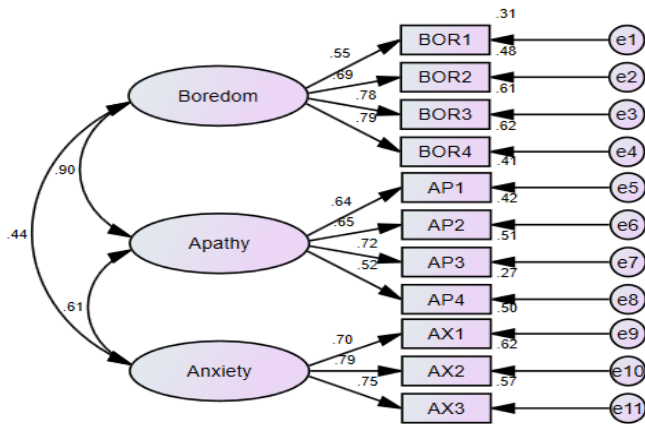


Figure 2. CFA model of learners' anti-flow experiences during material task engagement.

4.1.2 Descriptive statistics for learners' flow experiences

Descriptive statistics for students' flow experiences were summarized in Table 3. Following Egbert's (2003) guidelines, for 5-point Likert flow scales, participants with an average score of 3.5 or above are considered to have experienced flow. Our data indicate that 29% (N = 83) of the participants experienced flow during material task completion, while 71% (N = 204) did not have flow experiences.

Table 3 - Descriptive statistics of students' flow experiences

	N	Min	Max	Mean	SD
Total	287	1.73	4.67	3.28	0.49
Flow scores ≥ 3.5	83	3.53	4.67	3.87	0.32
Flow scores < 3.5	204	1.73	3.47	3.04	0.33

4.1.3 Descriptive statistics and correlations between flow, anti-flow, and their components

Table 4 presents the descriptive statistics and correlations between flow, anti-flow, and their respective components. We also conducted a comprehensive analysis of the components of flow and anti-flow. The results reveal significant positive correlations between flow and its components such

as interest, control, attention, and challenge-skill balance. Conversely, flow demonstrates significant negative correlations with boredom, apathy, and anxiety. On the other hand, anti-flow exhibits contrasting patterns of correlations. Notably, learners' interest and control emerge as the most influential factors in facilitating flow experiences. Moreover, the Pearson correlation analysis reveals a moderate positive relationship between challenge-skill balance and flow. This result is consistent with the significantly negative correlations observed between boredom, apathy, and flow.

Table 4 - Descriptive statistics and correlations between flow, anti-flow, and their components.

	Mean	SD	1	2	3	4	5	6	7	8	9
1. Flow	3.87	.32	-								
2. Anti-flow	2.85	.68	-.559**	-							
3. Interest	3.27	.74	.834**	-.444**	-						
4. Control	3.39	.69	.815**	-.427**	.537**	-					
5. Attention	3.63	.68	.782**	-.621**	.556**	.537**	-				
6. Challenge-skills balance	2.92	.27	.599**	-.209**	.330**	.331**	.340**	-			
7. Boredom	2.72	.79	-.602**	.844**	-.578**	-.419**	-.616**	-.183**	-		
8. Apathy	2.73	.77	-.524**	.883**	-.368**	-.425**	-.596**	-.223**	.695**	-	
9. State anxiety	3.17	.97	-.239**	.735**	-.133*	-.202**	-.308**	-.106	.364**	.474**	-

** P<.01 * P<.05

4.1.4 Correlations between task perceptions and experiences of flow and anti-flow and their components

Table 5 presents the Pearson correlation between learners' perception of tasks, flow, anti-flow, and their components. The results unveil a significant positive relationship between learners' perception of creativity and flow. The correlation values between creativity and the components of flow, listed in descending order, were as follows: interest, attention, control, and challenge-skills balance. Furthermore, learners' perception of creativity exhibits a negative correlation with anti-flow. One thing worth mentioning is that the required level of abilities exhibits a weak positive correlation with the flow, no significant correlation with challenge-skills balance, and a weak negative correlation with boredom. On the other hand, difficulty shows a weak negative correlation with challenge-skills balance, and weak positive correlations with boredom, apathy, and anxiety.

Table 5 - Correlations between task perceptions and experiences of flow and anti-flow and their components.

	Required level of abilities	Difficulty	Creativity
Flow	0.149*	-0.242**	0.454**
Interest	0.170**	-0.124*	0.467**
Control	0.125**	-0.173**	0.359**
Attention	0.155**	-0.219**	0.369**
Challenge-skills balance	-0.030	-0.272**	0.131*
Anti-flow	-0.071	0.231**	-0.341**
Boredom	-0.134*	0.140*	-0.414**
Apathy	-0.054	0.213**	-0.333**
State anxiety	0.020	0.129**	-0.081

** P<0.01 * P<0.05

4.2. The in-depth analysis of the antecedents

Reflexive thematic analysis revealed that learners' flow and anti-flow experiences during material task engagement were implicit emotional experiences and influenced the efficiency and quality of material task completion. Underpinning the core theme of "learners' flow and anti-flow experience in material task engagement" are the 2 main themes: (a) Teachers' academic or emotional material instruction, and (b) Classroom environment (Table 6).

Table 6 - Reflexive thematic analysis of learners' flow and anti-flow experiences during material task engagement.

Theme	Description	Subthemes
Teachers' academic or emotional material instruction	Teachers' academic or emotional support during material instruction helps learners' flow experiences for task engagement	Teachers' academic material instruction Teachers' emotional material instruction
Classroom environment	Building a positive and active classroom learning environment supports learners' flow experiences during material task engagement	Classmates Learning environment

4.2.1. Flow: the unknowing emotional experiences during material task engagement

The feature of flow experiences during material task engagement was described by participants as the unknowing situations which beyond their awareness. Most of the participants admitted that they had never heard of flow before the interview. After the flow-related conception was explained, they noted that their flow experiences during material task engagement were "unusual" and "unnoticed". Such statements echoed our quantitative findings that only a few proportions of participants experienced flow within the Chinese context.

I am never aware of the so-called flow situation during material task engagement. Sometimes I did forget the existence of time and spaces when I immersed myself in the task completion, but such moments were quite rare. (T3, Interview)

4.2.2 Theme 1: Teachers' academic/emotional material instruction

As teachers play a pivotal role in materials use (Li et al., 2023; Shu et al., 2023), our qualitative data indicated that teachers' academic or emotional material instruction were elements influencing learners' flow and anti-flow experiences during material task engagement.

Subtheme: Teachers' academic material instruction. Participants noted that teachers' timely and appropriate academic material instruction could enhance their flow experiences. As one student noted: "There is a substantial portion of tasks in teachers' material instruction that focus on linguistic points we have recently learned. Such review-oriented tasks enhance my sense of control over the material tasks". (T2, Interview) This statement suggests that teachers' inclusion of review tasks targeting recently acquired language knowledge can enhance learners' perceived control and, consequently, contribute to their flow experiences during task engagement.

However, teachers' academic material instruction may also trigger learners' anti-flow experiences during material task engagement. This phenomenon may be attributed to China's teacher-centered learning style, as explained by one student:

Most of the material tasks are teacher-directed in the classroom, with the right answers provided by the teachers regardless of whether our answers are correct or not. To be honest, these direct-given correct answers without students' engagement make the material tasks unchallenging. (T4, Interview)

Moreover, the lack of teachers' task selection led learners to experience anti-flow, because several material tasks were beyond learners' personal experiences. They felt a loss of control over the content of the task because they didn't know what to talk about. As one participant stated:

Take the task of sharing a personal story about cross-cultural communication, which is based on the topic of the material unit. The lack of studying or traveling abroad makes me feel that I lose control over the content of the task for I don't know what to talk about. (T5, Interview)

Also, a lack of self-regulated guiding and linguistic teaching resulted in unclear goals for learners. As one participant expressed, "In most cases, completing tasks from the materials felt more like a requirement imposed by the teacher rather than being driven by personal motivation" (T7, Interview).

Furthermore, some learners struggled to comprehend the questions posed in the materials, while teachers assumed they were simple and neglected to provide further explanations (T4, Interview).

Subtheme: Teachers' emotional material instruction. The analyses of the interview revealed that teachers' emotions about different tasks influence learners' flow experiences. As one participant stated:

We can sense teachers' emotions about different tasks. Teachers normally pay special attention to tasks centered around linguistic points in materials. However, as someone who easily forgets such information, this overemphasizing of recitation-oriented tasks makes me feel anxious. While those tasks aim to lead students to know the unit topic, teachers' emotions are usually happy and relaxed. It is their light emotions that make me feel comfortable and arouse my interest. (T8, Interview)

Furthermore, teachers' emotions about students' wrong answers impact learners' flow and anti-flow experiences. As one participant said:

"My anxiety towards material task engagement partially due to teachers' harsh comments when I get the wrong answer." (T6, Interview)

Teachers' harsh attitude toward tasks also impact learners' task perception, because "Anxiety makes me feel the tasks are too difficult to handle." (T6, Interview)

4.2.3 *Theme 2: Classroom environment*

Our qualitative data revealed that classmates and the learning environment composed the theme of the classroom environment.

Subtheme: Classmates. Our data revealed that the prevailing atmosphere of intense competition and utilitarian educational values (Wei & Johnstone, 2019) influenced learners' anxiety (Zhang et al., 2022). A participant from an academically excellent university expressed this emotion, stating:

"Although my English proficiency is not bad, many of my classmates have exceptional English skills, which makes me feel that others will outperform me". (T2, Interview)

Moreover, the lack of an English-speaking environment made students reluctant to speak English in front of their classmates for fear of embarrassment. (T8, Interview) Such a fear of embarrassment when answering teachers' questions in English hindered the enjoyment of flow during task completion.

Our interviews also revealed that some tasks that required classmate cooperation were too challenging for learners, which hindered their self-efficacy and engagement in task completion. Moreover, for learners with low English proficiency, the inability to retrieve appropriate vocabulary or grammar to express their ideas resulted in a loss of confidence in completing the tasks. Consequently, they tended to take a passive role as information collectors rather than active contributors. Furthermore, one participant stated that they were too familiar with their classmates to feel the need to actively cooperate to complete tasks. (T6, Interview)

Subtheme: Learning environment. First, learners' flow and anti-flow experiences during material task engagement were influenced by their majors. As mentioned earlier, all participants were from technology-oriented universities. Their focus was on completing scientific and technological tasks rather than memorizing linguistic elements such as vocabulary or grammar. The differing thinking patterns and learning styles between scientific and language learning contributed to their feelings of anxiety. These different thinking modes also impact their task perception, as they perceived English learning as challenging and hindered their interest in the subject. (T6, Interview)

Second, learners' sense of control was hindered by the limited instructional time. Due to the demanding teaching schedule, teachers often had to restrict classroom task engagement to ensure they could cover the necessary material within the allotted time. As a result, teachers were inclined to abruptly halt classroom tasks such as group discussions and provide students with reference answers, thereby impeding the students' engagement and flow experience. (T7, Interview)

Third, the large size of the classroom became a barrier to learners' flow experiences, because "teachers can't give personal feedback according to each student's learning features". (T3, Interview)

5. Discussion

By employing a mixed-methods approach, the research purposes of this study were twofold: first, to gain a holistic insight into learners' flow and anti-flow experiences during material task engagement by applying the quantitative method. Second, to obtain an in-depth understanding of the antecedents of learners' flow or anti-flow experiences by using the qualitative method. For theoretical implications, by adopting a mixed-methods approach, this study combined a holistic and in-depth view of flow studies and aimed to extend the understanding of flow investigated in previous studies (e.g., Egbert, 2003) into the area of material development research. Moreover, through the lens of flow theory, this study gave the existing materials use research a humanistic layer. For practical implications, the findings of this study endeavor to make learners' implicit flow experiences more explicit and shed light on material designers and practitioners regarding flow-related factors that can hinder or foster learners' material task engagement.

These results offer several points for discussion, which are illustrated as follows:

5.1 *The comprehensive analysis*

For Descriptive statistics for learners' flow experiences, compared to previous studies, our finding was higher than Egbert's (2003) result of 25% experiencing flow. However, it was considerably lower than Czimmermann and Piniel's (2016) finding, which reported 74% experiencing classroom flow and 71% experiencing task-specific flow.

Several factors may account for these differences. First, different questionnaire constructs yield different results. Researchers design various items to address diverse aspects leading to results variations. Second, the criteria for judging flow differ. While our questionnaire items primarily drew from Czimmermann and Piniel (2016), the standard of flow judgments was differentiated. Since Csikszentmihalyi (1997a) indicated that it was a very liberal definition of the flow experience, this study defined a flow score of 3.5 or higher as indicative of flow experience. This standard, like Egbert's (2003) study, was also comparable to that of previous research that captured above-average levels of skill and challenge, as well as a range of intensities crucial for understanding flow during textbook task completion. Third, task characteristics play a crucial role in the generation of flow experiences. In our study, according to interviewees, the material tasks were diverse, encompassing both in-class and post-class activities, as well as group and individual work. Classroom tasks, characterized by frequent interruptions from teachers and high levels of learners' participation, often hinder focused attention, making it more challenging to achieve a state of flow. Conversely, individual tasks provide students with greater control and are more conducive to generating flow (*ibid.*). In comparison to studies focusing solely on classroom tasks (e.g., Egbert, 2003), it is plausible that our findings of flow experiences were higher than Egbert's (2003) findings. Lastly, these results are consistent with previous reports indicating regional differences in foreign language enjoyment, with data from Asian respondents showing the lowest scores on language learning enjoyment (Dewaele & MacIntyre, 2016).

For the descriptive statistics and correlations between flow, anti-flow, and their components, the overall state of learners' anti-flow in our study was found to be higher than Czimmermann and Piniel's (2016) result, with a mean value of 2.85. There are two reasons that may account for these findings. First, the English proficiencies of selected participants are different. Compared with the participants with moderate English proficiency in this study, it is important to note that Czimmermann and Piniel (2016) conducted their study with advanced Hungarian EFL learners, whose academic achievement was positively associated with a high level of self-efficacy (Bai et al., 2019). Self-efficacy, as defined by Bandura (1986), refers to an individual's self-evaluation of their ability to successfully perform specific tasks based on their perceived skills. Advanced students with high self-efficacy are more likely to have greater control over specific tasks, making it easier for them to experience flow. Second, the gender proportions of selected participants are different. Czimmermann and Piniel (2016) had a higher proportion of female participants compared to males, which differs from the participants'

gender composition in our study. As Dewaele and MacIntyre (2016) indicated females tend to experience higher levels of language learning enjoyment than males, the higher proportion of males might lead to a lower rate of flow experiences.

Moreover, this study revealed that learners' interest and control emerge as the most influential factors in facilitating flow experiences. Such a finding underscores the importance for material designers to align tasks with learners' interests and offer greater flexibility in task styles for learners to choose from. Notably, there was a weak negative correlation between the state of anxiety and flow. This finding aligns with previous research indicating that anxiety does not strongly contribute to emotional engagement with tasks (Dao & Sato, 2021). Moreover, it supports the notion that the experience of flow acts as a protective factor against anxiety (Boudreau et al., 2018). Regarding the relationship between anti-flow and subconstructs, boredom and apathy demonstrate a strong positive correlation, while attention shows a strong negative correlation. These results emphasize the importance of teachers guiding learners to maintain focus on their tasks by creating situational interests that align with task completion (Dao & Sato, 2021).

For the Pearson correlation between learners' perception of tasks, flow, anti-flow, and their components. Our finding aligns with Czimmermann and Piniel's (2016) research, which suggests that language learners tend to find creative tasks more interesting and devote greater attention to such activities compared to tasks that do not require creativity. According to the broaden-and-build theory, positive emotions appear to broaden peoples' momentary thought-action repertoires and build their enduring personal resources (Fredrickson, 2001). Hence, the incorporation of novel tasks should be a priority for material designers.

One thing worth mentioning is that the required level of abilities exhibits a weak positive correlation with flow, no significant correlation with challenge-skills balance, and a weak negative correlation with boredom. Difficulty shows a weak negative correlation with challenge-skills balance, and weak positive correlations with boredom, apathy, and anxiety. These findings indicate that the experience of anti-flow is not solely determined by the actual difficulty level of the task but is also influenced by learners' perceptions. This aligns with Bandura's theory of self-efficacy (1986), which suggests that even if the task's difficulty is moderate, learners who perceive themselves as lacking competence are more likely to feel bored and apathetic. Therefore, during material task engagement, teachers must provide active and timely feedback, as well as impart suitable learning strategies to enhance learners' motivation.

5.2 The in-depth analysis of the antecedents

According to the Four Channel Flow Model, boredom and apathy both stem from a lack of challenge. Our qualitative data indicated that teacher-centered material instruction makes learners get the right answers too easily to be challenged. Additionally, the demanding teaching schedule was one of the reasons that made answers too easy to get for learners. This finding echoed Javaid et al.'s (2024) discovery that the heavy academic load hindered students' learning enjoyment. Hence, teachers must consider learners' sense of responsibility toward task completion during material instruction. This suggested that within a teacher-centered environment, teachers should avoid providing reference answers too readily and instead allow more autonomy for learners to select their topics and determine the timing. By doing so, learners are encouraged to engage in tasks that offer an appropriate level of challenge. This could foster their interest in the activity, as it aligned with the novelty and authenticity of the tasks presented in the materials (Egbert, 2003).

Learners' characteristics such as gender or major are related to their task perception, which aligns with the participants selected from universities exhibiting diverse academic performance. This finding echoed Wu et al.'s (2024) discovery that the profiles of learner engagement were associated with demographic characteristics. According to Individual Differences Theory, it is the kind of knowledge, skills, and traits that are associated with task performance and different from the kinds that are associated with contextual performance (Motowidlo et al., 2014). Given this perspective, EFL textbook designers need to consider incorporating tasks that align with learners' interests and concerns. Additionally, teachers should provide instruction and adapt tasks based on the specific context and individual characteristics of the students. Furthermore, teachers' positive emotions

would create a light atmosphere and alleviate learners' anxiety toward task engagement during materials use.

Furthermore, as noted by Dörnyei and Kormos (2000), participants in tasks who are socially familiar with each other, such as tasks that require a classmate's cooperation in this study, may not feel the need to actively participate. Moreover, the lack of awareness among students about effective interactional strategies could contribute to apathy in cooperative tasks. Thus, providing explicit instruction on employing interactional moves may be beneficial (Aubrey, 2016). Given the importance of goal clarity in fostering flow (Csikszentmihalyi, 1997b), teachers must guide learners in setting their own goals and provide clear explanations of task requirements.

Lastly, given the large size of the classroom, it becomes impractical for teachers to individually assess each learner's situation and give them suitable advice, which could otherwise help guide learners in responding to failures effectively and prevent negative emotions (Bandura, 1986). In this regard, reducing the number of students in a classroom should become a concern for school management.

5.3 The overall analysis

Using a mixed-methods approach, this study investigated learners' flow and anti-flow experiences during materials use. The quantitative data gave a holistic insight. The qualitative data shed light on the reasons behind the quantitative results and gave an in-depth insight. Combining the quantitative and qualitative results, three elements emerged as influencing factors of learners' flow and anti-flow experiences during material task engagement (Fig. 3). Within the social educational context, the in-depth analysis of qualitative data indicates that all these elements reciprocally interact with each other, contributing to the formation of a dynamic flow co-creation network. As Shu et al. (2023) and Li et al. (2023) observed, materials use, and material development are ecosystemic, this study echoed their findings and enriched existing research from a positive psychological perspective. Therefore, a collaborative mindset is necessary for material stakeholders such as designers, teachers, and students. The material stakeholders should timely exchange their knowledge, thoughts, and emotions to nurture a productive and enjoyable environment for material task engagement.

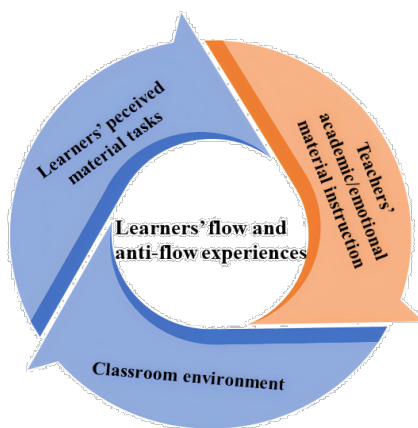


Figure 3. Elements influencing learners' flow and anti-flow experiences during material task engagement.

6. Conclusion and implications

Drawing upon Flow Theory, this study investigated learners' experiences of flow and anti-flow while engaging with material tasks. Employing a mixed-methods approach, this paper examines the relationships between learners' perceptions, flow, and anti-flow. The findings derived from the quantitative data demonstrate that within the context of materials use, nearly one-third of participants experience flow during task engagement. In terms of learners' perceptions, when students perceive tasks as creative and within their control, they exhibit heightened interest and motivation to complete material tasks. The qualitative data found that the appropriate teachers' academic and emotional material instruction, as well as a positive classroom environment, can

improve learners' material engagement flow experiences. All the quantitative and qualitative data gave a holistic and in-depth insight into learners' flow experiences and discovered the learners perceived material tasks, teachers' academic and emotional material instruction and the classroom environment were elements influencing learners' flow experiences during material task engagement.

Theoretically, this study contributes to the field of EFL learning in several original ways. First, it applies a mixed-methods approach to offer a holistic and in-depth perspective to understand learners' flow during task engagement, and methodologically enriched flow study. Second, it extends the existing flow study to a single situational source, particularly in material research. Third, the flow perspective provides a novel understanding of materials use research as well as the TBLT studies. Furthermore, this investigation adds valuable insights into the flow dynamics within Asian contexts and the processes that support foreign language learning. Lastly, this study explores the reasons behind the quantitative data, which provides valuable references for future flow intervention studies.

Practically, this study has several important implications for material development and EFL pedagogies. This study showed collaborative material development as an effective venue for learners' flow experiences during material task engagement. Material stakeholders should crystallize their expertise and knowledge to create a positive environment for learners' flow experiences. It contributes to promoting more motivated language instruction and assisting teachers in guiding learners to persevere in their material instructions. Based on the findings and discussions, several suggestions can be made:

For material designers, they should break away from the inherent and outdated style of task design. Tasks should be crafted not only with linguistic considerations but also from a flow perspective, aiming to cultivate learners' enjoyment of task engagement. One potential approach is to introduce novelty tasks that increase the sense of gamification in task completion. EFL materials should incorporate more learner-generated content, including tasks that reflect the learners' own lives and experiences (Lambert et al., 2017). Therefore, designers should consider tailoring tasks to suit the needs and preferences of different types of learners.

For teachers, they can benefit from training on flow-related concepts. They should also prioritize a student-centered approach to material instruction, as learner-generated tasks are more likely to increase students' personal interest in the tasks. This means teachers should provide suitable advice and guidance based on learners' characteristics and language proficiency. Moreover, it is beneficial for teachers to allocate in-class time for students to immerse themselves in task completion rather than hastily providing reference answers. This approach enhances learners' sense of responsibility and control over their tasks. Previous studies have also shown that discussing the tasks can support flow experiences (e.g., Egbert, 2003). Therefore, it is essential for teachers to clearly communicate the demands and goals of the tasks.

For learners, it is valuable to acquire knowledge related to flow, as it enables them to enhance their positive experiences during materials use. This knowledge also guides them in setting appropriate and challenging goals based on their individual learning features. Furthermore, armed with this knowledge, learners can adjust their learning strategies and effectively attribute failures.

This study has limitations. First, it is important to note that all the research subjects in this study were from the same province in China, which may limit the diversity of the sample. Universities in different regions have distinct curricula and student demographics, which could potentially influence the research outcomes. Therefore, future studies should include participants from various regions to obtain a more comprehensive understanding. Second, there are inherent limitations associated with self-reporting and cross-sectional analysis. These methods may not fully capture the breadth of perspectives that could be observed through third-party viewpoints. Future research could consider incorporating additional data collection techniques, such as direct classroom observations, to provide a more nuanced understanding of the flow phenomena.

References

- Aubrey, S. (2016). Inter-cultural contact and flow in a task-based Japanese EFL classroom. *Language Teaching Research*, 21(6), 717–734. <https://doi.org/10.1177/1362168816683563>
- Bai, B., Chao, G. C. N., & Wang, C. (2019). The relationship between social support, self-efficacy, and English language learning achievement in Hong Kong. *TESOL Quarterly*, 53(1), 208–221.
- Bandura, A. (1986). *Social foundations of thought and action*. Englewood Cliffs, NJ: Prentice-Hall.



- Beishuizen, J., Stoutjesdijk, E., & Van Putten, K. (1994). Studying textbooks: Effects of learning styles, study task, and instruction. *Learning and Instruction*, 4(2), 151–174.
- Boudreau, C., MacIntyre, P., & Dewaele, J.-M. (2018). Enjoyment and anxiety in second language communication: An idiodynamic approach. *Studies in Second Language Learning and Teaching*, 8(1), 149–170.
- Braun, V., & Clarke, V. (2021). One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology*, 18(3), 328–352.
- Butler, Y. G., Kang, K. I., Kim, H., & Liu, Y. (2018). ‘Tasks’ appearing in primary school textbooks. *ELT Journal*, 72(3), 285–295.
- Csikszentmihalyi, M. (2000). *Beyond boredom and anxiety*. San Francisco: Jossey-Bass.
- Csikszentmihalyi, M. (2004). *Good business: Leadership, flow, and the making of meaning*. New York: Penguin.
- Csikszentmihalyi, M. (2008). *Flow: The psychology of optimal experience* (2nd ed.). New York: Harper Perennial.
- Csikszentmihalyi, M. (1997a). Evolution and flow. *NAMTA Journal*, 22(2), 118–149.
- Csikszentmihalyi, M. (1997b). Flow and education. *NAMTA Journal*, 22(2), 2–35.
- Csikszentmihalyi, M., & Rathunde, K. (1993). The measurement of flow in everyday life: Toward a theory of emergent motivation. In J. E. Jacobs (Ed.), *Developmental perspectives on motivation* (pp. 57–98). Lincoln: University of Nebraska Press.
- Czimmermann, E., & Piniel, K. (2016). Advanced language learners’ experiences of flow in the Hungarian EFL classroom. In P. D. MacIntyre, T. Gregersen, & S. Mercer (Eds.), *Positive psychology in SLA* (pp. 193–214). Multilingual Matters.
- Dao, P., & Sato, M. (2021). Exploring fluctuations in the relationship between learners’ positive emotional engagement and their interactional behaviours. *Language Teaching Research*, 25(6), 972–994. <https://doi.org/10.1177/13621688211044238>
- Dewaele, J.-M., & MacIntyre, P. D. (2014). The two faces of Janus? Anxiety and enjoyment in the foreign language classroom. *Studies in Second Language Learning and Teaching*, 4(2), 237–274. <https://doi.org/10.14746/ssl.2014.4.2.5>
- Dewaele, J.-M., & MacIntyre, P. D. (2016). Foreign language enjoyment and foreign language classroom anxiety: The right and left feet of the language learner. In P. D. MacIntyre, T. Gregersen, & S. Mercer (Eds.), *Positive psychology in SLA* (pp. 215–236). Multilingual Matters.
- Dörnyei, Z. (2007). *Research methods in applied linguistics*. Oxford University Press.
- Dörnyei, Z., & Kormos, J. (2000). The role of individual and social variables in oral task performance. *Language Teaching Research*, 4(3), 275–300.
- Egbert, J. (2003). A study of flow theory in the foreign language classroom. *Modern Language Journal*, 87(4), 499–518. <https://doi.org/10.1111/1540-4781.00204>
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, 56(3), 218.
- Guerrettaz, A. M., & Johnston, B. (2013). Materials in the classroom ecology. *Modern Language Journal*, 97(3), 779–796. <https://doi.org/10.1111/j.1540-4781.2013.12027.x>
- Guerrettaz, A. M., Mathieu, C. S., Lee, S., & Berwick, A. (2022). Materials use in language classrooms: A research agenda. *Language Teaching*, 55(4), 547–564.
- Hidi, S. (2000). An interest researcher’s perspective: The effects of extrinsic and intrinsic factors on motivation. In C. Sansone, & J. M. Harackiewicz (Eds.), *Intrinsic and extrinsic motivation: The search for optimal motivation and performance* (pp. 309–339). San Diego: Academic Press.
- Hoyle, R. H. (2013). *Structural equation modeling: Concepts, issues, and applications*. Sage Publications, Inc.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- Javaid, Z. K., Chen, Z., & Ramzan, M. (2024). Assessing stress causing factors and language-related challenges among first-year students in higher institutions in Pakistan. *Acta Psychologica*, 248, 104356.
- Jin, Y., & Qin, L. (2024). Examining Chinese university students’ English speaking enjoyment: Scale development and validation. *System*, 124, 103382.
- Krosnick, J. A., & Presser, S. (2010). Question and questionnaire design. In J. D. Wright & P. V. Marsden (Eds.), *Handbook of survey research* (2nd ed., pp. 263–314). West Yorkshire: Emerald Group.
- Kusiak-Pisowacka, M. (2016). How to test for the best: Implementing positive psychology in foreign language testing. In D. Gabrys-Barker & D. Galajda (Eds.), *Positive psychology perspectives on foreign language learning and teaching* (pp. 289–306). Cham: Springer.
- Lambert, C., Philp, J., & Nakamura, S. (2017). Learner-generated content and engagement in second language task performance. *Language Teaching Research*, 21(6), 665–680.
- Lambert, J., Chapman, J., & Lurie, D. (2013). Challenges to the four-channel model of flow: Primary assumptions of flow support the moderate challenging control channel. *The Journal of Positive Psychology*, 8(5), 395–403. <https://doi.org/10.1080/17439760.2013.809138>
- Li, J., Wu, Y., & Gao, X. A. (2023). Language teachers’ engagement with ideological representations as materials designers. *System*, 117, 103121.
- Matsumoto, Y. (2010). Material moments: Teacher and student use of materials in multilingual writing classroom interactions. *Modern Language Journal*, 103(1), 179–204. <https://doi.org/10.1111/modl.12547>
- Motowidlo, S. J., Borman, W. C., & Schmit, M. J. (2014). A theory of individual differences in task and contextual performance. In *Organizational citizenship behavior and contextual performance* (pp. 71–83). Psychology Press.
- Nisbett, R. E., Peng, K., Choi, I., & Norenzayan, A. (2001). Culture and systems of thought: Holistic versus analytic cognition. *Psychological Review*, 108(2), 291.

- Pan, Z., Wang, Y., & Derakhshan, A. (2023).** Unpacking Chinese EFL students' academic engagement and psychological well-being: The roles of language teachers' affective scaffolding. *Journal of Psycholinguistic Research*, 52, 1799–1819. <https://doi.org/10.1007/s10936-023-09974-z>
- Pham, L. N., & Tin, T. B. (2022).** Exploring learner interest in relation to humanistic language teaching materials: A case from Vietnam. *System*, 105, 102731.
- Philp, J., & Duchesne, S. (2016).** Exploring engagement in tasks in the language classroom. *Annual Review of Applied Linguistics*, 36, 50–72.
- Seligman, M. E., & Csikszentmihalyi, M. (2000).** Positive psychology: An introduction. *American Psychologist*, 55, 5–14.
- Schmidt, R., Boraie, D., & Kassabgy, O. (1996).** Foreign language motivation: Internal structure and external connections. In R. Oxford (Ed.), *Language learning motivation: Pathways to the new century* (pp. 9–70). Honolulu, HI: University of Hawaii.
- Shu, D., Yang, S., & Sato, M. (2023).** Cultivating a new ecosystem in English language teaching: A focus on researchers in a textbook development project. *The Modern Language Journal*. <https://doi.org/10.1111/modl.12847>
- Tomlinson, B. (2012).** Materials development for language learning and teaching. *Language Teaching*, 45(2), 143–179.
- Waterman, A. S. (2013).** The humanistic psychology–positive psychology divide: Contrasts in philosophical foundations. *American Psychologist*, 68(3), 124–133. <https://doi.org/10.1037/a0032168>
- Wei, Y., & Johnstone, C. (2019).** Examining the race for world-class universities in China: A culture script analysis. *Higher Education*, 79(3), 553–567. <https://doi.org/10.1007/s10734-019-00423-2>
- Wu, H., Zeng, Y., & Fan, Z. (2024).** Unveiling Chinese senior high school EFL students' burnout and engagement: Profiles and antecedents. *Acta Psychologica*, 243, 104153.
- Zhang, Y., Liang, Q., & Wang, F. (2022).** Influence of competition-outcome feedback in video games on players' flow experience. *Current Psychology*, 42(21), 17583–17594. <https://doi.org/10.1007/s12144-022-02935-0>