

# UNRAVELING LEARNER ENGAGEMENT: INVESTIGATING THE EFFECTS OF TASK COMPLEXITY AND PROFICIENCY PAIRING IN TASK-BASED PEER INTERACTION

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**Abstract** – The concept of learner engagement, originating from educational psychology, is widely recognized as a fundamental condition for effective learning. In the context of second language learning within task-based language teaching, learner engagement holds particular significance. However, existing studies have predominantly focused on examining a single dimension of learner engagement, primarily emphasizing the cognitive aspect, while neglecting the exploration of engagement from a comprehensive, multi-dimensional perspective. Based on a comprehensive analysis of the research results of pedagogy and second language acquisition, a multidimensional learner engagement model including cognitive, emotional and social perspectives has been proposed. Task complexity and proficiency have been shown to impact learners' engagement in task-based peer interaction at cognitive, emotional, and social levels. But there is limited consensus among findings of those researches. In terms of task-based peer interaction the interaction effects between manipulated task complexity and interlocutors' proficiency, which have a significant implication for classroom teaching, should be explored. Drawing upon Socio-cognitive theory, this study adopts a multidimensional approach to put forward a conceptual framework for investigating the effect of task complexity and proficiency pairing on learner engagement, which provides a more holistic understanding of learner engagement in task-based peer interaction. The findings of this paper may have implications for instructional design, curriculum development, and learner support strategies, ultimately enhancing learner engagement and promoting effective learning outcomes.

**Keywords** – learner engagement, peer task-based interaction, task complexity, proficiency pairing, interlocutor proficiency

## I. INTRODUCTION

Peer interaction involves learners working together to complete communicative tasks in the classroom, through cooperative learning, collaborative learning, peer tutoring, and other forms of peer support (Philp et al., 2013). Previous studies have demonstrated that peer interaction offers learners opportunities to practice language use, discuss language form, provide and receive feedback, and/or engage in collaborative learning (Sato & Ballinger, 2016), and to develop second language knowledge and skills (Swain, M., & Watanabe, Y., 2013). These findings

highlight the important role that peer interaction plays in second language development, which is supported by various theoretical perspectives, including cognitive interaction theory and sociocultural theory (Sato & Ballinger, 2016). The implementation of task-based language teaching (Task-based Language Teaching) has further promoted the development of peer interaction in the classroom. In task-based language teaching, teachers design meaning-centered real tasks or teaching tasks that need to be completed by students, so that students can rely on their own target language resources through participation, cooperation, interaction and communication.

Many studies have confirmed that the learners matched in pairs or groups simply does not guarantee successful peer interaction, nor does it guarantee that their second language proficiency will be improved in the process of interaction. In peer interaction, the important issues that should be paid attention to are the extent to which learners are involved in peer interaction tasks and the factors that affect learners' participation. In recent years, more and more second language researchers begin to pay attention to learner engagement (Aubert, 2022; Baralt, et al., 2016; Dao, 2021; Lambert, et al., 2017; Philp Duchesne, 2016; Svalberg, 2009; Sang Y., & P Hiver, 2021). Relevant pedagogical studies have confirmed that "learner engagement" is a multi-dimensional construct, which can effectively predict students' academic achievement (Fredricks et al, 2004; Wigfield, A., & Guthrie, J. T., 2000) and plays a key role in students' learning achievement. Therefore, it can be said that the participation of learners is a necessary condition for any learning, including second language learning.

## II. PROBLEM STATEMENT

The concept of "Learner engagement" originates from educational psychology and is regarded as a key condition for any learning. It is also an important condition for second language learning in task-based language teaching. In pedagogical literature, learner engagement is a multifaceted or multidimensional construct, which refers to a state of high attention and participation of learners; participation is not only manifested at the cognitive level, but also socially, behavioural and emotional levels (Philp & Duchesne, 2016). In the field of applied linguistics, although researchers agree that these dimensions of engagement are very important for classroom second language learning in task-based language teaching, the previous studies have generally focused on a single dimension, especially on the

cognitive dimension and few studies have examined learner engagement from a multi-dimensional perspective. For example, second language acquisition researchers believe that it is necessary for second language learners to "pay attention" to the correlation between language form and meaning (Gass, 2003; Leow, 2015; Schmidt, 2001), but "attention" only involves one dimension of engagement that is, cognitive level (Philp & Duchesne, 2016). Researchers ignore other aspects of learner engagement, as do studies on task-based peer interaction. Peer interaction refers to the situation in which learners' complete communicative tasks together in the classroom environment, including cooperative learning, collaborative learning, peer guidance and other forms of help from peers. Undoubtedly, learners' engagement in peer interaction plays a key role in their second language learning in the classroom. Then how learner engagement is manifested and what factors will affect learner engagement are all important issues to be explored in peer interaction research.

### III. LITERATURAE REVIEW

#### *Understanding learner engagement*

The concept of engagement comes from educational psychology, which refers to the degree to which students actively participate in learning activities (Reeve, 2012). When students devote themselves to learning at their best, they will actively participate in the task, keep thinking and enjoy the learning process. On the contrary, if there is no investment in learning, the final result is not satisfactory, and there may be problems such as dropout or academic failure. Therefore, a large number of studies have been carried out in the field of educational psychology around the concept of learner input (Christenson et al., 2012a; Fredricks et al., 2004; Skinner et al., 2009). Although the importance of learner engagement has been generally recognized, there are different views on which dimensions are included. Some scholars have proposed a two-dimensional engagement model (Finn, 1989; Marks, 2000) including behaviour and emotion. Some scholars have proposed three-dimensional model (Fredricks et al., 2004). Among them, the three-dimensional model proposed by Fredricks and other researchers on the basis of literature review has been recognized by many researchers and widely used in empirical research. The three dimensions of this model include behavioural engagement (e.g., attention, effort, persistence, etc.), emotional engagement (e.g., interest, enthusiasm, anger, anxiety, etc.) and cognitive engagement (e.g., the use of learning strategies and positive self-regulation). Later, some scholars added a fourth dimension based on the three-dimensional model of Fredricks and other researchers. For example, Appleton et al. (2006) added the dimension of "academic engagement", which refers to the time students spent on tasks, credits and the completion of homework; Reeve & Tseng (2011) proposed to add the dimension of "agentic engagement", which refers to "students' constructive contribution to the teaching guidance they receive". Thus, it can be seen that learner engagement is a multi-dimensional construct, which integrates many aspects such as students' behaviour,

cognitive status and experience, which can be used as an important reference for learners in the field of second language teaching.

In the second language acquisition literature, Storch (2008) first defined engagement as the quality of learners' metalinguistic discourse, and divided it into two types: elaborate and limited. The former refers to learners engaging in extensive discussion about language issues, while the latter refers to one learner making language modification suggestions and another learner merely acknowledging or repeating them without providing a response. Storch (2008) confines "engagement" only to the cognitive concept of metalinguistic discourse, thereby rendering the operationalization of language engagement feasible through the quantity of language-related episodes. Svalberg (2009) acknowledges the complexity of the engagement concept and points out that although Storch's (2008) differentiation and delineation of learner engagement with language-related episodes is beneficial, it also has its limitations because it restricts engagement to metalinguistic discourse and overlooks other dimensions beyond cognition. Therefore, she introduces the concept of "Engagement with Language" (EWL) (Svalberg, 2009), defining it as a cognitive, emotional, and social state or process in which learners are active agents, with language serving as both the object of learning and a means of communication.

Based on a comprehensive analysis of researchers on education and second language acquisition, two recent prominent multidimensional models of engagement have been proposed: task engagement and learner engagement. Philp and Duchesne (2016) specifically proposed a model of task engagement which defined engagement as a state of heightened attention and involvement, which manifests in four distinctive but interdependent dimensions: behavioural, cognitive, emotional and social. Behavioural engagement is the amount of speech learners produce during interaction measured through turns and words. Cognitive engagement was the learners' focus on the language such as learners discussing language rules. Emotional engagement which was described at two levels: school and class/task activities. For the class/task level, emotional engagement referred to learners' feelings of connection with peers. With regard to social engagement, it pointed that socially engagement learners show reciprocity and mutuality in their interaction as reflected in their behaviour (e.g., listen and draw on each other's expertise and ideas and provide feedback). Van Phung Dao (2017), based EWL (Svedberg, 2009) and Task Engagement (Philp & Duchesne, 2016), described learner engagement is learners' involvement in a task, which is comprised of three sub-components: cognitive, emotional and social, but behavioural engagement is not included. Behavioural engagement' operationalization seems to overlap with cognitive and social engagement.

#### *Learner engagement in task-based peer interaction*

Learner engagement has been extensively examined in educational studies, including research on technology-enhanced second language (L2) learning (Lee, 2020; Lenkaitis, 2020). However, there has been relatively little exploration of learner engagement specifically in task-

based peer interaction. Recently, a few studies have emerged that focus on learner engagement, following the conceptualization and models of EWL (Engagement with Learning), task engagement, and learner engagement. These emerging studies investigate how various factors related to task design (e.g., topic familiarity, learner-generated/teacher-generated task content, task goal orientation) influence learner engagement in task-based peer interaction (Aubrey et al., 2020; Dao, 2019; Dao & McDonough, 2018; Lambert & Zhang, 2019; Lambert, Philp, & Nakamura, 2017; Qiu, 2022; Qiu & Lo, 2017). The findings from this limited body of research not only indicate that different task design factors can have varying effects on learner engagement but also suggest that increasing task complexity does not always lead to higher engagement among L2 learners. For example, while task repetition can enhance L2 oral performance (Bui et al., 2019), learners may become bored when repeating tasks with familiar topics (Qiu & Lo, 2017). Furthermore, Qiu and Cheng (2021) found that EFL learners exhibited greater behavioural, cognitive, and social engagement during storytelling tasks that were less complex compared to opinion exchange tasks that were more complex. Similarly, Baralt et al. (2016) analyzed the performance of 40 intermediate-level Spanish learners who completed tasks of varying complexity (complex tasks and simple tasks) either face-to-face or online. The research indicated that in face-to-face interactive environments, especially when completing more complex tasks, learners demonstrated higher levels of cognitive engagement (e.g., attention to language forms and reflection), social engagement (e.g., supportive interactions), and emotional engagement (e.g., positive emotions). However, in online interactions, learners exhibited reduced or complete lack of engagement in these three aspects. The research argued that the absence of social and emotional engagement is a primary reason that affects learners' cognitive engagement with language forms. Additionally, the researcher emphasized that although online language classrooms are prevalent, they may not provide satisfactory learning conditions from theoretical perspectives such as sociocultural theory and the interaction hypothesis. To maximize the effectiveness of online language courses, educators should train learners on how to effectively engage in interactions in online environments, particularly by enhancing social and emotional engagement. In another study, Qiu (2022) investigated the impact of task complexity (operationalized as  $\pm$  pre-task planning time and  $\pm$  intentional reasoning demand) and communication modes (synchronous video-based computer-mediated communication, SvCMC, versus face-to-face real-time communication, FTF) on L2 learners' engagement in interactive oral tasks. The findings revealed that both FTF and SvCMC learners exhibited higher cognitive engagement in complex tasks, but lower engagement in these tasks. Regarding social engagement, no significant differences were found between less complex and more complex tasks. Task complexity influenced the behavioural and cognitive engagement of FTF and SvCMC learners, with SvCMC learners being more behaviourally engaged in task performance compared to their FTF peers. However, the results for cognitive

engagement were mixed. Both FTF and SvCMC learners reported mixed affective responses across all task conditions. These findings suggest the need to revisit the Cognition Hypothesis and re-examine the impact of different task design factors from the perspective of learner engagement.

However, in L2 classes with learners of mixed proficiency levels, an important question remains unanswered: Do learners of varying proficiency levels benefit equally from engaging in peer interaction? (Zabihi, R., & Ghahramanzadeh, B., 2022). Most studies conducted so far on the impact of different levels of interlocutor L2 proficiency on paired task performance (e.g., Basterrechea & Gallardo-del-Puerto, 2020; Niu, Jiang, & Deng, 2018; Watanabe & Swain, 2007) have primarily focused on the quantity (i.e., frequency) and resolution of language-related episodes (LREs). LREs refer to parts of a dialogue in which learners reflect on, question, or correct their language use (Swain & Lapkin, 2001). These studies have often neglected the extent to which individual learners in any given pair actually engage with language and the task itself. However, a few recent studies have examined learners' engagement from cognitive, emotional, and social dimensions, which are influenced by the proficiency of their interlocutors.

Dao, P., & McDonough, K. (2018) explored the effect of proficiency on a range of cognitive, social, and emotional features of interaction through the lens of engagement. Fifteen core EFL learners interacted with peers of higher and lower proficiency to complete picture sequencing tasks. The researchers compared the degree of engagement exhibited by the core learners when interacting with partners of lower and higher proficiency levels. The results revealed that the core learners displayed greater cognitive and social engagement and reported higher emotional engagement when interacting with higher proficiency partners. Similarly, Zabihi, R., & Ghahramanzadeh, B. (2022) compared three groups of learners with different proficiency levels collaborating on a composition task. They found that high proficiency learners demonstrated higher cognitive and social engagement when paired with similar, highly proficient partners, while lower proficiency learners reported greater affective engagement when working with other low proficiency partners.

To summarize, task complexity and proficiency have been shown to impact learners' engagement in task-based peer interaction at cognitive, emotional, and social levels. But there is limited consensus among findings of those researches. In terms of task-based peer interaction the interaction effects between manipulated task complexity and interlocutors' proficiency, which have a significant implication for classroom teaching, should be explored (Xu Jingfen, 2020).

#### ***Learner engagement from the perspective of social-cognitive theory***

Over the years, most of the studies on second language learning, especially in classroom learning, are based on a cognitive perspective, ignoring the environmental or individual differences of language learning. With the deepening of people's understanding of



language learning, more and more researchers have criticized it. They believe that cognitive theory only reflects the complexity of language acquisition (Palincsar, 1998); knowledge does not belong to learners alone, knowledge is also an asset of the social environment, is the interface between people and social environment (Foster & Ohta, 2005). Therefore, they advocate the study of language learning from a socio-cultural perspective. According to sociocultural theory, cognition and knowledge themselves have a social nature because they are constructed through dialogue (Lantolf, 2012). Under the advocacy of some sociocultural researchers, there has been a significant increase in the number of studies carried out from the perspective of sociocultural theory (Feryok, 2017). However, as pointed out by Batstone (2010), the studies of these two perspectives either emphasize cognition or focus on society, and both have some limitations. Sato & Ballinger (2016) further pointed out that both perspectives have some limitations in data analysis and interpretation of results. Moreover, if the two research paradigms are separated, "there will eventually be problems when putting the findings of second language research into practice", because "educators are not concerned about the existence of different theoretical research methods for a certain problem, what they need is a scientifically demonstrated and feasible teaching method" (Sato & Ballinger, 2012). In addition, in order to fully understand language learning and development, we must realize that language learning and development is a complex process in which social factors and cognitive elements are related to each other. Therefore, in order to fully explore the complexity of language learning, researchers should strive to combine social and cognitive perspectives instead of debating the advantages and disadvantages of the two perspectives (Atkinson, 2002).

Based on the conceptual framework in second language learning, learner engagement in peer interaction is a multidimensional construct that includes behavioural, cognitive, emotional and social dimensions, and that the language development of second language learners depends to a large extent on their active engagement in these dimensions. Consistent with the view of social cognition, learner engagement is not only related to learners' cognitive processing, but also affected by social factors in the environment. As some researchers have pointed out, engagement reflects the interaction between the individual and the environment (Fredricks et al. 2004). In other words, individual engagement in learning is closely related to the environment in which they live. As far as classroom learning is concerned, learning engagement arises from the interaction between the individual and the classroom situation. Therefore, classroom peers, teachers, classroom task design, some classroom practices and social culture in the classroom can all create opportunities for students' engagement.

#### IV. THE STUDY OF TASK COMPLEXITY AND PROFICIENCY PAIRING ON LEARNER ENGAGEMENT

Based on the social-cognitive theory, the author

believes that second language learning involves not only individual internal processing of information but also the result of interaction between individuals and their surrounding environment. It is necessary to examine learners' engagement in task-based peer interaction from a socio-cognitive perspective, which considers both learners' internal cognition and the influence of social environmental factors on engagement. Learners' language learning and development are the result of multidimensional interactive development involving cognition, behaviour, emotion, and social dimensions (Geeslin & Long, 2014; Larson-Freeman, 2013). No single dimension can explain the complexity of second language learning and development.

Specifically, drawing on the conceptual framework of learner engagement (Van Phung Dao, 2017), we place learners in three different paired environments (high language proficiency and high language proficiency peers, high language proficiency and low language proficiency peers and low-low language proficiency) and have them complete two different tasks (less complexity task and more complexity task) to examine their engagement in peer interaction in three dimensions: cognitive, emotional and social. On one hand, we examine the influence of task complexity and language proficiency on learners' information processing. For example, we investigate whether there are differences in cognitive dimensions based on task complexity and language proficiency. On the other hand, the different social environments created by different proficiency pairing peers (such as learners' goals and orientations, relationships among group members, etc.) may also influence their engagement in the task. Learners are active agents in their learning process, and they will reinterpret and position themselves in various aspects of interaction based on their interaction with the surrounding environment, the task, and the relationships among learners. Therefore, the interactive effect between task complexity and proficiency pairing on learner engagement will also be examined.

#### V. CONCLUSION

Peer interaction plays a crucial role in second language development and is supported by various theoretical perspectives, such as cognitive interaction theory and sociocultural theory. Task-based language teaching has further promoted the importance of peer interaction in the classroom. However, simply pairing learners or grouping them together does not guarantee successful peer interaction or improved second language proficiency. The extent of learners' involvement in peer interaction tasks and the factors that affect their participation are important considerations. Based on the social-cognitive theory and learner engagement construct (Van Phung Dao, 2017) in second language learning, this paper put forward the conceptual framework for investigating the effect of task complexity and proficiency pairing on learner engagement, which provide a more holistic understanding of learner engagement in task-based peer interaction and have implications for instructional design, curriculum development, and learner

support strategies, ultimately enhancing learner engagement and promoting effective learning outcomes.

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