

Growth Mindset and Its Mediating Variables on Foreign Language Learning

Jiayi Zhu^{1*}

¹ School of Foreign Language, Zhejiang Gongshang University, Hangzhou, Zhejiang, 310000, China

Abstract. The growth mindset has received wide attention in recent years. It's a key psychological factor influencing second language acquisition. This article reviews the direct effect of growth mindset on foreign language achievement (FLA) and the indirect consequences mediated through grit and foreign language enjoyment (FLE). In-depth investigation reveals that existing research still faces many limitations. The coverage of cultural samples is relatively narrow. The majority of studies concentrate on particular geographical areas and linguistic groups, which limits the universality of the research results. There is no longitudinal evidence of long-term tracking. The dynamic evolution between variables is hard to clarify. The paper concludes by proposing that future studies should verify these mediating pathways through vertical designs and intervention experiments, and further expand the scope of research to a more diverse cultural and educational context. The research results are expected to provide practical insights for educators to integrate growth mindsets, grit, and FLE cultivation into foreign language teaching. This could promote the quality of foreign language instruction and learners' overall language acquisition skills.

1 Introduction

In the field of second language acquisition (SLA), the exploration of factors affecting learning outcomes has long been a central topic of academic concern. In the early stage, researchers mainly focused on cognitive factors such as language learning strategies and intellectual level. The discipline of positive psychology (PP) began to grow and attract attention. Non-cognitive factors represented by psychological beliefs, emotional experiences, and volitional qualities have gradually entered the research horizon. Its important role in promoting language learning has been increasingly recognized. Among them, Dweck puts forward the fundamental concept of a growth mindset, defined as an individual's belief that the development of core competencies can be realized through effort, strategies, and guidance. In contrast, a fixed mindset maintains that such abilities are innate traits that cannot be altered over time. Growth mindset is closely associated with more positive learning behaviours, such as higher learning motivation, greater perseverance, and enhanced self-efficacy [1]. Foreign language learning is a long-term and arduous process, that requires learners to have strong persistence and positive emotional experience. Therefore, scholars have begun to pay attention to the potential mediating variables between growth mindset and FLA. Grit and FLE may serve as mediators linking growth mindset to FLA [2,3]. Although the prospects are considerable, a growth mindset has not been widely adopted among second language learners and teachers. This review aims to systematize existing theoretical and empirical research on growth mindset when people learn a new language learning, analyze the indirect

* Corresponding author: 2307090723@pop.zjgsu.edu.cn

role of mediating factors in learning outcomes, clarify the definition and measurement methods of growth mindset, deepen academic and pedagogical understanding of this concept, and provide direction for future research and instructional interventions.

2 Theoretical Framework

2.1 Growth mindset

In the challenges of second language learning, learners' attitudes towards their own abilities directly affect their academic performance [4]. To address this issue, Dweck puts forward the concept of a growth mindset. The author posits that redoubling effort and viewing difficulties as opportunities for progress facilitates the development of intellectual and cognitive abilities [5,6]. Current assessments of growth mindset primarily rely on self-report scales, which have the advantages of simple operation and high efficiency in data collection. The more commonly used tools include two types. One is the revised version of Dweck's Mindset Questionnaire adapted by Papi et al., which adjusts the expression of items according to the evaluation needs of second language learners [2]. The other is the Language Mindset Inventory (LMI), which is a special measurement tool for language learning mindset [7]. It focuses more on the specific beliefs of learners about language ability, and its content is more targeted to the field of foreign language learning.

2.2 Grit

As a non-cognitive psychological factor, grit was first proposed by Duckworth et al. in the field of PP [8]. It is defined as persistence and passion shown by individuals in the process of pursuing long-range objectives. Researchers generally believe that grit positively predicts FLA. From the perspective of theoretical structure, grit consists of two latent dimensions: Persistent of Effort (POE) and Consistency of Interest (COI) [3]. Persistent of Effort describes the ability of learners to continue putting in steady effort when facing difficulties and setbacks toward long-duration goals, while Consistency of Interest means that learners can maintain stable enthusiasm and interest during the pursuit of a goal and will not easily shift their attention due to temporary difficulties or external interference. Teimouri et al. find grit has a negative correlation with fixed mindset and a positive correlation with growth mindset. Relevant studies have employed the Second Language Grit Scale or the Short Grit Scale (Grit-S) to evaluate learners' grit levels in foreign language acquisition [3,9,10,11].

2.3 Foreign language enjoyment

Enjoyment has consistently ranked among the most commonly studied topics in empirical research of foreign language teaching [12-14]. It reveals the interrelationship between PP and FLA. Researchers' attention to FLE stems from their potential relationship with the academic achievements of second language learners. Dewaele and MacIntyre are pioneers in the field of FLE research [15]. They created the Foreign Language Enjoyment Scale, and offered a precise and formal explanation tool for FLE. This scale, which is based on 21 Likert-scale assessment items, is the primary instrument for assessing FLE. It evaluates learners' positive emotional experiences during the foreign language learning process from several dimensions. These aspects include the enjoyment of language itself, language interaction, and language achievements. This scale's creation offers a solid foundation for the empirical research of FLE. The development of this scale has laid, making the quantitative research of FLE in the domain of possible.

3 Empirical research

3.1 Research contexts

Research on growth mindset and its mediating variables in foreign language learning has been continuously evolving. Existing studies have spanned a wide range of learning contexts. Additionally, there are some variations in the selection of both research participants and geographic regions. For instance, Hu et al. examine English Foreign language (EFL) learners in China [3]. Fathi and Khajavy set their research contexts in Iran [2]. Li does not restrict the language learning environments of bilingual learners [16]. Lou et al. further expand the scope to cover diverse linguistic backgrounds, such as Europe, East Asia, South Asia, the Middle East, Africa, Latin America, mixed races, etc [6,7]. Their research focused on learners of different languages. Chinese, French, German, Italian, Japanese, Spanish, and other languages are among them. This wide-ranging research context makes their results more culturally applicable. Test subjects are primarily non-language major university students with an average age between 19 and 22. Regarding sample size, all previous study use a sample size of more than 350 participants. The selected sample size meets the fundamental requirements of quantitative research for statistical power. It effectively mitigates the risk of bias in research outcomes which is associated with small sample numbers. Furthermore, this sample size guarantees the statistical accuracy and reliability of the study's conclusions.

3.2 Research methodology

Research in this field primarily adopts non-experimental cross-sectional correlational designs without variable manipulation or intervention. Data is gathered using a variety of instruments. Self-report scales, standardized test scores, and other techniques are examples of these instruments. The study used statistical methods like correlation analysis, confirmatory factor analysis (CFA), and Structural Equation Model (SEM). In this way, the research systematically explored two key points. One aspect focuses on how a growth mindset directly shapes foreign language learning. The other on the mediating function that grit and FLE exert. They provide substantial empirical support for non-cognitive factor research in second language acquisition.

To measure the specific impact of the growth mindset on foreign language learning, the researchers clearly defined the concepts of it. They tested many factors associated with learning a foreign language using a standard scale. Khajavy et al. adopt the Language Mindset Inventory (LMI), using Iranian university students' final foreign language course grades as the dependent variable [9]. Through SEM analysis, they examine the direct association between growth mindset and second language achievement. Derakhshan et al. revise the scale developed by Papi et al. [5,6]. Their dependent variable was student engagement. It comprises indirect participation, behaviour, emotion and cognition. They reveal how growth mindset improves EFL students' involvement in the classroom. This direct effect remains significant even after adjusting for mediating variables. Lou et al. employ latent profile analysis (LPA) to categorize learners into growth, fixed, and mixed profiles [7]. The study's dependent variables are classroom participation and final exam scores. They compare differences in foreign language learning metrics across these mindset profiles. These studies use a technique that combine quantitative evaluation of outcome variables with scale measurement. These investigations all come to the same result. The ability to learn a foreign language is directly improved by growth mindset.

In the measurement and testing of mediating effects, grit and FLE have emerged as core mediators. Their operationalization and mediating pathways have been systematically verified. Hu et al. employ the L2 Grit Scale proposed by Teimouri et al. to discuss the

mediating role of grit [3,10]. This scale consists of POE and COI. They discover that the relation between growth mindset and CET-4 scores is jointly mediated by grit and FLE using a parallel mediation model. Derakhshan et al. similarly use this scale to discover that the relationship between growth mindset and student engagement is somewhat mediated by grit [6]. When face with linguistic challenges, the growth mindset can improve learners' perseverance and enthusiasm, thereby promoting them to engage more fully in classroom activities. Li applies the FLE scale put out by Dewaele and MacIntyre in the relation to the mediating function of FLE to study Chinese EFL learners [15,17]. SEM analysis validates FLE's partial mediating effect on the association of growth mindset to student engagement. A Growth mindset fosters positive learning and affective experiences, reduces anxiety, enhances enjoyment, and consequently strengthens learners' willingness to participate. Hu et al. further find that the mediating effect of FLE is slightly stronger than that of grit [3]. By expanding learners' cognitive resources and promoting the application of learning strategies, FLE serves as a crucial emotional bridge connecting growth mindset and language achievement. Related studies are carried out by Li and Lou et al. [7,17]. They ensure the stability of mediating effect findings through operational checks like common method bias and multi-group invariance analysis.

3.3 Research findings

The results indicate that a growth mindset has direct positive effects on FLA. Khajavy et al. find that although its influence is relatively weak, growth mindset significantly and positively predicts second language achievement [9]. But while fixed mindset shows no such effect. The growth mindset directly enhances classroom participation among EFL learners, as stated by Derakhshan et al. [6]. Lou et al. use profile analysis to reveal that learners in the growth profile (accounting for 20.5%) demonstrate substantially higher classroom engagement and final exam scores than those in the fixed profile (21.8%) and mixed profile (57.7%) [7].

When discussing the mediating effect, both grit and enjoyment of foreign language learning play important roles. Hu et al. validate that both factors act as mediators to a certain extent between growth mindset and CET-4 scores [3]. Growth mindset indirectly improves language performance by increasing effort persistence, stable interest, and learning enjoyment. The mediating effect of the enjoyment of foreign language learning is slightly stronger than that of grit. Li proposes another viewpoint and conducts verification [17]. FLE plays a partial mediating role in the link of growth mindset to student engagement. Students are more inclined to participate as a result. Further evidence was presented by Derakhshan et al. [6]. It can support students in being persistent and enthusiastic when they face language challenges. These findings provide robust empirical support. Through mindset interventions, learners' grit and FLE of learning a foreign language will be cultivated. These intervention strategies have been used in diverse cultural teaching contexts, which is beneficial for increasing the efficacy of instruction.

4 Conclusion

This review systematically examines the impact of the growth mindset and its mediating variables on foreign language learning. The findings show that as a core non-cognitive factor, growth mindset plays a dual role in empowering language acquisition. It helps with language learning in two ways. It immediately drives significant outcomes like learner engagement and linguistic achievement. Through emotional and volitional mediating mechanisms, it also has an indirect impact on the outcomes. Grit and FLE serve as crucial mediating links. Grit transforms the positive effects brought by the growth mindset into concrete learning outcomes. It improves students' perseverance and recuperation. This situation occurs when

facing long-term linguistic challenges. Enjoyment creates a positive learning atmosphere that mitigates the interference of negative experiences on learning behaviors. These two elements interact with one another. They together make up the main way that learning a foreign language is impacted by the growth mindset.

This finding highlights the core value of non-cognitive factors in SLA. It implies that enhancing foreign language learning outcomes relies not solely on mechanical training of linguistic skills. It also demands attention to the coordinated cultivation of learners' internal belief systems alongside emotional and volitional qualities. There are clear limitations to the current research. Cross-sectional designs are the most common method. Because of this, establishing causal relationships between variables is difficult. Self-report questionnaires are frequently used. They might introduce potential subjective biases. Cultural contexts and research samples are not well covered. They concentrate on specific language learner groups, so the generalization of research results needs to be cautious.

In teaching practice, educators should intentionally integrate mindset training into classrooms education rather than simply passing on language knowledge. Instead of praising brilliance, educators ought to highlight effort and strategies. They can design assignments that are long-term and suitably difficult so that kids can learn the value of perseverance by conquering obstacles. Teachers could give students feedback that emphasizes process improvement and help students perceive setbacks as a necessary to learning. Future research should focus on longitudinal studies or intervention experiments. The mediation model should also be tested in more diverse cultural and educational contexts.

References

- [1] M. E. Shirvan, A. Alamer, Modeling the interplay of EFL learners' basic psychological needs, grit and L2 achievement. *J. Multiling. Multicul.* **45**(7), 2831-2847(2024)
- [2] J. Fathi, M. Pawlak, S. Saeedian, A. Ghaderi, Exploring factors affecting foreign language achievement: The role of growth mindset, self-efficacy, and L2 grit. *Lang. Teach. Res.* 13621688241227603. (2024)
- [3] X. Hu, G. K. Sidhu, X. Lu, Relationship between growth mindset and English language performance among Chinese EFL university students: The mediating roles of grit and foreign language enjoyment. *Front. Psychol.* **13**, 935506(2022)
- [4] C. S. Dweck, The journey to childre's mindsets—and beyond. *Child. Dev. Perspect.* **11**(2), 139-144(2017)
- [5] M. Papi, A. Rios, H. Pelt, E. Ozdemir, Feedback - seeking behavior in language learning: Basic components and motivational antecedents. *Mod. Lang. J.* **103**(1), 205-226 (2019)
- [6] Derakhshan, D. Doliński, K. Zhaleh, M. J. Enayat, J. Fathi, A mixed-methods cross-cultural study of teacher care and teacher-student rapport in Iranian and Polish University students' engagement in pursuing academic goals in an L2 context. *System.* **106**, 102790(2022)
- [7] N. M. Lou, K. A. Noels, Changing language mindsets: Implications for goal orientations and responses to failure in and outside the second language classroom. *Contemp. Educ. Psychol.* **46**, 22-33(2016)
- [8] L. Duckworth, C. Peterson, M. D. Matthews, D. R. Kelly, Grit: perseverance and passion for long-term goals. *J. Pers. Soc. Psychol.* **92**(6), 1087(2007)
- [9] G. H. Khajavy, P. D. MacIntyre, J. Hariri, A closer look at grit and language mindset as predictors of foreign language achievement. *Stud. Second. Lang. Acq.* **43**(2), 379-402 (2021)
- [10] Y. Teimouri, L. Plonsky, F. Tabandeh, L2 grit: Passion and perseverance for second-language learning. *Lang. Teach. Res.* **26**(5), 893-918(2022)

- [11] L. Duckworth, P. D. Quinn, Development and validation of the Short Grit Scale (GRIT–S). *J. Pers. Assess.* **91**(2), 166-174 (2009)
- [12] Li, G. Jiang, J. M. Dewaele, Understanding Chinese high school students' foreign language enjoyment: validation of the Chinese version of the foreign language enjoyment scale. *System*. **76**, 183-196 (2018).
- [13] Y. Guo, Exploring the dynamic interplay between foreign language enjoyment and learner engagement with regard to EFL achievement and absenteeism: A sequential mixed methods study. *Front. Psychol.* **12**, 766058 (2021)
- [14] Y. Zeng, A review of foreign language enjoyment and engagement. *Front. Psychol.* **12**, 737613 (2021)
- [15] J. M. Dewaele, P. D. MacIntyre, The two faces of Janus? Anxiety and enjoyment in the foreign language classroom. *Stud. Second. Lang. Le.* **4**(2), 237-274(2014).
- [16] Y. Li, Unraveling willingness to communicate in Chinese as a second language: The role of L2 grit, growth mindset, and foreign language enjoyment. *Aust. Rev. Appl. Lingui.* (2025).
- [17] H. Li, Perceived teacher-student relationship and growth mindset as predictors of student engagement in foreign student engagement in foreign language learning: the mediating role of foreign language enjoyment. *Front. Psychol.* **14**, 1177223(2023)