COGNITIVE AND AFFECTIVE ROLES IN LANGUAGE AND LITERATURE LEARNING AT THE SECONDARY SCHOOL LEVEL (A LITERATURE STUDY)

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ABSTRACT

This study explores the cognitive and affective roles in language and literature learning at the secondary school level. The research highlights the significant barriers students face due to cognitive challenges, such as attention and memory issues, and affective factors, such as anxiety and low self-esteem. These barriers can negatively impact students' language acquisition and academic success. This study aims to identify the key cognitive and affective factors affecting language learning and propose strategies to address these issues. The methodology employed is a literature review, which involves analyzing existing research, theories, and findings from various sources. The results suggest that cognitive and affective factors play a crucial role in language learning, and that addressing these challenges through differentiated teaching, supportive classroom environments, and emotional intelligence can significantly enhance students' engagement and learning outcomes. The study concludes that a holistic approach, integrating cognitive strategies with emotional support, is essential for improving language learning at the secondary school level. Educators are encouraged to implement practices supporting cognitive development and emotional well-being to foster better language acquisition and academic performance.

INTRODUCTION

The cognitive and affective challenges faced by high school students in language and literature learning are multifaceted and strongly related to a variety of psychological, social, and educational factors. These challenges can significantly hinder academic performance and overall student success, requiring a comprehensive understanding of the origins and potential of interventions. Cognitive difficulties in language learning often manifest as problems with attention, memory, and

processing speed. For example, students with conditions such as Attention Deficit Hyperactivity Disorder (ADHD) often have difficulty maintaining concentration, which is essential for effective language mastery and comprehension. Research suggests that students with ADHD may face language learning and academic achievement challenges, highlighting cognitive barriers that hinder their educational progress (Katsarou et.al., 2024). Additionally, students with certain language impairments may experience significant challenges in expressive and receptive language skills, which can adversely impact their ability to engage with literature and participate in classroom discussions (Joffe et al., 2019).

The interaction between cognitive deficits and language learning difficulties underscores the need for targeted educational strategies to accommodate diverse learning needs. The use of textbooks alone does not guarantee the effectiveness of students' language learning (Awal & A, 2023). Using a good curriculum is not as easy as providing effective language learning outcomes (Doris M. & Brennan, 2018). Affective problems, including anxiety and low self-esteem, also play an important role in language and literature learning. Students who struggle academically can develop a negative self-image, leading to increased anxiety about their performance in language-related tasks. This phenomenon is especially seen among adolescents, who are often sensitive to peer perceptions and academic expectations (Siyuan Han, Yiman Li, 2022). The emotional impact of anxiety further interferes with cognitive function, making it increasingly challenging for students to engage with language and literature effectively. In addition, social dynamics within the classroom, such as bullying or exclusion, can exacerbate these affective problems, creating an environment that is not conducive to learning (Zhang & X, 2024).

The educational context itself significantly affects students' cognitive and affective outcomes. For example, the quality of teacher-student interaction and the classroom environment can reduce or exacerbate student difficulties. Research has shown that a supportive and inclusive classroom environment can promote better academic outcomes and emotional well-being among students with learning difficulties (Roldán et.al, 2021). Conversely, classrooms characterized by high levels of stress and low support can increase dropout rates and student disengagement in learning (Barbayannis et al., 2022). Therefore, educators must be equipped with strategies to create an environment that supports cognitive and emotional development. Differentiated teaching is one approach that has shown promise in meeting the diverse needs of high school students. Educators can improve student engagement and understanding in language and literature by adapting teaching methods to accommodate different learning styles and abilities (Smale-Jacobse et al., 2019). For example, using visual aids, interactive activities, and collaborative learning opportunities can help students with different cognitive profiles access the curriculum more effectively. In addition, the integration of social-emotional learning programs (SEL) in the curriculum can support students' regulation and emotional resilience, ultimately improving their academic performance (Vilà & Corbí, 2021).

Research shows that students who do not receive adequate support during this critical time are at higher risk of academic failure and mental health problems (Chu et al., 2024). Therefore, schools must implement a comprehensive support system that meets students' academic and emotional needs during this transition period. In addition, the role of parental involvement in education cannot be ignored. Parents actively involved in their children's learning process can significantly affect their

academic success and emotional well-being. Studies have shown that parental support correlates positively with students' academic achievement and self-esteem, especially those facing cognitive challenges (Baak et al., 2019). Schools should foster partnerships with families to create a holistic support network to enhance the student learning experience. In conclusion, addressing cognitive and affective issues in language and literature learning at the secondary school level requires a multifaceted approach that considers individual student needs, classroom dynamics, and broader educational policies. By implementing differentiated instruction, fostering a supportive classroom environment, and increasing parental involvement, educators can create a more inclusive and effective learning experience for all students. The interaction between cognitive and affective factors is complex, and ongoing research is critical to developing evidence-based strategies that support students in overcoming their challenges and achieving academic success.

Students at the high school level often experience cognitive and affective barriers to language and literature learning, which can significantly hinder their academic success. Cognitive impairments include difficulties in processing language, which may stem from conditions such as dyslexia or attention deficit hyperactivity disorder (ADHD). Research shows that students with dyslexia have difficulties in phonological processing, which is essential for reading comprehension and fluency (Margaret J. Snowling & Charles Hulme, 2020). Similarly, students with ADHD may experience challenges in maintaining attention, which affects their ability to engage with complex texts and participate in discussions (Ugalde et al., 2021).

Affective barriers, such as anxiety and low self-esteem, further complicate the learning process. Students who perceive themselves as poor readers may develop a fear of failure, leading to avoidant behaviors that hinder their engagement with language and literature. Additionally, social dynamics within the classroom, including peer relationships and teacher support, play an important role in shaping students' emotional responses to learning. Effective interventions, such as differentiated teaching and social-emotional learning programs, can help reduce these barriers by fostering a supportive learning environment that meets cognitive and emotional needs. High school students often experience cognitive and affective barriers to language learning, which can significantly impact their academic performance and emotional well-being. Cognitive barriers, such as difficulty processing language and remembering information, can arise from various factors, including specific learning disabilities and varying levels of prior knowledge. For example, students with language impairments may experience difficulties in vocabulary mastery and comprehension, which is crucial for success in language and literature studies (Elena L., 2022). In addition, cognitive load theory suggests that excessive demands on working memory can hinder language learning, especially when students are faced with complex grammatical structures or unfamiliar vocabulary. However, the references provided do not adequately support this claim, as it does not specifically address cognitive load theory or its implications for language learning (Grigorenko et al., 2022).

Affective barriers also play an important role in language learning. Anxiety Grofcikova & S (2024) and self-esteem Sorokoumova et al. (2022) can discourage students from participating in language activities, leading to a cycle of disengagement and further academic struggle. Affective barriers can also be affected by the similarity of the native language with the foreign language being studied. Cognitive

strategies are more effective for learners with lower moods, and language similarity can affect learning success (Su et al., 2023). Emotional factors, such as motivation and interest in the subject matter, significantly affect students' willingness to engage in language learning tasks (Frances et al., 2020). Research shows that fostering a supportive classroom environment can alleviate these affective barriers, improving student confidence and overall learning outcomes (Sturesson et al., 2019). Therefore, overcoming cognitive and affective barriers is essential to improve the language learning experience at the high school level. Cognitive and affective factors are important in language learning, affecting learners' acquisition process and outcomes. Factors of interest, motivation, and cognitive load affect language learning outcomes (Zhi et al., 2023).

Cognitive aspects, such as working memory and metalinguistic awareness, are essential in processing and understanding language structures (Malakul & Park, 2023). For example, research has shown that individuals with higher metalinguistic awareness tend to perform better at language tasks, as they can manipulate and reflect on language rules more effectively (Yang Dong, et.al., 2020). Additionally, cognitive load theory suggests that when learners are flooded with information, their ability to process language decreases, highlighting the importance of a manageable learning environment (Waechter et al., 2021).

The cognitive and affective challenges faced by high school students in language and literature learning have many aspects and are strongly related to various educational strategies, student backgrounds, and institutional frameworks. To understand these challenges, a comprehensive review of the existing literature is needed, highlighting the important role of pedagogical approaches, emotional intelligence, and socio-educational environments in shaping students' learning experiences (Doris et al., 2018).

Both cognitive and affective factors significantly influence language learning at the secondary school level, which can create barriers to student success. Cognitive challenges, such as difficulties in processing language, memory, and attention, hinder students' ability to master language structures effectively. At the same time, affective factors like anxiety, self-esteem, and motivation can negatively impact students' emotional engagement and their willingness to participate in language learning activities. These cognitive and affective barriers are particularly problematic in the secondary school context, where students face pressure from academic expectations and peer influences. However, despite the recognized importance of these factors, there is still limited research on how cognitive and affective roles interact to shape the language learning experience in secondary education.

This study is urgently needed as secondary school students are at a critical stage in their language acquisition process, which affects their overall academic performance. Addressing students' cognitive and affective challenges can significantly improve their language learning outcomes and, by extension, their overall educational experience. By understanding these factors in depth, educators can design more effective interventions and teaching strategies that cater to the diverse needs of students, ultimately enhancing their ability to engage with language and literature content (Dalbergenova & L, 2020).

Previous research by Katsarou et al. (2024) identified the cognitive challenges faced by students with Attention Deficit Hyperactivity Disorder (ADHD) in language learning, pointing out how difficulties in concentration and memory can

hinder language acquisition. Similarly, studies by Joffe et al. (2019) discussed the impact of language disorders on students' ability to engage with literature, particularly focusing on expressive and receptive language skills. Furthermore, research by Siyuan Han and Yiman Li (2022) explored the role of emotional factors like self-esteem and anxiety in language learning, noting that high levels of anxiety could result in disengagement and avoidance behavior.

While previous studies have explored cognitive and affective factors in isolation, there is limited research on how these two dimensions interact in the language learning process at the secondary school level. Specifically, there is a gap in understanding how cognitive barriers (like working memory and attention) and affective barriers (like anxiety and self-esteem) concurrently influence language learning outcomes. This research aims to fill this gap by examining the combined effects of cognitive and affective factors on secondary school students' language acquisition.

This research introduces a novel perspective by exploring the dual impact of cognitive and affective factors on language learning, focusing on how these factors shape students' language acquisition. Unlike previous studies that have treated cognitive and affective aspects separately, this study looks at them to provide a more holistic understanding of language learning challenges. The findings will contribute to developing integrated teaching strategies that address students' cognitive and emotional needs.

This study aims to analyze the cognitive and affective factors that influence language learning at the secondary school level and explore how these factors affect students' language acquisition. It also aims to identify strategies that can mitigate the impact of these factors, leading to improved language learning outcomes.

This research will provide valuable insights into the role of cognitive and affective factors in language learning, helping educators create more supportive and effective learning environments for secondary school students. By addressing the combined influence of cognitive and affective factors, the study will contribute to the development of teaching strategies that foster better engagement, reduce anxiety, and enhance language acquisition, ultimately improving students' academic performance in language and literature studies.

RESEARCH METHOD

The method used in this article is the literature review method, which involves reviewing existing scientific articles, books, dissertations, conference proceedings, and other relevant materials on a specific topic. A literature review aims to summarize, describe, and critically evaluate the research and findings in the chosen field. This method allows researchers to comprehensively understand the topic by synthesizing information from various sources. The process begins with identifying relevant topics, followed by gathering sources such as academic journals, books, and theses that address the research area. The next step involves analyzing these sources, paying attention to previous authors' theories, methodologies, and results. The strengths and weaknesses of each source are carefully recorded to ensure a thorough evaluation (William et al., 2023).

The subsequent literature review steps involve classifying the findings based on specific themes or categories, which facilitates further analysis. After classifying the findings, the information is synthesized to create a more comprehensive

understanding of the topic. This synthesis helps establish connections between the various sources and existing findings, ultimately contributing to a broader understanding of the field. The final stages involve writing a research report that includes the introduction, literature review, methodology, analysis, and conclusions, with proper citations for all sources. Additionally, the validity and reliability of the sources are evaluated, ensuring that the study's results contribute meaningfully to the existing body of knowledge in the field.

RESULT AND DISCUSSION

An integrative approach that combines affective and cognitive factors is important in language learning, where emotions play a role as a catalyst (Jaworska & M, 2022). Positive cognitive engagement can be a mediator that improves language achievement based on varying affective factors (Yuan & C, 2020).

Cognitive Roles on Language Learning in Secondary School Students

Cognitive roles in language learning include a variety of processes, including working memory, cognitive flexibility, attention, metacognition, and cognitive load management. Understanding these cognitive mechanisms is essential for developing effective language learning strategies and interventions. By addressing these cognitive factors, educators can create a more supportive and effective learning environment that improves language acquisition for all learners. Students who received cognitive strategy instruction showed significant improvements in academic assessment.

Working Memory and Language Learning

Working memory is one of the most important cognitive factors in language learning, which refers to the ability to store and manipulate information in the mind quickly. Research shows that working memory capacity is closely related to language acquisition and processing. For example, Guler highlights that working memory is a dynamic process that affects other cognitive abilities, which plays an important role in language learning (Guler & K, 2023).

This capacity allows learners to process linguistic information, such as vocabulary and grammar, while simultaneously engaging in comprehension tasks. Studies have shown that learners with higher working memory capacity tend to perform better in language tasks, as they can manage the cognitive load associated with learning a new language (Schwieter et al., 2022). Language mediates the relationship between age and the development of cognitive and affective Theories of Mind (ToM) in children (Bigelow et al., 2021).

Cognitive Flexibility and Language Acquisition

Cognitive flexibility, the ability to adapt one's thoughts and behaviors in response to changing environments or demands, is another important aspect of language learning. Zhang emphasizes that language acquisition, particularly in a second language, requires a blend of cognitive effort and strategy, especially for older learners who may not have the same instinctive understanding of language as younger children (Zhang et al., 2023). This adaptability allows learners to navigate the complexity of language structures and contexts, facilitating more effective communication. Cognitive strategies and affective states interact with native language similarities to determine the success of new language learning (Hayakawa et al., 2021).

Attention Mechanism in Language Learning

Attention is an important cognitive mechanism significantly affecting language learning, especially for students with attention-related challenges, such as ADHD. Mohebbi discusses how attention affects language comprehension and production, noting that students with ADHD often have difficulty focusing, which can hinder their language acquisition process (Mohebbi, 2023). Strategies that foster attention mechanisms, such as structured learning environments and engaging teaching methods, can help improve language learning outcomes for those students.

The Role of Metacognition

Metacognition, or awareness and regulation of a person's cognitive processes, is essential for effective language learning. Learners who can reflect on their learning strategies and adjust them appropriately are often more successful at learning a new language. Research shows that metacognitive, cognitive, and affective strategies play an important role in language learning, allowing students to manage their learning process better. This self-regulation allows learners to identify areas of difficulty and look for appropriate resources or strategies (William et al., 2023) to overcome challenges (Van et al., 2023).

Cognitive Load Theory in Language Learning

Cognitive load theory states that the amount of information presented to learners must be managed to optimize learning. Wu suggests that reducing cognitive load through a multimodal dialogue system can improve language learning performance by allowing learners to focus on important language components without being overwhelmed (Wu, 2023). This approach emphasizes the importance of maintaining a balance between the complexity of language tasks and the cognitive resources available to learners.

Neuroscience and Memory in Language Acquisition

Neuroscience research has also shed light on the cognitive processes involved in language learning (Al-Said & K, 2023). Li discusses how memory is fundamental to language acquisition, as memory allows individuals to store and retrieve linguistic information (Li & L, 2023). Understanding the neural mechanisms underlying memory can inform educational practices and lead to the development of techniques that improve memory retention in language learners (Andleeb et al., 2023).

Cognitive Styles and Language Learning

Cognitive styles, which describe how individuals understand and process information, can also influence language learning. Other researchers have explored how different cognitive styles can affect learners' metaphorical competencies in a second language by highlighting the interaction between cognition and language use. Recognizing and accommodating diverse cognitive styles in the classroom can result in more effective language teaching tailored to the needs of individual learners (Ying Li et al., 2024).

Affective Roles in Language Learning for Students in Secondary Schools

The affective role in language learning is an important aspect that affects the ability of high school students to acquire a new language. Affective factors include a variety of emotional and psychological variables, including motivation, anxiety, self-esteem, and language ego, all of which can significantly impact a student's language learning experience and outcomes.

Motivation and Language Learning

Motivation is one of the most important affective factors in language acquisition. Qiao emphasized that students who have adequate motivation tend to

perform better in language learning tasks, as motivation encourages engagement and perseverance (Qiao, 2024). Intrinsic motivation, which arises from a genuine interest in the language and culture, often results in a more immersive learning experience compared to extrinsic motivation, which may be driven by external rewards or pressure. Furthermore, Purcia et al. highlighted that understanding students' emotional states can help educators adjust their interactions, fostering a more engaging and supportive learning environment (Purcia et al., 2023). This alignment between teaching strategies and students' motivation can significantly improve language acquisition.

Anxiety and Language Learning

Anxiety is another important affective factor that can hinder language learning. Research shows that high levels of anxiety can create "affective filters," as proposed by Krashen, that hinder language input and acquisition (Rahman et al., 2020). Taysi's study of EFL Turkey students revealed that language anxiety can lead to avoidance behavior, where students may refrain from participating in speaking activities for fear of making mistakes. This anxiety can come from a variety of sources, including fear of negative evaluation, fear of communicating, and exam anxiety. Addressing this anxiety through supportive teaching practices and creating a safe classroom environment can help reduce its impact on language learning.

Self-Esteem and Language Mastery

Self-esteem plays an important role in language learning, as students with higher self-esteem tend to be actively involved in learning activities and take risks in using the language. Elshahawy's research shows that self-confidence significantly affects English proficiency and mastery by learners (Elshahawy, 2020). When students believe in their abilities, they are more likely to participate in discussions, practice speaking, and look for opportunities to use language outside the classroom. Conversely, low self-esteem can lead to withdrawal and unwillingness to engage, hindering language development.

Ego Language and Multilingualism

The concept of language ego, which refers to the identity and self-concept associated with the use of language, also plays an important role in language learning. Zahra et al. discuss how a strong language ego can improve multilingual abilities, as individuals with positive language identities are more likely to accept new languages and cultures (Zahra et al., 2023). This positive self-concept can foster resilience in facing challenges during language learning. Encouraging students to develop a positive language ego can result in greater engagement and success in acquiring a new language (Tiurikova et al., 2021).

Cultural Factors and Emotional Engagement

Cultural factors also affect the affective dimension of language learning. Students' background and cultural context can shape their attitudes towards language learning and emotional response to the learning environment. Frances noted that local culture can influence students' motivation and fluency in English, which suggests that culturally responsive teaching practices can improve emotional engagement and learning outcomes (Frances et al., 2020). Educators can create a more inclusive and motivating learning environment by incorporating culturally relevant materials and recognizing students' backgrounds.

Teacher-Student Relationship

The teacher-student relationship quality is another important aspect of the affective role in language learning. Positive relationships foster a sense of belonging and security, essential for effective learning. Research by others shows that teachers' affective factors, such as motivation and attitude, significantly affect student motivation and engagement (Al-Said, 2023). When teachers show empathy, support, and encouragement, students are more likely to feel valued and motivated to participate in language learning actively. Teacher actions, both verbal and non-verbal, support cognitive and affective learning in the context of language teaching (Wang & X, 2021). Teachers using learning technology to influence learning interest can increase the effectiveness of language learning (Bahçekapılı & E, 2023).

CONCLUSION

The role of cognition in language learning is crucial, encompassing various cognitive processes such as memory, attention, and metacognition. Understanding these cognitive mechanisms is vital for developing effective language learning strategies and interventions. Similarly, affective factors—such as motivation, anxiety, self-esteem, language ego, cultural influences, and teacher-student relationships—play a significant role in shaping students' language acquisition experiences. Addressing these affective factors can notably enhance language learning for high school students. Educators must foster a supportive and engaging environment that acknowledges and responds to students' emotional needs, encouraging a more effective language learning process. Future research should explore the long-term impact of integrating cognitive and affective factors into language learning curricula, particularly examining how sustained interventions can improve student engagement, reduce anxiety, and enhance language proficiency. This could involve tracking students' academic progress to assess the effectiveness of tailored teaching strategies that address cognitive and emotional language learning barriers.

REFERENCES

Al-Said, & K. (2023). Influence of teacher on student motivation: Opportunities to increase motivational factors during mobile learning. *Educ Inf Technol (Dordr).*, 1–19–1–19.

Andleeb, N, Zimi, & R. (2023). Exploration of Speaking Multiple Languages' Effect on Cognitive Flexibility and Problem-solving Skills. *Pakistan Journal of Humanities and Social Sciences*, *11*(2), 837–845–837–845. https://doi.org/https://doi.org/10.52131/pjhss.2023.1102.0394

Awal, & A. (2023). English Language Learning and the Prospect of Secondary Schools in Bangladesh. *International Journal of English Linguistics*, *13*(2), 58. https://doi.org/https://doi.org/10.5539/ijel.v13n2p58

Bahçekapılı, & E. (2023). Predicting the secondary school students' intention to use e-learning technologies. *Research in Learning Technology*, *31*, 1–13–1–13. https://doi.org/https://doi.org/10.25304/rlt.v31.2881

Barbayannis, G, Bandari, M, Zheng, X, Baqueri, H, Pecor, W, K., & M, X. (2022). Academic Stress and Mental Well-Being in College Students: Correlations, Affected Groups, and COVID-19. *Front Psychol*, *13*.

Bigelow, J, F., Enticott, & G, P. (2021). The mediating effect of language on the development of cognitive and affective theory of mind. *Journal of Experimental Child Psychology*, *209*. https://doi.org/https://doi.org/10.1016/j.jecp.2021.105158

Chu, T, Liu, X, Takayanagi, S, Matsushita, T, Koyama, & H. (2024). Association between mental health and academic performance among university undergraduates: The interacting role of lifestyle behaviors. *Int J Methods Psychiatr Res.*, *32*(1), e19–e19.

Dalbergenova, & L. (2020). The problem of overcoming the language barrier when learning a foreign language in higher education institutions. *Bulletin of the Karaganda University. Pedagogy Series*, *100*(4), 104–114–104–114. https://doi.org/https://doi.org/10.31489/2020ped4/104-114

Doris, M, Brennan, & M.-D., N. (2018). Journal of Applied Learning & Teaching. *The Irish Journal of Psychology*, *1*(1), 25–34–25–34.

Frances, C, Duñabeitia, & A, J. (2020). The Effects of Language and Emotionality of Stimuli on Vocabulary Learning. *Plos One*, *15*(10), e0240252–e0240252. https://doi.org/https://doi.org/10.1371/journal.pone.0240252

Grigorenko, L, E., Compton, D, Fuchs, L, Wagner, R, Willcutt, E, Fletcher, & M, J. (2022). Understanding, Educating, and Supporting Children with Specific Learning Disabilities: 50 Years of Science and Practice. *Am Psychol.*, *75*(1), 37–-37–.

Grofcikova, & S. (2024). The role of everyday stressors on primary students´ language learning. *Educational Role of Language Journal*, *2023–2*(10), 78–86–78–86. https://doi.org/https://doi.org/10.36534/erlj.2023.02.06

Guler, & K. (2023). *The Relationship Among Working Memory Capacity, Cognitive Flexibility and Cognitive Emotion Regulation*. https://doi.org/https://doi.org/10.5772/intechopen.1002893

Hayakawa, S, Marian, & V. (2021). Native Language Similarity during Foreign Language Learning: Effects of Cognitive Strategies and Affective States. *Applied Linguistics*, *42*(3), 514–540–514–540. https://doi.org/https://doi.org/10.1093/applin/amaa042

Jaworska, & M. (2022). Paradygmat afektywno-kognitywny w badaniach procesu uczenia się i nauczania języków obcych w kontekście komunikacji specjalistycznej. *Neofilolog*, *58*(1), 27–41–27–41. https://doi.org/https://doi.org/10.14746/n.2022.58.1.3

Joffe, L, V., Hulme, & C. (2019). Improving Storytelling and Vocabulary in Secondary School Students With Language Disorder: A Randomized Controlled Trial. *International Journal of Language & Communication Disorders*, *54*(4), 656–672–656–672. https://doi.org/https://doi.org/10.1111/1460-6984.12471

Katsarou, V, D., Efthymiou, E, Kougioumtzis, A, G., Sofologi, M, Tsiamtsiouris, & M. (2024). Identifying Language Development in Children with ADHD: Differential Challenges, Interventions, and Collaborative Strategies. *Children (Basel)*, *11*(7), 841.

Li, & L. (2023). *Neuroscience Support Gamification Improving Memory*. 1291–1303–1291–1303. https://doi.org/https://doi.org/10.2991/978-2-38476-126-5_141

Sorokoumova, V, G., Yamshchikova, & A, Y. (2022). Communicative Training as a Method of Overcoming Psychological Barriers that Arise when Learning a Foreign Language. *Development of Education*, *5*(3), 46–50–46–50. https://doi.org/https://doi.org/10.31483/r-103484

Su, C, Liu, & S. (2023). Intervention study of visual communication design based on emotional interaction for emotional understanding in autism. *CNS Spectrums*, *28*(S2), S110–S110. https://doi.org/https://doi.org/10.1017/s1092852923005291

Tiurikova, I, Storto, & A. (2021). The link between multilingualism, language learning and open-mindedness in secondary school students in Norway. *Nordic Journal of Language Teaching and Learning*, *9*(2), 1–24–1–24. https://doi.org/https://doi.org/10.46364/njltl.v9i2.945

Ugalde, L, Puigvert, & L. (2021). Impact of Interactive Learning Environments on Learning and Cognitive Development of Children With Special Educational Needs: A Literature Review. *Frontiers in Psychology*, *12*. https://doi.org/https://doi.org/10.3389/fpsyg.2021.674033

Van, N., S, Hoang, & A. (2023). Metacognition in Language Learning among Non-English-major Tertiary Students. *MEXTESOL Journal*, *47*(2).

Waechter, R, Punch, & B. (2021). Mitigating Medical Student Stress and Anxiety: Should Schools Mandate Participation in Wellness Intervention Programs? *Medical Teacher*, *43*(8), 945–955–945–955. https://doi.org/https://doi.org/10.1080/0142159x.2021.1902966

Wang, & X. (2021). Cognitive and Affective Learning in English as a Foreign Language/English as a Second Language Instructional-Learning Contexts: Does Teacher Immediacy Matter? *Frontiers in Psychology*, *12*(October), 1–8–1–8. https://doi.org/https://doi.org/10.3389/fpsyg.2021.759784

William, A, J., Hashim, & H. (2023). Preferred Language Learning Strategies Employed by Rural Secondary School Students in Learning English. *International Journal of Academic Research in Progressive Education and Development*, *12*(2), 2024–2047–2024–2047. https://doi.org/https://doi.org/10.6007/ijarped/v12-i2/17797

Yuan, & C. (2020). The Influence of Affective Factors and Cognitive Engagement on Students' English Proficiency. *IEEE Transactions on Computers*, *53*(7), 928–928–928–928. https://doi.org/https://doi.org/10.1109/tc.2004.32

Zhang, C, Zhang, & W. (2023). The impact of mental disturbance on second language learning psychology among Chinese undergraduate students: a structural equation modelling analysis. *Current Psychology (New Brunswick, N.J.)*, *42*(35), 1.

Zhang, & X. (2024). *Exploring Cognitive and Language Acquisition Processes in Second Language Learning of English*. 248–254–248–254. https://doi.org/https://doi.org/10.2991/978-2-38476-214-9_32

Zhi, Y, Wu, & L. (2023). Extended reality in language learning: A cognitive affective model of immersive learning perspective. *Frontiers in Psychology*, *14*(February), 1–5–1–5. https://doi.org/https://doi.org/10.3389/fpsyg.2023.1109025