

Critical Literature Review: Age Factors on Second Language Acquisition

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Abstract

Our understanding about second language acquisition is constantly updating itself due to new and compelling research. This article supports the idea that second language teachers should remain cognizant on the recent developments in research and critically reviews the literature regarding second language learning. This article also explores new theories regarding age factors in second language learning, with particular reference to the bilingual Chinese/English language context. This reviews found that teachers should understand the influence of critical age periods on language learners' second language acquisition. The contextual focus is expanded to variations in the language learning environment, such as parental influence, bilingual schools and use of technology. This article concludes that understanding contextual factors such as age ranges and learning environments is paramount to delivering high-quality of second-language courses, and recommends methods for building an enjoyable and interactive second language learning environment with not much pressure, especially to young learners as well as adult learners. While this paper does review literature regarding adult learners of second languages, to understand more about the pedagogical differences and similarities of adults and children, as it progress, it will increasingly focus on the optimum teaching methods and environmental factors for supporting young learners. In doing so, it will consistently emphasize, based on the research, the importance of educators understanding children's social and emotional development alongside, and as part of, learning a second language. In its summary, some recommendations will be made for teachers of second language learners based on its findings.

Keywords: Age Factor, Second Language Acquisition, Learning Environment, Young Learners, Adult Learners

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Introduction

This paper explores the age and environmental factors that influence second language learning. Considering the first issue of age ranges, it is necessary to review the literature on the differences and similarities between adult and young learners of English as second language. Researchers stress the importance of learners' *beliefs* on how they acquire the second language, placing the individual learner at the forefront of any meaningful understanding about how learners' develop their acquisition in learning second language. Indeed, Westergaard (2021) convincingly argued that learners, regardless of age, the learners have individual abilities and efficiencies in language learning. This seems to suggest that while many benefits may exist in grouping adults and children as separate theoretical age ranges, practitioners of second language teaching should not forget that each learner is an individual learner.

There are axiomatically different factors and priorities for young and adult learners of second language, and the teachers who are guiding their learning. Young learners are not able to learn in a 'static state' like adults, and they are more suited to pictures and visual effects which better spark their interest (Li & Lan, 2021). Colorful imagery can stimulate young learners' cognition and they not suffering from factors such as subconscious pressure, low self-confidence and emotional status (Castañeda, 2017). This review emphasizes the importance of teachers and parents of young second language learners to maintain a pressure-free language environment.

Some research emphasized the importance of the language learning environment on both types of learner. Pfenninger and Singleton (2019) emphasized the difference in adults mature cognitive abilities while other researchers noted the similarities in how adults and young learners learn (Havron & Avron, 2021). Havron and Avron (2021) emphasized how both adults and young learners learn vocabulary about things that interest them, either consciously or subconsciously. This focus on learners' interests necessitates a wider understanding of how and why both adults and children learn English, and what environment can be built either for them or by them to support their interest. Making no distinction between the age ranges, researchers suggested that language learning efficiency can be improved by analyzing strategies, attitude incentives, and cognitive style incentives (Perales & Cenoz, 2002). This evidence seems to support the view that while meaningful differences are bound to exist between adult and young learners of second language, understanding their motivations and characteristics as learners, regardless of age, is the surest way for teachers to guide their acquisition in learning second language.

To understand more about the characteristics and differences of young and adults' second language learning, this paper seeks to answer the following research questions:

- i What differences exist in second language acquisition by children and adults? Why do these differences exist?
- ii What learning environments, and complimentary teaching methods, best support second language learners of difference ages?

Research Question 1:

What differences exist in second language acquisition by children and adults? Why do these differences exist?

Various studies indicate that age has multiple effects on second language acquisition and emphasize that language learning is subject to nuances at progressive stages of learning (Wirth et al., 2020). More specifically, multiple surveys' findings agree that children's ability to receive and implement vocabulary is more pronounced in children aged six and below (Long & Granena, 2018; Sierens et al., 2019). Between six and twelve, there is still a high potential, yet after twelve a downward trend is observable in ease of vocabulary learning (Veríssimo, 2018; Xue et al., 2021). This corroborates that young learners seem to have a special ability when learning languages. Children's ability to imitate language, especially in pronunciation, cannot be matched by adults.

This evidence seems to suggest that the earlier one starts to learn second language, the higher potential they will have in acquiring pronunciation, vocabulary and syntax. This is useful evidence for parents and teachers who want their children to develop second language skills to consider. Teachers and parents should understand that children have different requirements for learning, and pay great attention to language learning materials such as picture books and high-quality audios to help them develop their proficiency in second language. Teachers and parents should prioritize the children's social and emotional development alongside their second language acquisition. Past researches agree that researchers have stressed that young learners are much more receptive to the creation of learning conditions in an unnatural context than adults (White et al., 2017).

Research has ascertained and compartmentalized the differences between adults and children in second language learning by studying age from different perspectives (Muñoz, 2019). Muñoz (2019) synthesized that alongside theoretical understanding of favorable environmental conditions for learning, young learners and adults learners were found to differ not only due to their age but by the context in which they learn.

Researchers have demonstrated the importance of how learners' ages affect their psychology as learners of a second language (Yi, 2021). It is evident that the psychological burden of adults is far greater than that of young learners. Young learners can learn second language far more naturally without the psychological burden of mature adult cognition. Furthermore, adults are more influenced by the habits and parameters of their mother tongue than young learners. From the standpoint of cognition and self-awareness as learners, adults do have more advantages than young learners (Dekeyser, 2018). Adults are able to more fully comprehend why they are learning the second language, what motivations they have, and self-direct their learning accordingly. This also gives adults the ability to build their own learning environment to scaffold their learning journey, whereas young learners require this environment to build and be provided for them.

Neuroscientific studies have demonstrated that young learners have far greater ease in 'separating' the second language from their mother tongue, and achieving full bilingualism (Hartshorne et al., 2018), whereas adult learners, especially those who begin learning a second language in adulthood or late adolescence, have much more trouble in differentiating the two languages. Compelling researches suggested that one reason young learners acquire second languages more easily is that young learners are not yet entirely proficient in their first language (Birdsong, 2018). Birdsong (2018) emphasized that by using the term *neural plasticity*, that these learners' incomplete understanding of their mother tongue allows much more freedom and ability to receive the second language, and most importantly, adopt it alongside their acquisition of the first language.

The wealth of evidence from the researches strongly suggest huge benefits for starting to learn a second language earlier rather than later. The evidence suggested that the critical period of language learning remains powerful until mid-adolescence, when numerous social and psychological factors relating to maturity inhibit the ease of second language acquisition. Indeed, it can be difficult to distinguish people who learn second language in childhood from native speakers, and those who start learning a second language in adulthood invariably have commit more mistakes relating to pronunciation and grammar. Adult learners' pronunciation tends to mimic their first language far more. Muñoz (2017) encourages people to start learning second language as soon as possible to maintain a positive learning attitude. This is corroborated by Yang (2018), who found that first-year students are far more active learners. Progressively, young learners of second language are able to optimize their second language learning by incorporating their early acquisition of it alongside their psychological growth as they mature (Larsen-Freeman, 2018). This allows for their holistic processes of cognition and maturity to be constantly updated.

The current conditions and methods of learning second language are more advanced, efficient, and convenient. Teachers and parents should be aware of the effect of age on young learners' ability to learn a second language and the environmental factors required to support that. To maximize young learners' benefits from superior *neural plasticity* (Birdsong, 2018), they should be guided to learn second language as soon as possible, and continue to learn under these environmental conditions for as long as possible before their psychological maturation changes the parameters of how they learn.

Why do these differences exist?

Research concerning cognitive psychology, linguistics and pedagogy cumulatively explains why significant differences exist between adult and young learners, and that these are caused by differences in thinking, consciousness as learners, memorization, and holistic psychological processes (Matthews et al., 2018). These process are complex, multi-layered and dynamic, and also indicate that regardless of age differences, individual learners' personalities, previous learning experiences and beliefs about learning strongly influence their ability to learn a second language. The age factor widens and partly compartmentalizes these individual differences.

Li and Zhao (2021) found that kindergarten children, benefit from their immature psychological maturity, are instinctive in vocabulary and grammar reception learning with regards to language learning and natural memory. In this way, young learners' immaturity as learners acts as an advantage, and causes them in particular to benefit from imitation and repetition. These make it easier for young learners to inculcate pronunciation and vocabulary learning. Gong et al. (2018) validly recommended prioritizing the socio-cultural environment for young learners learning second language, as building an environment that complement the young learners in learning second language. On the other hand, research on cognitive psychology and memory indicates that understanding adult learners' psychology is the key to strengthening their second language acquisition (Ryan et al., 2021). Additional research shows that adult learners can learn through the external social environment and advanced learning means to mitigate the defects of mature cognition. Finally, a scientific understanding of language input can facilitate successful acquisition of second language acquisition more effectively. Overall, the evidence about why differences exist between different ages of language learners suggests we must complement our understanding with an analysis of

optimizing the language learning environment for both type of learners, as a group and as individuals.

Research Question #2

What learning environments, and complimentary teaching methods. best support second language learners of difference ages?

The research agrees that learning environments are crucial for both young and adult learners. In regards to young learners, the family background is demonstrated to play a significant role. The higher educational level that the parents have, the higher their second language fluency are (Pikhart & Botezat, 2021). Velasco (2020) found that when bilingual parents communicate with their children in two languages simultaneously, the children's ability in the second language is almost equal to their mother tongue. It is common practice nowadays for parents to communicate with their children in both languages. This demonstrates that parents with a high educational background can support their children's learning. Research also demonstrates that more parents inquire from experts about how to optimize their approaches to support their child's learning at home (Velasco, 2020). Scholars often stress the importance in these circumstances of combining the two languages (Bialystock et al., 2014). Through reading books or watching cartoons, research suggests that children benefit most from learning the two languages simultaneously, and not prioritizing one over the other.

Due to technological progress in recent decades, experts have developed many interactive formats, such as games, videos, audio and animation learning materials to support young learners to learn language. Hung et al. (2018) view this as a positive change that educators should incorporate into their teaching strategies. Many multimedia software allows young learners to learn a second language, practice, and communicate anytime and anywhere. The benefits of these are not confined to young learners only. Davis et al. (2018) stated that both adults and young learners can benefit from the wide range of learning choices from social media, websites and interactive learning resources. Pikhart and Botezat (2021) emphasized that language connections are built on social communication, which provide opportunities to practice vocabulary, pronunciation and syntax.

Positive home-learning environments for young learners must compliment the environment they experience at school. Many schools offer teachers continuous professional development programs to cultivate and improve their teaching levels and skills (Fischer et al., 2018). Schools should encourage teachers to participate in the exchange of ideas with international peers to enhance their teaching ability and acquaint their students with creative teaching methods (Major & Watson, 2018). Multimedia imparts great benefits to language learning by making learning more vivid and interesting (Wang et al., 2019). Using multimedia courseware or CD-ROM for teaching can reduce the limited value of teacher-led activities in second language learning, and therefore provide more opportunities to stimulate students' active learning. Chen et al. (2020) agreed that multimedia application have brought far more opportunities for diversifying learning of a second language. Overall, in the twenty-first century, learners can benefit a lot from technological innovation in learning second language. These should be consistently assessed by educators to meet the needs of their students, regardless of age. The best learning environments and teaching strategies for both child and adult learners will incorporate technology appropriately, and provide opportunities for young learners as well as adult learners to interact and direct their own learning.

Conclusion

The evidence from researches proved that age influences second language acquisition in many ways. As a result, the difference nuances of the cognitive level and psychological attitudes at various stages of life must be understood by educators and parents to optimize second language teaching. There are also researches that highlighted the importance of educators to understand second language learners in individual terms, as crucial a point in guiding their successful learning. While numerous differences exist between ages exist, optimized learning will always take the individual into account.

For both age groups, there are evidence that indicates that learning environment should be prioritized by educators so that they can understand how optimum environments for young learners differ from those of adult learners. Most language learners still master English through classroom learning and therefore teachers should consider the actual age of learners to formulate appropriate teaching content, choose teaching forms, cultivate students' interest in English, and most crucially avoid exerting a lot of academic pressure on students. Second language teaching should be reformed to reduce the negative impact of exam-oriented psychology and utilitarianism on students' learning English. Teachers of both age groups should encourage students to communicate and interact with one another in English as much as possible, prioritizing the benefits of learning through social interaction.

Learners of second languages should be able to cultivate their personal interests, put in concerted efforts, and create a language environment that benefits themselves as individuals in their daily life. The main difference here between adult learners and young learners is that adult learners have more ability to create this environment for themselves compared to young learners. Yet, both age groups suffer from the myopic thinking that English is only an examination subject, and realize that English is a valuable means of communication and a way of thinking. Likewise, both age groups will benefit the most from diversifying their learning strategies and including as many multimedia resources as possible to facilitate their learning. Overall, this paper shown that considerable differences exist between different ages of second language learners, and the teaching methods and environmental factors that optimize second language learning are pedagogically connected with one another.

References

- Bernal Castañeda, S. (2017). Lifelong learning and limiting factors in second language acquisition for adult students in post-obligatory education. *Cogent Psychology*, 4(1), 1404699. <https://doi.org/10.1080/23311908.2017.1404699>
- Birdsong, D. (2018). Plasticity, Variability and Age in Second Language Acquisition and Bilingualism. *Frontiers in Psychology*, 9, 81. <https://doi.org/10.3389/fpsyg.2018.00081>
- Bylund, E., Hyltenstam, K., & Abrahamsson, N. (2021). Age of acquisition – not bilingualism – is the primary determinant of less than nativelike L2 ultimate attainment. *Bilingualism: Language and Cognition*, 24(1), 18–30. <https://doi.org/10.1017/S1366728920000188>
- Chen, G., Chan, C. K. K., Chan, K. K., Clarke, S. N., & Resnick, L. B. (2020). Efficacy of video-based teacher professional development for increasing classroom discourse and student learning. *Journal of the Learning Sciences*, 29(4–5), 642–680. <https://doi.org/10.1080/10508406.2020.1783269>
- Davis, D., Chen, G., Hauff, C., & Houben, G.-J. (2018). Activating learning at scale: A review of innovations in online learning strategies. *Computers & Education*, 125, 327–344. <https://doi.org/10.1016/j.compedu.2018.05.019>
- Dekeyser, R. (2018). The critical period hypothesis: A diamond in the rough. *Bilingualism: Language and Cognition*, 21(5), 915–916. <https://doi.org/10.1017/S1366728918000147>
- Fischer, C., Fishman, B., Dede, C., Eisenkraft, A., Frumin, K., Foster, B., Lawrenz, F., Levy, A. J., & McCoy, A. (2018). Investigating relationships between school context, teacher professional development, teaching practices, and student achievement in response to a nationwide science reform. *Teaching and Teacher Education*, 72, 107–121. <https://doi.org/10.1016/j.tate.2018.02.011>
- Gong, T., Shuai, L., & Wu, Y. (2018). Rethinking foundations of language from a multidisciplinary perspective. *Physics of Life Reviews*, 26–27, 120–138. <https://doi.org/10.1016/j.plrev.2018.04.004>
- Hartshorne, J. K., Tenenbaum, J. B., & Pinker, S. (2018). A critical period for second language acquisition: Evidence from 2/3 million English speakers. *Cognition*, 177, 263–277. <https://doi.org/10.1016/j.cognition.2018.04.007>
- Havron, N., & Arnon, I. (2021). Starting Big: The Effect of Unit Size on Language Learning in Children and Adults. *Journal of Child Language*, 48(2), 244–260. <https://doi.org/10.1017/S0305000920000264>
- Hung, H.-T., Yang, J. C., Hwang, G.-J., Chu, H.-C., & Wang, C.-C. (2018). A scoping review of research on digital game-based language learning. *Computers & Education*, 126, 89–104. <https://doi.org/10.1016/j.compedu.2018.07.001>

- Kessler, G. (2018). Technology and the future of language teaching. *Foreign Language Annals*, 51(1), 205–218. <https://doi.org/10.1111/flan.12318>
- Larsen-Freeman, D. (2018). Looking ahead: Future directions in, and future research into, second language acquisition. *Foreign Language Annals*, 51(1), 55–72. <https://doi.org/10.1111/flan.12314>
- Li, P., & Lan, Y.-J. (2021). Digital Language Learning (DLL): Insights from Behavior, Cognition, and the Brain. *Bilingualism: Language and Cognition*, 1–18. <https://doi.org/10.1017/S1366728921000353>
- Li, S., & Zhao, H. (2021). The methodology of the research on language aptitude: A systematic review. *Annual Review of Applied Linguistics*, 41, 25–54. <https://doi.org/10.1017/S0267190520000136>
- Lichtman, K., & VanPatten, B. (2021). Was Krashen right? Forty years later. *Foreign Language Annals*, 54(2), 283–305. <https://doi.org/10.1111/flan.12552>
- Long, M. H., & Granena, G. (2018). Sensitive periods and language aptitude in second language acquisition. *Bilingualism: Language and Cognition*, 21(5), 926–927. <https://doi.org/10.1017/S1366728918000184>
- Macintyre, P. D., Gregersen, T., & Mercer, S. (2019). Setting an Agenda for Positive Psychology in SLA: Theory, Practice, and Research. *The Modern Language Journal*, 103(1), 262–274. <https://doi.org/10.1111/modl.12544>
- Major, L., & Watson, S. (2018). Using video to support in-service teacher professional development: The state of the field, limitations and possibilities. *Technology, Pedagogy and Education*, 27(1), 49–68. <https://doi.org/10.1080/1475939X.2017.1361469>
- Matthews, D., Biney, H., & Abbot-Smith, K. (2018). Individual Differences in Children’s Pragmatic Ability: A Review of Associations with Formal Language, Social Cognition, and Executive Functions. *Language Learning and Development*, 14(3), 186–223. <https://doi.org/10.1080/15475441.2018.1455584>
- Muñoz, C. (2017). Tracing Trajectories of Young Learners: Ten Years of School English Learning. *Annual Review of Applied Linguistics*, 37, 168–184. <https://doi.org/10.1017/S0267190517000095>
- Muñoz, C. (2019). A New Look at “Age”: Young and Old L2 Learners. In J. W. Schwieter & A. Benati (Eds.), *The Cambridge Handbook of Language Learning* (1st ed., pp. 430–450). Cambridge University Press. <https://doi.org/10.1017/9781108333603.019>
- Ortega, L. (2019). SLA and the Study of Equitable Multilingualism. *The Modern Language Journal*, 103, 23–38. <https://doi.org/10.1111/modl.12525>

- Pfenninger, S. E., & Singleton, D. (2019). A critical review of research relating to the learning, use and effects of additional and multiple languages in later life. *Language Teaching*, 52(4), 419–449. <https://doi.org/10.1017/S0261444819000235>
- Pikhart, M., & Botezat, O. (2021). The Impact of the Use of Social Media on Second Language Acquisition. *Procedia Computer Science*, 192, 1621–1628. <https://doi.org/10.1016/j.procs.2021.08.166>
- Ryan, T. J., Ortega-de San Luis, C., Pezzoli, M., & Sen, S. (2021). Engram cell connectivity: An evolving substrate for information storage. *Current Opinion in Neurobiology*, 67, 215–225. <https://doi.org/10.1016/j.conb.2021.01.006>
- Sierens, S., Slembrouck, S., Van Gorp, K., Agirdag, O., & Van Avermaet, P. (2019). Linguistic interdependence of receptive vocabulary skills in emergent bilingual preschool children: Exploring a factor-dependent approach. *Applied Psycholinguistics*, 40(05), 1269–1297. <https://doi.org/10.1017/S0142716419000250>
- Suzuki, Y., Nakata, T., & Dekeyser, R. (2019). Optimizing Second Language Practice in the Classroom: Perspectives from Cognitive Psychology. *The Modern Language Journal*, modl.12582. <https://doi.org/10.1111/modl.12582>
- Velasco, E. (2020). *Oral Nativeness Acquisition in English as a Second Language Environments: A Case Study of Planned Bilingualism*. 24.
- Veríssimo, J. (2018). Sensitive periods in both L1 and L2: Some conceptual and methodological suggestions. *Bilingualism: Language and Cognition*, 21(5), 932–933. <https://doi.org/10.1017/S1366728918000275>
- Wang, J., Mendori, T., & Hoel, T. (2019). Strategies for Multimedia Learning Object Recommendation in a Language Learning Support System: Verbal Learners Vs. Visual Learners. *International Journal of Human–Computer Interaction*, 35(4–5), 345–355. <https://doi.org/10.1080/10447318.2018.1543085>
- Westergaard, M. (2021). Microvariation in multilingual situations: The importance of property-by-property acquisition. *Second Language Research*, 37(3), 379–407. <https://doi.org/10.1177/0267658319884116>
- White, E. J., Titone, D., Genesee, F., & Steinhauer, K. (2017). Phonological processing in late second language learners: The effects of proficiency and task. *Bilingualism: Language and Cognition*, 20(1), 162–183. <https://doi.org/10.1017/S1366728915000620>
- Wirth, A., Ehmig, S. C., Drescher, N., Guffler, S., & Niklas, F. (2020). Facets of the Early Home Literacy Environment and Children’s Linguistic and Socioemotional Competencies. *Early Education and Development*, 31(6), 892–909. <https://doi.org/10.1080/10409289.2019.1706826>

- Xue, J., Hu, X., Yan, R., Wang, H., Chen, X., & Li, M. (2021). Onset Age of Language Acquisition Effects in a Foreign Language Context: Evidence from Chinese–English Bilingual Children. *Journal of Psycholinguistic Research*, 50(2), 239–260. <https://doi.org/10.1007/s10936-019-09637-y>
- Yang, C. (2018). A formalist perspective on language acquisition. *Linguistic Approaches to Bilingualism*, 8(6), 665–706. <https://doi.org/10.1075/lab.18014.yan>
- Yi, P. (2021). The Role of Theory in SLA Empirical Research on the Critical Period Hypothesis. *Studies in Applied Linguistics and TESOL*, 21(1). <https://doi.org/10.52214/salt.v21i1.8396>

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