omparative Study of Experiential Learning Cycle in Human and Nonhuman Environments: Critical Thinking, Reading Comprehension, and Vocabulary Development

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Abstract

Educational experts posit that technology-based experiences can augment students' academic performance and foster their critical thinking ability. In this study, the efficacy of human-mediated and non-human-mediated environments was compared in terms of Kolb's experiential learning cycle, concerning the critical thinking, reading comprehension, and vocabulary development of young English language learners. Over a period of four months, two groups of 60 learners (30 in each group) were exposed to mediation via two modalities: teacher-made and computer-made mediators. Pre-tests and post-tests were deployed to gauge learners' progress is in critical thinking, reading comprehension, and vocabulary development. The findings evinced those learners who received technology-medicated instruction outperformed the teacher-mediated group in terms of critical thinking, vocabulary development, and reading comprehension. It is evident that learners who interacted with a computer mediator trumped those who interacted with a human-made mediator, i.e., the teacher. This could be attributed to the alluring features of non-human mediators (technology), which are evidently more compelling than their human counterparts.

***Keywords*:** critical thinking, experiential learning, reading comprehension, teacher mediator, technology mediator

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References

Abdullah, A. A., Shanti, W. N., & Sholihah, D. A. (2020). Critical thinking ability through experiential learning in the calculus class. *Journal of Physics: Conference Series* 1613(1) https://doi:10.1088/1742-6596/1613/1/012002

Aljemely, Y. A. (2022). Impact of Online Video Games on the Acquisition of the English Language. Journal of Positive School Psychology, 6(4), 11253–11263 https://www.journalppw.com/index.php/jpsp/article/download/6762/4432/7897

Alagozlu, N. (2007). Critical thinking and voice in EFL writing. *Asian EFL Journal*, *9* (3), 118–136. https://www.researchgate.net doi:10.1016/j.sbspro.2013.10.407

Azizi, Z., Namaziandost, E., & Rezai, A. (2022). Potential of podcasting and blogging in cultivating Iranian advanced EFL learners' reading comprehension. *Heliyon 8*, 09473. https://www.cell.com/heliyon

Bakhtiari Moghadam, Z., Haddad Narafshan, M. & Tajadini, M. (2021). Development of a Critical Self in the Language Reading Classroom: An examination of Learners' L2 Self, *Thinking Skills and Creativity 42,* 100944. doi: https://doi.org/10.1016/j.tsc.2021.100944

Barker A.C., Jensen P.J. & Kolb D.A. (2002) *Conversational Learning: An Approach to Knowledge Creation*. Westport, CT. https://www.researchgate.net/publication/241132618_Conversational_learning_An_experiential_approach_to_knowledge_creation

Bećirović, S., Brdarević-Čeljo, A. & Haris Delić, H. (2021). The use of digital technology in foreign language learning. *National library of medicine: pubmed.gov1*(10), 1-21. https://link.springer.com/article/10.1007/s43545-021-00254-y

Bloom, B. S., Engelhart, M. D., Furst, E. J., Hill, W. H. & Krathwohl, D. R. (1956). In Bloom B. S. (Ed.), *Taxonomy of educational objectives: The classification of educational goals. Handbook. 1: cognitive domain*. David McKay.

https://eclass.uoa.gr/modules/document/file.php/PPP242
Fahim, M., Bagherkazemi, M. & Alemi, M. (2010). The relationship between test takers' critical thinking ability and their performance on the reading section of TOEFL. *Journal of Language Teaching and Research*, *1*, 6, 830–837. doi:10.4304/jltr.1.6.830-837

Fisher, R. (2005). Teaching children to learn (2nd ed.). Nelson Thornes. https://www.jstor.org/stable/23767252
Flannigan, E. (2017). The Evaluation and Testing Exam for Family and Friends Book. https://pdfcoffee.com/family-and-friends-5-testing-and-evaluation-book-full-pdf-free.html
Flavin, M. (2020). *Reboot the Messenger: A Narrative for Technology Enhanced Learning. In Re-imagining Technology Enhanced Learning* (pp. 121-144). Palgrave Macmillan, Cham. doi:10.1007/978-3-030-55785-0_7
Foo**,** S. Ch**.,** & Foo, K. Kh. (2022). Purposeful Field Trip: Impact on Experiential Learning Opportunities and Critical Thinking Skills. *Social Sciences and Humanities Journal*. http://pertanika.ump.edu.my/ doi: https://doi.org/10.47836/pjssh.30.1.01
Gao, X. & Zheng, Y. (2019). Multilingualism and higher education in Greater China. *Journal of Multilingual and Multicultural Development* *40* (7), 1-7.doi:10.1080/01434632.2019.1571073
Grusin, R. (2015). Radical mediation. *Critical Inquiry, 42* (1), 124-148. http://www.jstor.org/stable/10.1086/682998
Guillory, J. (2010). Genesis of the Media Concept. *Critical Inquiry* 36, 354. https://www.sas.upenn.edu/~cavitch/pdf-library/Guillory_Genesis.pdf
Hamzehnejadi, N., Haddad Narafshan, M. & Jalali, V. (2023). The Effect of Technology-Integrated Multiple Intelligences Instruction on EFL Learners' Burn Out and Vocabulary Learning. *Journal of Applied Linguistics Studies 2* (2), 68-81. https://jals.aliabad.iau.ir
Heidari, K. (2020). Critical thinking and EFL learners' performance on textually-explicit, textually- implicit, and script-based reading items. *Thinking Skills and Creativity*, *37*, 100703. https://doi.org/10.1016/j.tsc.2020.100703
Heinrich, W. F., Geoffrey B. Habron, G. B., Johnson, H.L., & Lissy Goralnik, L. (2015). Critical Thinking Assessment Across Four Sustainability-related Experiential Learning Settings.

Journal of Experiential Education 38(4) 373–393.
www.sagepub.com https://doi.org/10.1177/1053825915592890

Hidalgo, A., Gabaly, S., Morales-Alonso, G., & Urueña, A. (2020). The digital divide in light of sustainable development: An approach through advanced machine learning techniques. *Technological Forecasting and Social Change*, *150,* 119754. https://doi.org/10.1016/j.tech-ore.2019.119754

Hitosugi, C.I., Schmidt, M. and Hayashi, K. (2014) Digital Game-Based Learning (DGBL) in the L2 Classroom: The Impact of the UN's Off-the-Shelf Videogame, Food Force, on Learner Affect and Vocabulary Retention. *CALICO Journal, 31*, 19-39. http://dx.doi.org/10.11139/cj.31.1.19-39

Honey, P. (2004). Critical thinking questionnaire. Retrieved Oct, 2004 from http://www.peterhoney.com

Hsiao, E. L., Mikolaj, P., & Shih, Y. T. (2020). Establishing a multimedia-rich environment to support experiential e-learning in business education. *Journal of Educators Online*, *17* (2). Available in https://eric.ed.gov/?id=EJ1268929

Hui, W., Hu, P. J. H., Klark, T. H. K., & Tam, K. Y. (2008). Technology-assisted learning: A longitudinal field study of knowledge category, learning effectiveness and satisfaction in language learning. *Journal of Computer Assisted Learning* *24*(3), 245 – 25 doi:10.1111/j.1365-2729.2007.00257.x

Huong, L. P. H. & Hung, B. P. (2021). Mediation of digital tools in English learning. *LEARN Journal: Language Education and Acquisition Research Network*, *14*(2), 512-528. https://so04.tci-thaijo.org/index.php/LEARN/index

Hurwitz, L.B., & Schmitt, K.L. (2020). Can children benefit from early internet exposure? Short- and long-term links between internet use, digital skill, and academic performance. *Computer Education 146*. https://doi.org/10.1016/j.compedu.2019.103750

Ismail, H & Saiful, S. (2022). Implementing Experiential Learning on Students Reading Comprehension. http://ejournal.iainpalopo.ac.id/index.php/ideas/article/view/2885/0 doi : 10.24256/ideas.v10i1.2885

Ives, B., Obenchain, K. M. (2006). Experiential Education in the Classroom and
Outcomes: For Those Who Want it All. *Journal of Experiential Education 29*(1):61-77 .
http://DOI:10.1177/105382590602900106
Jeon, E. H., & Yamashita, J. (2014). L2 Reading Comprehension and Its Correlates: A
Meta-Analysis. *Language Learning, 64*(1), 160–212. https://doi.org/10.1111/lang.12034

Jeyaraj, J. S. (2019). Traditional Learning vs. Experiential Learning. http://www.researchgate.net
doi:10.2139/ssrn.3486129
Kamp, A. (2017). Humans, nonhumans, and the mediation of workplace learning in the senior school curriculum. *Journal of Vocational Education & Training,* 69(2), 214-228. https://doi.10.1080/13636820.2016.1278395
Kennedy, R. A. (2017). The Effect of Narrative Feedback on the Learning and Transfer of
Complex Communication Skills. Doctoral dissertation, Old Dominion University.
https://digitalcommons.odu.edu/psychology_etds/57
Knutson, S. (2003). Experiential Learning in Second-Language Classrooms**.**
TESL Canada Journal, 20(2). doi:10.18806/tesl.v20i2.948
Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and*
development. Upper Saddle River, NJ: Prentice-Hall.
http://doi.org/10.1016/B978-0-7506-7223-8.50017-4
Lai, C.H., Yang, J.C., Chen, F.C., Ho, C.W., Liang, J.S. & Chan, T.W. (2005) Improving
experiential learning with mobile technologies. In *Proceedings of the IEEE International*
Workshop on Wireless and Mobile Technologies in Education. 141–145.
https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1365-2729.2007.00237.x
Lantolf, J. P. (2006). Sociocultural theory and L2: State of the art. *Studies in Second Language*
Acquisition, 28(1) 67-109. https://doi.org/10.1017/S0272263106060037
Le, P. H. H. (2021). Textbook mediation in EFL university students' learning. *Language Related*
Research Journal, *12*(3), 255-276. https://lrr.modares.ac.ir/article-14-48800-fa.pdf
Lai, Ch. (2015). Modeling teachers' influence on learners' self-directed use of technology for
language learning outside the classroom. Computer Education. 82,74-83
https://doi.org/10.1016/j.compedu.2014.11.005.

Marzban, A., Barati, Z. (2016). On the Relationship between Critical Thinking Ability,
Language Learning Strategies, and Reading Comprehension of Male and Female
Intermediate EFL University Students. *Theory and Practice in Language Studies, 6* (6):
1241-1247. doi: http://dx.doi.org/10.17507/tpls.0606.14

McKeown, M.G.; Beck, I.L.; Omanson, R.C.; Perfetti, C.A. (1983). The effects of long-term
vocabulary instruction on reading comprehension: A replication. *J. Read. Behavior. 15*, 3–
18. https://journals.sagepub.com/doi/abs/10.1080/10862968309547474

Moon, J. (2008). *Critical Thinking of Theory and Practice*. Library of Congress: UK.

Moosavi, L. (2020). "Can East Asian Students Think?": Orientalism, Critical Thinking, and the
Decolonial Project. *Education Sciences. 10*(10).
286; https://doi.org/10.3390/educsci10100286

Movahedpour, A. A., & Naeimi, A. (2022). The retroactive effect of L2 on L1 in word recall and lexical activation. https://jostarnameh.yazd.iau.ir/article_697271_09f7992b8d7944f808c552c01e520ee8.pdf

Naeini, J. (2005). *The effect of collaborative learning on critical thinking of Iranian EFL*
learners. Unpublished M.A. thesis Azad University, Central Tehran Branch, Tehran, Iran.
https://scholar.google.com/citations?user=Jk-oXVQAAAAJ&hl=en

Orozco, A. A.T., Alvarez, A. E., & Duque, M. (2017). Experiential learning to introduce English
vocabulary to early childhood at C.D. regional Ridaralda.
https://repositorio.utp.edu.co/server/api/core/bitstreams/bab09bc6-6c0e-43e9-8a50-_7096f81d4179/content

Raja. F. U. & Najmonnisa. (2018). Comparing Traditional Teaching Method and Experiential
Teaching Method using Experimental Research. *Journal of Education and Educational*
Development, 5 (2), 276-288.
https://files.eric.ed.gov/fulltext/EJ1200262.pdf

Rasinski, T., & Rupley, W. H. (2018). *Vocabulary Development. Education sciences*.
https://ila.onlinelibrary.wiley.com/doi/abs/10.1002/trtr.1734

Romero, E. D. & Bobkina, J. (2021). Exploring critical and visual literacy needs in digital.
learning environments: The use of memes in the EFL/ESL university classroom.
Thinking Skills and Creativity *Science Direct.* (40).

https://doi.org/10.1016/2020.100783

Seng, A. S. H., Pou, L. K. H., & Tan, O. S. (2003). Mediated learning experience with children.

Singapore: McGraw-Hill.
https://www.academia.edu/79146786/An_Investigation_into_the_Knowledge_of_Mediation_with_English_Teachers
Syafrizal, S., Masrupi, M. & Mauludah, I. (2019). The Impact of Experiential Learning Method
and Vocabulary Mastery Toward Indonesian Students' Reading Comprehension through
Animation Video. *Journal for the Education of Gifted Young Scientists, 7*(3), 449-458.
https://dergipark.org.tr/en/download/article-file/806149
doi: http://dx.doi.org/10.17478/jegys.531412
Tao, J., & Gao, X. (2022). Teaching and learning languages online: Challenges and responses. *System*, *107*, 102819. https://doi.org/10.1016/j.system
Tuma, F. & Nassar A. (2021). Applying Bloom's taxonomy in clinical surgery: Practical
examples. *Annals of Medicine and Surgery* *69*(4), 102656
doi:10.1016/j.amsu.2021.102656

Vygotsky, L. (1978). Mind in society: The development of higher psychological process.
Cambridge, MA: Harvard University Press (Original work published in 1930-33).
https://www.jstor.org/stable/j.ctvjf9vz4
Yang, Y. T. C., Gamble, J. H., Hung, Y. W., & Lin, T. Y. (2013). An online adaptive learning
environment for critical-thinking-infused English literacy instruction. *British Journal of*
Educational Technology. doi:10.1111/bjet.12080
Yang, M., Yuan, R., & Stapleton, P. (2020). Enhancing undergraduates' critical thinking through
research engagement: A practitioner research approach. *Thinking Skills and Creativity*
Journal, 39 (2). doi:10.1016/j.tsc.2020.100737

Ye, J. (2007). Adapting communicative language teaching approach to China's context. *Sino-US Teaching*, *4*(10). https://www.researchgate.net/publication/242103738_Adapting_communicative_language_teaching_approach_to_China's_context

فصل‌نامهٔ علمی جستارنامهٔ ادبیات تطبیقی

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مطالعهٔ تطبیقی یادگیری تجربی توسط میانجی‌گرهای انسانی و فناوری: تفکر انتقادی، درک مطلب و افزایش واژگان

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چکیده

مسئولان آموزشی بر این باورند که تجربه و فناوری می‌تواند پیشرفت تحصیلی کودکان خردسال را افزایش دهد و سطح پنهان تفکر انتقادی آن‌ها را فعال کند. بنابراین، هدف از این مطالعه مقایسهٔ تأثیر میانجی‌گرهای انسانی و فناوری بر تفکرانتقادی ، درک مطلب و توسعهٔ واژگان زبان آموزان کودک با استفاده از تئوری یادگیری تجربی بود. به همین منظور، دو گروه شصت نفری فراگیر (سی دانش‌آموز در هر گروه) در طی چهار ماه در معرض دو نوع میانجی‌گر قرار گرفتند: معلم و تکنولوژی. از پیش آزمون و پس آزمون برای سنجش میزان پیشرفت زبان‌آموزان در تفکر انتقادی، درک مطلب و تسلط بر واژگان استفاده شد. نتایج نشان داد که فراگیران در گروه آزمایش با واسطهٔ فناوری نسبت به گروه با واسطهٔ معلم در سطح تفکر انتقادی، توسعهٔ واژگان و درک مطلب برتری داشتند. این نشان می‌دهد که فراگیرانی که به واسطهٔ کامپیوترو فناوری در تعامل هستند، از کسانی که با یک واسطهٔ انسان، یعنی معلم تعامل دارند، پیشی می‌گیرند. یافته‌های ما پیشنهاد می‌کند که

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واسطه‌های غیرانسانی (فناوری) از انسان‌ها قانع‌کننده‌تر هستند، احتمالاً به دلیل ویژگی‌های فریبنده‌شان که انگیزه و الهام یادگیرندگان را افزایش می‌دهد.

کلیدواژگان: تفکر انتقادی، یادگیری تجربی، درک مطلب، میانجی‌گر معلم، میانجی‌گرفناوری

1. Introduction

Considering the remarkable acceleration of technology, the diminished presence of teachers, and the widespread proliferation of digital media technologies, known as mediatization, mediation has emerged as a central intellectual quandary of the twenty-first century (Guillory, 2010). According to Lantolf (2006), mediation is a fundamental concept within sociocultural theory (SCT). The process of mediation involves the refraction of an individual's comprehension through the experiences of others, and in educational contexts, it entails learning through semiotic tools, such as spoken and written languages, cultural artifacts like books, computers, and technology, or human potential. The learning process is mediated through the interaction between learners and others, such as teachers and peers, and the use of tools that promote reasoning, strategic orientation, problem-solving, and critical thinking (Huong & Hung, 2021).

The process of mediation, as posited by Vygotsky (1978), involves the employment of symbolic elements and sociocultural constructs in human mental activity (Le, 2021). In the realm of education, the Vygotskyan theory of mediation has introduced a novel perspective, enabling teachers to implement the theory in a variety of ways to facilitate the connection between learners' current and future zones of development. A mediator may employ material tools, psychological tools, or other individuals and non-human entities, thereby serving as a conduit for the emergence of subjects and objects through experience and the individuation of entities within a given world (Flavin, 2020). Consequently, mediation should not be construed as an intermediary between pre-established subjects, objects, or entities, but rather as a process, action, or event that generates or provides conditions for their emergence (Grusin, 2015).

On the contrary, individuals in the proximity of learners fulfill the role of mediators who may encompass parents, facilitators, teachers, or any other significant entity that deliberately contributes towards describing, emphasizing, interpreting, or expanding the environment to enable the learner to develop an internal model of the situation or world that holds significance (Seng et al., 2003). Instead of solely imparting language knowledge, teachers aid students to implement the same in language classrooms mostly through reading comprehension, vocabulary mastery or vocabulary recalling (Movahedpour & Naeimi, 2022; Fisher, 2005). Recent reforms have underscored the importance of autonomy, critical thinking, and life-long education, thereby necessitating students to learn self-control, engage in active thinking, and acquire problem-solving skills (Ye, 2007).

In the realm of education, technology serves as a mediator that presents limitless opportunities for learning, socialization, recognition, and expression (Hidalgo et al., 2020). As a result, technology has emerged as an indispensable component of language instruction, encompassing computers, laptops, diverse devices, sophisticated applications, and global communication networks. Their

ubiquitous deployment in education has progressively escalated, as well as in other civic arenas (Bećirović et al., 2021).

Technology-mediated learning has become a prominent method of education that utilizes electronic technology. This approach has expanded the boundaries of language learning beyond the traditional school environment, thereby reducing the emphasis on teacher-mediated instruction. Both young and adult learners can benefit from this approach, as it offers immense educational potential within and outside the classroom. This learning method provides access to a diverse range of instructional materials through multiple educational platforms. It also facilitates participation in various online courses and exposure to lessons and tutorials from native speakers. Despite the challenges associated with integrating technology into language education, there are ample opportunities for language educators to do so. Therefore, researchers must document the valuable lessons learned from this historically unprecedented shift toward using technology as a crucial mediator to teach languages (Tao & Gao, 2022).

The academic setting of a classroom holds immense potential for facilitating valuable learning experiences through the utilization of its inherent mediators. These mediators assume distinct roles, each with their unique motivations and limitations. However, it is important to note that not all learners may benefit equally from these mediators. To cultivate a rich and conducive learning environment, it is imperative to incorporate a diverse range of actors, both human and non-human, who possess the ability to positively or negatively impact the learning process. Such mediators offer a plethora of opportunities for knowledge acquisition. Therefore, it is essential to meticulously evaluate the contextual requirements and accord detailed consideration to certain mediators that may prove to be particularly efficacious.

The socio-emotional development of children is influenced by their ability to cope with and adapt to a variety of experiences and obstacles. Hui et al. (2008) demonstrated that technology-assisted learning based on Kolb's (1984) experiential learning model can enhance students' acquisition of knowledge that demands reflective observation and abstract conceptualization. In order to effectively navigate the complex and constantly changing world with its increased demands, intellectual challenges, and greater accountability, modern learners must cultivate higher-level thinking and reasoning abilities based on their personal experiences. Experiential learning has been shown to enhance higher-order thinking skills such as critical prioritization, analytical perception, logical and analogical reasoning, questioning skills, and the ability to go beyond mere knowledge acquisition into the realms of discovery, reasoning, organization, argumentation (Ives & Obenchain, 2006), and creativity (Romero & Bobkina, 2021).

In contemporary society, Bloom's critical thinking skills (CST) have been identified as a crucial competency for success among young and adult learners

due to the rapid pace of technological development, information diffusion, and digitization of learning (Yang et al., 2013). The increasing global emphasis on CT has also led to a greater focus on English literacy in educational research worldwide. Given that thinking skills are fundamental to literacy development, educators have advocated for the promotion of CT in English as a Second or Foreign Language (ESL/EFL) instruction. By incorporating Kolb's experiential learning theory (1984) and Bloom's critical thinking taxonomy (1956) into the field of education, students can make significant progress and integration in their academic achievement, particularly in reading skills and vocabulary mastery, which helps them to enhance their learning experience with the aid of various human and non-human mediators.

A more profound understanding and implementation of the agents that bring about the development of experience and the expansion of cognitive abilities in children may enhance attempts at promoting this construct through intervention. The current investigation contributes to the relatively sparse body of research in this area through the utilization of quantitative methodology to compare the impact of experiential learning through teacher-mediated English reading texts versus experiential learning through computer-mediated English reading texts on critical thinking, reading comprehension, and vocabulary outcomes in 10-year-old children of both genders. Accordingly, the present study sought to answer the following research questions:

1. Comparing human and non-human mediators, which form is more effective in increasing EFL learners' reading comprehension in Kolb's experiential learning cycle?
2. Comparing human and non-human mediators, which form is more effective in boosting EFL learners' vocabulary in Kolb's experiential learning cycle?
3. Comparing human and non-human mediators, which form is more effective in fostering EFL learners' critical thinking in Kolb's experiential learning cycle?

2. Literature Review

Vygotsky's of Theory of Mediation

The educational setting possesses the potential to serve as a noteworthy avenue for learning when we actively employ the mediators that are inherent within said environment. The rationale for this assertion is that these mediators occupy varied roles, each of which is executed with distinct motivations and limitations. It is important to note that not all students will derive the same degree of benefit from these mediators. As posited by McGonagle (2012), to cultivate a rich learning milieu within the classroom, it is imperative that a comprehensive range of actors, both animate and inanimate, who influence classroom learning in both constructive and detrimental ways, be incorporated. Different mediators afford diverse learning opportunities. Of particular note,

one mediator, as determined by the contextual exigencies, warrants more in-depth examination (Kamp, 2017). Vygotsky (1978) believed that human cognition is constructed and activated through human beings' interactions with the outer world, and human cognition is the offspring of the relationship between subjects and objects. According to sociocultural theory, interaction and community in the context play a significant role in "making meaning". This mediation can be done through people or by signs. Learners transfer knowledge and input from the outside world to the inner world of their minds and cognitions through signs. Along the stimulus-response connection route, signs take the role of mediators in the form of symbolic signs such as schemes or pictures, moderate learning tribulations, and boost cognitive functions of learning and memorization. A mediator assists, supports, and guides a person to achieve his or her goals. There are three types of mediation: material tools, psychological tools, and other people (Flavin, 2020). Vygotskyan theory of mediation has brought different air to the field of education and teachers can use different mediators in different ways to connect the learners' present zone of development (what they know) to their ZPD (what they want to know).

Experiential Learning Theory and Critical Thinking Taxonomy

Kolb (1984) and Knutson (2003) verified that the experiential perspective contributes to a more holistic and compound view of learning by combining experience, perception, cognition, and behavior. Kolb's Model (1984) of four orientations of learning is a c*oncrete experience* that is obtained by participants taking part in a common task (experience through senses) whereas the participation of each participant depends on his/her previous experiences*, reflective observation* follows after action taking, the participant evaluates the course of the activity and then looks for the *abstract conceptualization* of what would be more appropriate for the next time which gradually results in the formation of a changing plan and verified by *active experimentation.*

Moon (2008) believed that experience and involvement are crucial in life. This is because involvement stimulates the senses and deep thinking, whether inside or outside of ourselves. He has brought three main "outside boundaries" to experiential learning: first, experiential learning is done on purpose and delicately therefore it takes effort and endeavor. Second, if the experience happens at the right time and in the right place, it is adequate and ample. Third, experiential learning environments must be flexible and allow students to make mistakes (by making mistakes we can learn). Besides learning through experience, thought power should be highlighted. In this regard, Heinrich et al. (2015) reported that experiential learning with correctly scaffolded critical thinking activities and procedures results in strong critical thinking outcomes.

Foo and Foo (2022) designed a purposeful field trip to give learners more opportunities to display higher-order thinking abilities at all three stages of the field trip (before, during, and after). Qualitative research indicates that field visits offer students significant experiential learning opportunities to enhance a wide range of cognitive skills. According to Abdullah et al. (2020), the initial step involves a tangible experience that showcases critical thinking in interpretation, i.e., the ability to comprehend and articulate the underlying meaning of data or circumstances. The second stage of reflective observation entails analytical signs of critical thinking. The third phase of abstract conceptualization can provide assessment indications of critical thinking capacity, i.e., the ability to analyze every component in a given problem or circumstance. Abstract conceptualization necessitates pupils to logically examine concepts and apply their comprehension of a situation. The fourth stage of active experimentation may establish decision indicators for critical thinking, namely, the ability to draw conclusions from an issue.

The impact of critical thinking abilities on language proficiency has been investigated, with research indicating a significant relationship between CT and reading capabilities (Bakhtiari Moghadam et al., 2021; Fahim et al., 2010). These studies have reported that individuals with advanced levels of CTS possess superior skills in articulating their ideas coherently and incorporating their perspectives in both written and oral communication, as opposed to merely duplicating information from external sources without embellishment (Alagozlu, 2007).

3. Methodology

Participants

In the present quasi-experimental quantitative investigation, two intact classes were allocated to a teacher-mediated and technology-mediated condition. The research questions were addressed by surveying sixty grade-four students, comprising of 39 females and 21 males, who attended Pishtazan Computer Primary School in Kerman, Iran, during the academic year 2022-2023. One class was randomly designated as a human-mediated group, while the other was designated as a technology-mediated group. A total of 30 students were assigned to each group (15 females and 15 males in technology-mediated, 24 females and 6 males in human-mediated) who had no prior experience with experiential learning instruction. The study participants (N = 60) were 10 years old in both groups (technology-mediated: M=28.80, SD=2.89, human-mediated: M=27.75, SD=3.32). The present study was granted ethical approval by school administrators and parents. It was explicitly communicated to the students that opt-out was a viable option for course enrollment notwithstanding research participation. Compensation was not offered to the project's participants, who voluntarily engaged in the study.

Instruments

Young Learner's English (YLE) Test

A questionnaire on Critical Thinking, adapted from Naieni's work (2005), was employed to assess the critical thinking ability of the participants in evaluating analysis, inference, evaluation, and reasoning. This assessment was conducted both prior to and after the treatment. The questionnaire was originally created and validated by Honey (2004) based on Bloom's taxonomies. Bloom (1956) has categorized thinking into six stages: knowledge, comprehension, application, analysis, evaluation, and creation. The scale was subsequently refined for Iranian EFL learners, comprising 30 items employing a 5-point Likert scale. To assign numerical values to the participants' responses and calculate the test results, each option was given a value, with never equated to 1, rarely to 2, sometimes to 3, often to 4, and always to 5. The reliability of the questionnaire was evaluated using Cronbach's alpha, yielding a high internal consistency of 0.85 for the pretest and 0.89 for the posttest. The test takes about 1 hour and 15 minutes to complete. Based on the results of the placement test, a significant majority of the examinees, specifically 85.5%, were identified as being at the elementary level of English language proficiency, while 14.5% were deemed to be at the pre-intermediate level. The researchers made the decision to eliminate the pre-intermediate cohort from the final analysis of data. The duration of the exam was estimated to be around 75 minutes.

Naieni's Critical Thinking Questionnaire

A survey instrument, which was adapted from Naieni (2005), was utilized to assess the critical thinking abilities of participants regarding analysis, inference, evaluation, and reasoning. The survey, originally devised and validated by Honey (2004), is based on Bloom's taxonomies, which classify thinking into six stages, namely, knowledge, comprehension, application, analysis, evaluation, and creation. The survey was specifically tailored for Iranian EFL learners and comprised 30 items that were rated on a 5-point Likert scale. To have an ensured significance of the participants' responses and the accuracy of the numerical test results, each option was assigned a corresponding value, such as never = 1, rarely = 2, sometimes = 3, often = 4, and always = 5. The reliability of the survey was determined by Cronbach's alpha, yielding a high internal consistency of 0.85 for the pretest and 0.89 for the posttest.

Reading Comprehension and Vocabulary Test

The assessment and examination of evaluation and testing textbook, by Flannigan in 2017, was administered as pre and post-tests for family and friends. These evaluations included reading comprehension with true/false, fill-

in-the-blank, and multiple-choice questions, as well as vocabulary tests with matching, missing, and completion questions. The primary objective of all tasks was to determine the text comprehension of the students. The participants were given one hour to answer the reading questions. The passages selected from the Family and Friends (5) Testing and Evaluation Book were considered valid in terms of difficulty, graded vocabulary items, grammatical structures, content, and face. The validity was approved by two experts in the field of language teaching and two experts in the field of research and statistics. Test-retest reliability was established using the test-retest method for the reading test. Fifteen students, similar to the target population, were examined to determine the test-retest reliability. The same examination was conducted on the same subject after a month to assess the consistency of the results. Pearson's correlation coefficient was utilized to evaluate the reliability coefficient value of the assessment. As illustrated in Table 1, the correlation coefficients associated with the examination tasks were significant, indicating that the assessment was reliable and consistent.

Table 1

Test-Retest Reliability Coefficient

Test-Retest Reliability Coefficient	Multiple-Choice	Filling the blanks	True/False	Overall
	0.90	0.85	0.93	0.96

Procedure

The participants were registered in a semester-long program on English reading comprehension intended for learners of English as a foreign language and the learners followed the following stages. In contrast to its teacher-mediated counterpart, in the computer-mediated group, there was no discernible indication of teacher presence or assistance for the first thirty minutes of the class.

Stage one: Concrete Experience

In the initial stage, the concept of “concrete experience” corresponds to a series of systematic instructions that demonstrate a new subject or idea to actively engage students. During the technology-mediated class, learners encountered various genuine language experiences by engaging in problem-solving questions. They were exposed to a variety of authentic language practices, such as the lyrics of songs, shopping lists, and food pyramids, as well as the written text in the course book to practice English language from diverse perspectives. Furthermore, they had access to digital images or definitions of newly

encountered words by simply clicking on them. By activating the text, the auditory component was initiated. Upon completion of the aforementioned reading material, participants were required to provide responses to the inquiries presented on the screen. Subsequently, they proceeded to acquaint themselves with the guidelines for the online game, followed by active participation therein. The ensuing exchange was conducted in a live, written format, whereby individuals perused the forum's dialogue and correspondingly provided answers to the questions posed in that respect.

In the teacher-mediated group, during the same period, the teacher commenced by inscribing the novel vocabulary and some easily understood inquiries on the blackboard. Following that, the teacher introduced the passage from the book, inquired about some pre-reading questions, exhibited certain flashcards or posters, and recited the text aloud while the students were verifying the pronunciation of the words and ascertaining the main idea of the text in order to unravel the questions inscribed on the board. The teacher granted permission to the students to reread the text to gain a thorough understanding of the content. Subsequently, the teacher illuminated the content with the assistance of the students who volunteered. The students were then tasked with answering the after-reading questions, discussing them one by one.

Stage two: Reflective observation

After being exposed to English language in various contexts, the participants were prompted to engage in reflective observation whereby they could express their thoughts and perceptions regarding what they had read and experienced. This entailed engaging in activities such as discussions and answering reflective questions that facilitated deeper contemplation of their hands-on experiences. Through this process, the participants were provided with an opportunity to openly articulate their thoughts and feelings, while also being receptive to the perceptions of others. It is notable that this stage was conducted over several sessions, with participation being purely voluntary. The computer served as the instructor for the technology-integrated classroom, requiring students to independently partake in activities sourced from the internet, such as locating texts related to the course material or identifying unscrambled games to play on Google. Conversely, in the human-mediated classroom, students were tasked with composing their own inquiries or crafting visual depictions and written analyses of their own passages.

In the process of reflection, students engaged in sharing their results, reactions, and observations with their peers. Furthermore, students discussed with their peers regarding their own experiences, reactions, observations, and feelings generated by the experience through chat forums or email. This sharing of knowledge serves as a means of reflecting on their discoveries and relating them to past experiences, which can be utilized in both human and virtually mediated contexts for future endeavors.

Stage three: Abstract conceptualization

During this phase of the educational process, students were prompted to respond to open-ended questions after engaging in reading to share their insights. Afterward, the participants were tasked with examining the provided reading material from a multifaceted perspective, deconstructing the information into more digestible components. Pertinent proficiencies were scrutinized and expanded upon, with a more thorough and comprehensive explanation. At this phase, the individuals proceeded to create innovative concepts or alterations based on the knowledge they acquired from their primary encounter. The technology-integrated group communicated primarily through spoken language in chat forums or by scanning QR codes displayed on the screen. The students then engaged in discussion, analysis, and reflection of their experiences by means of typed or voice messages. By describing and analyzing their experiences, the students were able to draw connections to future learning opportunities. Specifically, topics such as healthy food and essential vitamins were discussed in the chat forums, and the learners explored how the experience was executed, as well as the themes, problems, and issues that emerged from it. In the teacher-mediated group, pupils engaged in discourse amongst their peers while under the careful supervision and guidance of their instructor during a designated period of time.

Stage four: Active experimentation

At this phase, learners employed the knowledge they had acquired from their current and previous encounters, as well as their training, to either comparable or contrasting scenarios. Furthermore, they had the opportunity to deliberate on how the recently acquired methods could be implemented in other contexts. Students mediated by the practicality of the raised concerns in forthcoming circumstances and how enhanced practices can be developed from their newfound knowledge.

In the context of technology-mediated groups, students were tasked with creating augmented reality shows as projects, which included role-playing scenarios such as a doctor and patient. These shows were then uploaded to the designated site. Alternatively, students had the option to produce filmed interviews and subsequently e-mail them to their peers and teacher. Additionally, students were required to generate puzzles using various puzzle generator applications and create word clouds using new vocabulary on word cloud maker sites. In the human-mediated classroom, the teacher collaborated with the students to construct semi-authentic scenarios that allowed for real-life role-playing opportunities, such as establishing a hospital or grocery store.

4.Results

To scrutinize the research hypotheses, an initial step was taken to assess the normality of the data distribution. One possible approach for this is to carry out the Shapiro-Wilk test. Notably, all variables exhibited a significance level greater than 0.05. This finding implies that the distribution of variables in this particular study was normal, which consequently led to the utilization of parametric tests to investigate the research questions.

To address the initial research inquiry and to scrutinize the primary null hypothesis, an assessment was conducted to determine the homogeneity of variance, the linear relationship between the dependent variable and covariate, as well as the homogeneity of regression slopes (as displayed in Tables 2 and 3). The p-value of greater than .05 in the present study enabled the researcher to fulfill the prerequisite of homogeneity of variance and proceed with a one-way ANOVA. Furthermore, the absence of an interaction between the covariate and the dependent variable was established with regards to the homogeneity of regression slopes. Consequently, the researcher conducted an ANCOVA test for the reading comprehension variable.

Table 2

Test of Homogeneity of Variances (*Reading Comprehension*)

F	df1	df2	P-Value
0.64	1	58	0.8

Table 3

Test of homogeneity of regression slopes (Reading Comprehension)

Source	Sum of Squares	df	Mean Square	F	P-Value
Group	144.517	1	144.517	54.365	0.00
Pretest	51.222	1	51.222	19.269	0.00
Pretest× Group	7.776	1	7.776	2.925	0.09
Error	148.865	56	2.658	-	-

Table 4

Covariance Analysis of Reading Comprehension

Source	Sum of Squares	Df	Mean Square	F	P-Value	partial η^2
Pretest	49.526	1	49.526	18.022	0.000	
Group	646.819	1	646.819	235.371	0.000	0.81
Error	156.641	57	2.748	-	-	
Corrected Total	826.983	59	-	-	-	

According to the data presented in Table 4, a statistically significant difference exists between the average scores of the experimental group and the control group with regards to the post-test results of Reading Comprehension. As such, the use of technology-integrated experiential learning has a noteworthy impact on the improvement of learners' reading comprehension abilities ($p<0.01$). The estimated partial Eta Squared value of (partial $\eta 2 = 0.81$) indicates a large effect size. Consequently, the null hypothesis is rejected.

Table 5

Estimated Marginal Means (Reading Comprehension)

Group	Estimated Marginal Mean	Std.Error
Control	11.39	0.30
Experimental	17.98	0.30

Based on the estimated marginal means, it can be observed that the experimental group exhibited superior performance in Reading Comprehension when juxtaposed with the control group, as presented in Table 5.

To address the second research inquiry and evaluate the second null hypothesis, the examination of Levene's test and normality checks were undertaken while ensuring the fulfillment of the underlying assumptions. Specifically, the homogeneity of variance, the linearity of the dependent variable and covariate, and the homogeneity of regression slopes were confirmed through Tables 6 and 7. Considering the present investigation, whereby the p-value surpasses the threshold of .05, the researcher has succeeded in fulfilling the homogeneity of variance assumption, thereby enabling the execution of a one-way ANOVA. Furthermore, with respect to the homogeneity of regression slopes, the absence of an interaction between the covariate and the dependent variable was evidenced. Consequently, the ANCOVA test was conducted for the vocabulary variable.

Table 6

Test of Homogeneity of Variances (Vocabulary)

F	df1	df2	P-Value
0.025	1	58	0.9

Table 7

Test of homogeneity of regression slopes (*Vocabulary*)

Source	Sum of Squares	df	Mean Square	F	P-Value
Group	70.566	1	70.566	31.466	0.00
Pretest	56.754	1	56.754	25.308	0.00

Pretest× Group	1.789	1	1.789	0.798	0.376
Error	125.585	56	2.243	-	-

Table 8
Covariance Analysis of Vocabulary

Source	**Sum of Squares**	**Df**	**Mean Square**	**F**	**P-Value**	**partial η^2**
Pretest	58.393	1	58.393	26.131	0.000	
Group	800.067	1	800.067	358.031	0.000	0.87
Error	127.374	57	2.235	-	-	
Corrected Total	970.583	59	-	-	-	

Based on the findings presented in Table 8, a statistically significant discrepancy was observed in the mean scores of the experimental group and the control group with respect to the Vocabulary post-test. This suggests that technology-integrated experiential learning had a sizeable impact on augmenting learners' L2 vocabulary acquisition, with a significance level of $p<0.01$. The estimated value of partial Eta Squared was determined to be (partial $\eta 2 = 0.87$), indicating a substantial effect size. Consequently, the null hypothesis was rejected.

Table 9
Estimated Marginal Means (Vocabulary)

Group	**Estimated Marginal Mean**	**Std.Error**
Control	10.26	0.27
Experimental	17.57	0.27

Based on the estimated marginal means, the experimental group exhibited superior performance in Vocabulary as compared to the control group, as presented in Table 9.

To address the third research query and scrutinize the third null hypothesis, statistical evaluations including Levene's test and normality checks were administered, and the assumptions were validated. The uniformity of variance, the linear association between the dependent variable and covariate, and the consistency of regression slopes were all satisfied as illustrated in Tables 10 and 11. Given that the p-value exceeds .05 in the present study, the researcher has satisfied the homogeneity of variance assumption and may proceed with conducting a one-way ANOVA. Additionally, in relation to the

homogeneity of regression slopes, there is a lack of interaction between the covariate and the dependent variable. Consequently, the ANCOVA test was conducted for the purpose of analyzing the Critical Thinking variable.

Table 10

Test of Homogeneity of Variances (Critical Thinking)

F	df1	df2	P-Value
1.341	1	58	0.3

Table 11

Test of homogeneity of regression slopes (Critical Thinking)

Source	Sum of Squares	Df	Mean Square	F	P-Value
Group	780.410	1	780.410	8.233	0.00
Pretest	33.732	1	33.732	0.356	0.553
Pretest× Group	55.878	1	55.878	0.589	0.446
Error	5308.362	56	94.792	-	-

Table 12

Covariance Analysis of Critical Thinking

Source	Sum of Squares	df	Mean Square	F	P-Value	partial η^2
Pretest	8.593	1	8.593	0.091	0.764	
Group	46818.391	1	46818.391	497.489	0.000	0.90
Error	5364.240	57	94.109	-	-	
Corrected Total	52356.850	59	-	-	-	

According to the data presented in Table 12, a significant discrepancy exists between the average scores of the experimental group and the control group in relation to the Critical Thinking post-test. These results indicate that the utilization of technology-integrated experiential learning has a noteworthy impact on the improvement of learners' Critical Thinking abilities ($p<0.01$). The estimated partial Eta Squared value is (partial $\eta 2 =0.90$), which strongly suggests a significant effect. Therefore, the null hypothesis must be rejected.

Table 13

Estimated Marginal Means (Critical Thinking)

Group	Estimated Marginal Mean	Std.Error
Control	51.438	1.78
Experimental	107.462	1.78

Based on the estimated marginal means, it can be inferred that the experimental group exhibited superior performance in the domain of Critical Thinking as compared to the control group. This observation is substantiated by the data presented in Table 13.

5.Discussion

Utilizing an experimental research methodology comprising two cohorts of English language learners in reading classrooms, the study revealed notable strides in critical thinking, reading comprehension, and vocabulary development for both technology-mediated and human-mediated groups. Nevertheless, the advancements were more pronounced in the technology-integrated group. The statistical analysis produced the ensuing responses to the research questions:

Concerning the initial research question, the study investigated the relative efficacy of teacher and technology mediators in promoting reading comprehension in young learners through experiential learning. Experiential Learning Theory (ELT) is a highly significant and crucial pedagogical approach for enhancing reading comprehension, as it has the capacity to stimulate active learning habits in students through technology. The study findings indicate that the implementation of experiential learning led to a marked improvement in the reading skills of participants in both groups. However, students in the technology-integrated group demonstrated superior performance compared to their counterparts in the human-mediated group in post-reading tests, thereby validating the notion that critical readers surpass a surface-level perusal of text and instead regard reading comprehension as a process that demands deep analysis and engagement with the text for meaning construction. These findings are consistent with prior research studies (Azizi et al., 2022; Bakhtiari Moghadam et al., 2021; Jeon and Yamashita (2014); Marzban & Barati, 2016).

The prevailing intellectual trend, which emphasizes experience, posits that a complete comprehension of a written work requires the engagement of both lower and higher levels of thinking. This perspective is corroborated by other academics, including Heidari (2020). Various research studies have evidenced that providing language learners with experiential learning

opportunities enhances their capacity to read with greater precision (Ismail & Saiful, 2022). These opportunities enable learners to make inferences, engage in deductive reasoning and logical interpretation, and acquire information from diverse sources, all of which augment their understanding of the text. Specifically, in the realm of technological learning, such opportunities can be realized through platforms such as blogs, discussion forums, user-generated videos, podcasts, and similar media.

In relation to the second research question, a study was undertaken to examine the comparative efficacy of teacher and technology mediators in augmenting the development of vocabulary in young children through experiential learning. The results indicated that the implementation of experiential learning engendered an enhancement in the vocabulary of the participants in both cohorts. Nevertheless, it was observed that pupils in the technology-mediated group outperformed their counterparts in the human-mediated group during the post-test evaluation. This result can be attributed to the necessity of the technology-mediated group to engage in a profound learning process that entails extending their vocabulary knowledge to gradually construct meaning. This finding is in concurrence with the majority of extant research studies (Mckeown, et al., 1983; Orozco, et al., 2017; Rasinski & Rupley, 2018; Syafrizal et al., 2019). The outcomes of the current research, which align with the investigations carried out by Aljemely (2022) and Flavin (2020), evince that the utilization of a computer is the most efficient approach for children to connect with their surroundings and, in turn, achieve superior learning outcomes. Thus, the integration of technology in language courses is expected to heighten the interest of students in the acquisition of knowledge. The primary objective of educational software is not to ameliorate pedagogical efficiency, but rather to stimulate the curiosity of learners and, hence, enhance their educational experience. Importantly, it is the learning process itself that makes the most significant contribution, rather than the act of teaching.

However, it is worth noting that the current discoveries are in direct opposition to the inferences drawn by Hitosugi et al. (2014), who hypothesized that digital media was not as efficacious as explicit instruction in facilitating students' acquisition of novel lexicon. This inconsistency could be credited to the explicit identification of targeted words and the implementation of reinforcement tasks in the aforementioned investigation. Additionally, the consequences of the inquiry administered by Pawlak et al. (2022) amid Iranian scholars and pedagogues exposed that pupils perceive virtual courses to be more wearisome in contrast to face-to-face classes.

Regarding the third research question, an examination was conducted into the efficacy of teacher and technology mediators in fostering critical thinking in young children through experiential learning. The statistical analysis disclosed that both groups exhibited an improvement in their levels of critical thinking upon the implementation of experiential learning. Notwithstanding, the

technology-mediated group demonstrated superior performance over the human-mediated group. The findings which relate to the enhancement of learners' critical thinking in the technology-integrated classroom can be attributed to experiential learning, which encompasses three lower levels of implicit thinking, namely knowledge, comprehension, and application, as well as three higher levels of thinking, including analysis, synthesis, and evaluation. These findings provide guidance to instructors on how to cultivate critical thinking as the outcome of sustainable subjects and the stages of experiential learning. Moreover, the findings suggest that accessibility to a broad educational technological environment can be attained.

To explicate the fundamental disparities between conventional pedagogy and experiential learning, which are accountable for the heightened level of cognizance in this investigation, in accordance with Jeyaraj (2019), Kennedy (2017), and Raja & Najmonnisa (2018), a preference is given to education that is based on experience. This particular approach facilitates active participation, interaction, application, and critical thinking. The gauge of success in language courses is contingent upon the accomplishment of communicative competence in authentic situations. To exemplify the experiential learning in both technology-mediated and human-mediated classrooms, in alignment with Barker et al. (2002) and Lai et al. (2005), learners initiate with a palpable experience, from which they derive observations and reflections. Following a period of reflective observation, learners condense their thoughts to formulate abstract concepts that can steer future actions. Once developed, learners actively test their constructs, which leads to new experiences and rejuvenates the learning cycle. The results of this study offer supplementary evidence to earlier research suggesting that multimedia resources easily accessible on the internet represent a more effective means of teaching than the traditional, instructor-led classroom setting (Abdullah et al., 2020; Foo & Foo, 2022; Heinrich et al., 2015; Moosavi, 2020; Romero & Bobkina, 2021; Tuma & Nassar, 2021).

Moreover, the current investigation underscores the crucial role that instructional methodologies play in the advancement of critical thinking (CT). To foster CT skills and dispositions, active and collaborative learning principles are highly valued and implemented. Furthermore, the results indicate that passive academic approaches, such as lectures where knowledge is unilaterally imparted from instructors to students, may hinder the development of CT skills. Rather, students should be afforded opportunities to engage in diverse influential techniques and strategies, such as questioning, debating, reflecting, supporting evidence, and problem-solving, thereby facilitating their progression from being passive learners to active and critical thinkers or readers.

Incorporating experiential learning and emphasizing the development of thinking skills within the curriculum can greatly augment students' critical thinking abilities and enable them to construct well-reasoned arguments. One promising approach in this regard is the integration of online and technology-based language classrooms, which offer a fertile ground for the cultivation of critical thinking skills. The results obtained from this study are consistent with those of other researchers, such as Hsiao et al. (2020), Alkhalifah et al. (2012, as cited in Hamzehnejadi, 2023), and Yang et al. (2020), who have recommended modifications to the instructional environment to facilitate online collaboration. These modifications include a shift towards student-centered and team-centered collaborative learning, extensive student-to-student interaction, and changes to the roles of both teachers and students. Specifically, both students and teachers should prioritize active learning, exchange of experience-based knowledge, socially constructed knowledge, learning from one another, and students' engagement in talking, teaching, and learning.

The current study has provided evidence that experiential and hands-on learning in a technology-facilitated environment can cultivate thoughtful, introspective, and open-minded individuals who possess the capacity to critically analyze, synthesize, evaluate, and generate innovative written works. Moreover, it has been verified that acquiring a language ought not to be regarded as the sole and ultimate goal, but rather as a mechanism by which learners can advance other desired proficiencies to promote their academic, linguistic, personal, and social development. As Gao and Zheng (2019) have proposed, in relation to language instructor agency, it is crucial for language educators to explore approaches for establishing and maintaining contextual conditions that are favorable to transformations in their learning and professional conduct. The use of contemporary technological mediation in the realm of education has the potential to facilitate the desired transformation. The findings indicate that computers offer various modalities, including textual, visual, and auditory modes presented in a variety of formats, such as video, image, and text. This undoubtedly provides an unparalleled form of mediation, encouraging multiple levels of cognition simultaneously. Nonetheless, further investigation is imperative before drawing any conclusions regarding the superiority of technological mediation over that of a teacher or its potential to substitute for the latter more efficiently.

6. Conclusion

While there exists supporting evidence for the efficacy of experiential learning and critical-thinking training, there is a deficiency in the clarity of numerous instructional endeavors regarding the essential constituents of a productive curricular and instructional program in online classrooms or technology-mediated environments. In order to instill in pupils, the ability to think critically with respect to experiential learning, it is imperative to cultivate an atmosphere that enables learners to augment their knowledge and experience, striving to

identify how information can be leveraged to formulate, identify, or evaluate general patterns of knowledge. An effective method of promoting critical thinking and critical-reading skills involves adopting an approach that encompasses intricate questioning, introspection, and alternatives, thereby encouraging students to be reflective in their responses instead of making hasty judgments. Hurwitz and Schmitt (2020) suggest that technology-integrated programs possess the ability to immerse learners in a diverse range of scenarios that closely simulate real-life experiences, thus enabling them to communicate through interactive technologies while receiving support from computer programs. Consequently, these programs ought to be made readily available to language educators as pedagogical resources within their instructional settings, as well as to learners themselves for use as facilitators in both classroom and extracurricular encounters.

No research study can exist without encountering limitations. Thus, the results of this present work must be interpreted within the confines of these limitations. The primary limitation of this study is associated with the relatively small sample size. To replicate the study and establish generalizable patterns, future research endeavors could benefit from larger sample sizes. Furthermore, the study's findings would become more generalizable with the examination of more diverse learner groups.

In addition, this study fails to provide insight into various psychological and mental factors that may either impede or facilitate students' use of technology-mediated classes and collaboration. For example, anxiety or stress related to inadequate technological knowledge, shyness, introversion or extroversion could lead to non-participation in online chat forums. Thirdly, there exist diverse learning management systems that facilitate technology-integrated classes, including Blackboard and Moodle; however, for the purpose of this research, Learnpress was utilized as an easily accessible LMS. In addition, one limitation of this study was the three-week interval required after the purchase of the host and domain to establish the online class. Notably, the registration of the domain name necessitated permission from the Information Technology and Digital Media Development Center of the Iran Ministry of Culture and Islamic Guidance. Regrettably, the title "Cyberinteraction" was not authorized for use in naming the online class due to the perception that the term "CYBER" is not permissible in Iran. Consequently, the name of the website was changed to www.edone.ir.