

Research Article

Exploring Opportunities and Barriers of Multilingualism in Global E Learning for Inclusive International Education

Ika Susanti^{1*}, Dewi Nuryanti², Raveenthiran Vivekanantharasa³

¹ Semarang Institute of Technology and Business, Indonesia; e-mail: Ikasst1@gmail.com

² Nusantara Business Institute, Indonesia; e-mail: deaprodhite@gmail.com

³ University of Sri Lanka, Sri Lanka; e-mail: rvive@ou.ac.lk

* Corresponding Author: Ika Susanti

Abstract: The rapid growth of global e-learning platforms such as Coursera and edX has expanded access to education but also highlighted linguistic inequities due to the dominance of English. Non-native international students often face challenges in understanding course content, limiting inclusivity and academic engagement. This study investigates the role of multilingualism in fostering inclusivity in global online learning by exploring both opportunities and barriers to implementing multilingual content. A quantitative survey method was employed, targeting international students who actively use global e-learning platforms. Data were collected through online questionnaires combining a 5-point Likert scale and open-ended questions, and analyzed using descriptive statistics, correlation and regression tests, as well as thematic analysis. The findings indicate that localized language content significantly improves comprehension, engagement, and knowledge retention, while also reducing cognitive load when learning complex concepts. However, the study also identifies major barriers, including limited institutional resources, high translation costs, and difficulties in maintaining standardized content quality. Comparison with previous research confirms that linguistic and cultural adaptation is critical for inclusivity, while hybrid strategies combining automated translation with human validation are seen as pragmatic solutions. This study concludes that multilingualism is essential for advancing global educational equity, with implications for policy development, platform design, and international collaboration. Recommendations are offered for policymakers, e-learning providers, and educational institutions to integrate multilingual strategies and promote further research on their effectiveness.

Keywords: E-Learning; Inclusivity; International Students; Multilingualism; Online Education

Received: January 13, 2025

Revised: March 10, 2025

Accepted: May 5, 2025

Published: June 30, 2025

Curr. Ver.: June 30, 2025



Copyright: © 2025 by the authors.

Submitted for possible open

access publication under the

terms and conditions of the

Creative Commons Attribution

(CC BY SA) license

(<https://creativecommons.org/licenses/by-sa/4.0/>)

1. Introduction

The development of global online education platforms has accelerated significantly over the past decade, especially during the COVID-19 pandemic, which forced educational institutions worldwide to adopt online learning models. In China, for example, the launch of Massive Open Online Courses (MOOCs) such as XuetangX Global and iCourse International in 2020 demonstrated both readiness and large-scale impact of online education internationally [1]. This transformation is strongly supported by the advancement of Information and Communication Technology (ICT), which has revolutionized teaching and learning methods, providing more flexible, open, and affordable access to education [2][3].

Despite the growing accessibility of online education, English remains the dominant language in e-learning content. As the global lingua franca of the internet, English facilitates cross-border collaboration and knowledge exchange [4]. This dominance is also visible in large-scale initiatives such as Turkey's FATİH project, which emphasizes the importance of English-language content in secondary education [5]. Furthermore, both English for Specific Purposes (ESP) and English as a Foreign Language (EFL) increasingly rely on online platforms to enhance language proficiency [6][7]. While this benefits global learners, it often neglects linguistic diversity and creates barriers for non-native English speakers.

International students who are non-native speakers of English face significant challenges in online education. Difficulties in understanding course materials, producing academic writing in English, and adapting to varying academic and cultural standards hinder their learning progress [8]. These issues often lead to higher risks of academic failure or extended study duration [9]. Additionally, limited access to adequate technology and lack of institutional support exacerbate the challenges of online education for these students [10][11].

In this context, multilingualism emerges as a crucial factor for supporting inclusive international education. Multilingual policies not only enhance accessibility but also promote cultural diversity and cross-cultural understanding [12][13]. Recent studies highlight that multilingual pedagogical approaches can improve students' cognitive, social, and affective outcomes [14][15][16]. Hence, multilingualism serves as a strategic resource for creating fairer and more sustainable global education solutions [17].

Considering the dynamics of online learning development, English dominance, and accessibility challenges, it becomes evident that multilingualism should be placed at the core of global e-learning design. A multilingual approach strengthens students' linguistic competence, fosters inclusivity, supports global mobility, and contributes to academic success across cultures.

2. Literature Review

Theories of Multilingualism and Inclusive Education

Multilingualism plays a crucial role in building inclusive education as it allows students from diverse linguistic backgrounds to access equal educational opportunities. The translanguaging approach encourages the use of multiple languages in the classroom as a pedagogical strategy to enhance immigrant student participation and reduce language barriers [18]. Moreover, other studies highlight that plurilingual approaches can strengthen pedagogical dynamics and increase student engagement in multilingual environments [19]. These findings suggest that multilingualism is not only a linguistic phenomenon but also contributes to creating an inclusive learning climate by fostering social interaction and academic motivation [20].

E-learning and the Globalization of Education

E-learning has emerged as a strategic tool in supporting the globalization of education. Cross-country studies indicate that e-learning can serve as an effective medium for delivering content across different cultural contexts, including in India and Sri Lanka, which highlight both the challenges and opportunities from cross-cultural perspectives [21]. At the international level, e-learning is increasingly regarded as a new global industry that contributes to the export of higher education services [22]. Other literature emphasizes that marketing global educational services through e-learning offers advantages in reaching international markets at a lower cost compared to traditional methods [23]. However, the effectiveness of e-learning is highly dependent on content design that considers both cultural aspects and local pedagogy [24]. Thus, integrating e-learning into educational globalization requires cross-cultural adaptation to achieve optimal learning outcomes [25].

Language Barriers in Access to Online Learning

Language barriers are among the main factors hindering the success of online learning. Research shows that such barriers can significantly affect students' learning perceptions and academic achievement [26]. In the context of maritime students learning English for specific purposes, language barriers have been shown to influence their perceptions of the effectiveness of online learning [27]. In addition to language barriers, limited user interaction and interface design also pose significant challenges, highlighting the need for artificial intelligence-based solutions, such as the application of deep learning in video-sharing platforms to support multilingual interaction [28]. Furthermore, other studies indicate that the integration of technology into online language teaching is often hindered by infrastructural constraints, teachers' digital competencies, and limited institutional support [29]. Therefore, developing strategies to support multilingual learners and enhancing educators' competencies are essential steps in overcoming language-related challenges in online learning.

Previous Studies on Multilingual Content and Engagement

Research on multilingual content and student engagement highlights the importance of the CLIL (Content and Language Integrated Learning) approach in promoting multilingualism on a global scale [30]. CLIL has been shown to improve both language skills and subject matter understanding, thereby enhancing overall student engagement. In addition, multilingualism is viewed as a strategic means of strengthening the acquisition of new languages, as demonstrated in the context of Maltese language learning [31]. Other systematic studies reaffirm that multilingualism can serve as a bridge for fostering metalinguistic awareness and facilitating student engagement in linguistically diverse educational settings [32].

3. Research Method

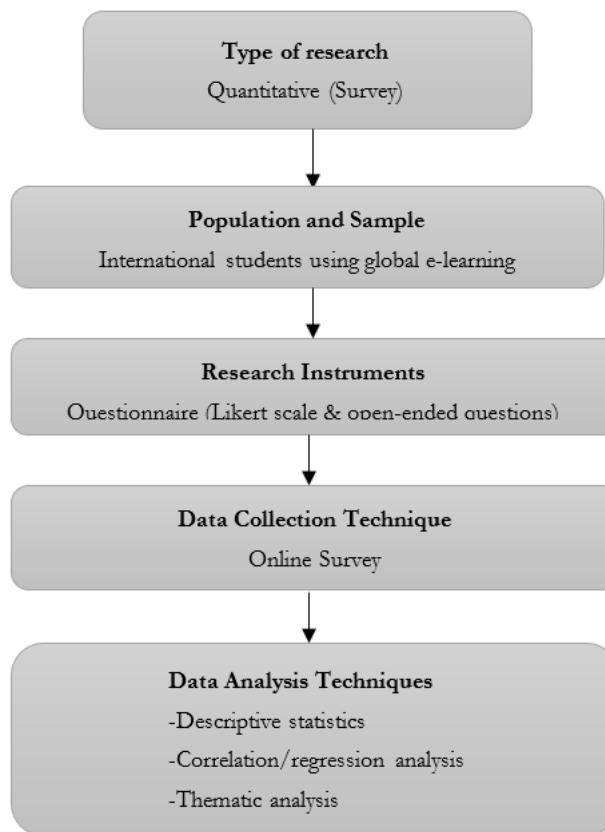


Figure 1. Research Methodology Flowchart

Type of Research

This study employs a quantitative approach using the survey method. This approach was chosen because it is suitable for measuring the perceptions, barriers, and experiences of international students in using global online learning platforms such as Coursera and edX.

Population and Sample

The population in this study consists of international students who are actively engaged with global e-learning platforms. The sampling technique is purposive, involving only respondents who have at least one semester of experience using such platforms. The sample size is determined based on the adequacy of data for statistical analysis, with a minimum target of 100 respondents.

Research Instrument

The instrument used is an online questionnaire consisting of two parts. The first part employs a 5-point Likert scale to measure language barriers, learning perceptions, and academic achievement. The second part includes open-ended questions designed to explore respondents' experiences in greater depth, particularly regarding language challenges and interaction in online learning.

Data Collection Technique

Data were collected through an online survey distributed using Google Forms or similar platforms. The survey was disseminated through international student networks, academic communities, and online forums related to e-learning.

Data Analysis Technique

The collected data were analyzed using two approaches. First, quantitative analysis was conducted using descriptive statistics to describe respondent profiles and response distributions, as well as correlation and regression analyses to examine the relationships among language barriers, learning perceptions, and academic achievement. Second, data from the open-ended questions were analyzed thematically to identify key patterns and themes related to the experiences of international students in online learning.

4. Results and Discussion

Results

Table 1. Impact of Multilingual Content on Online Learning

Learning Aspect	Impact of Local Language Content	Evidence Reported by Respondents
Conceptual Understanding	Improved comprehension and reduced confusion	Respondents found it easier to grasp technical terms and abstract theories
Knowledge Retention	Higher retention of information	Students were able to recall key concepts for a longer period after learning
Academic Engagement	More active participation in discussions and collaboration	Respondents felt more confident contributing to online forums and group tasks
Cognitive Load	Reduced when materials were available in native languages	Students could focus on content instead of spending extra effort on language translation
Learning Motivation	Increased due to easier access to learning materials	Students felt more motivated to complete courses when language was not a barrier

The findings of this study reveal several important insights into the role of multilingualism in global e-learning. First, localized language content was shown to significantly improve learners’ comprehension and engagement. Students who accessed materials in their native language consistently reported clearer understanding of key concepts, reduced confusion when dealing with technical terms, and higher levels of knowledge retention. Many respondents also emphasized that being able to study in their own language allowed them to engage more actively in forum discussions and collaborative tasks, which are essential components of online learning communities.

In addition to enhancing comprehension, multilingual content was found to reduce cognitive load. International students noted that while English-only materials often required extra time and effort to process, multilingual versions allowed them to focus more on understanding the subject matter rather than on language decoding. This was particularly relevant in courses involving abstract theories, advanced technical content, or discipline-specific terminology.

However, the research also identified notable barriers to the widespread adoption of multilingual content in global e-learning platforms. Institutions frequently face limited resources and budget constraints, which restrict their ability to provide high-quality translations across multiple languages. The cost of professional translation and localization remains a major challenge, particularly for platforms hosting thousands of courses. Furthermore, ensuring consistency and maintaining standardized quality across languages is difficult, as translations must balance linguistic accuracy with cultural appropriateness. Respondents highlighted cases where machine-translated materials were technically correct but failed to convey cultural nuance or disciplinary context effectively, leading to misunderstandings.

Discussion

These findings affirm that multilingualism plays a crucial role in creating a more equitable and inclusive online learning ecosystem. The use of local languages is not merely an additional feature but a pedagogical strategy that can enhance the quality of the learning process. By providing multilingual content, online platforms can expand their user reach, support cultural diversity, and increase student participation across different linguistic backgrounds.

From a practical perspective, a hybrid approach that combines automated translation technologies with human validation emerges as the most realistic solution. This strategy enables cost efficiency while maintaining the quality and relevance of content. Policy support is also essential, as multilingual initiatives require clear regulatory frameworks and resource allocation to ensure sustainability.

For platform providers, the integration of multilingual content can be realized through features such as interactive subtitles, bilingual glossaries, and culturally adapted case studies. For educational institutions, the implementation of multilingual strategies can strengthen international collaboration, broaden the global education market, and enhance their reputation as inclusive education providers.

Table 2. The Role of Multilingualism in Global Online Education

Dimension of Online Education	Contribution of Multilingualism	Implications
Equity of Access	Reduces language barriers and broadens learning opportunities	Students from diverse linguistic backgrounds can participate equally
Sustainability	Promotes the use of inclusive and adaptive digital resources	Platforms are better prepared to reach a global audience in the long term
Learning Quality	Enhances students' comprehension, retention, and participation	Learning processes become more effective and outcome-oriented
Cultural & Linguistic Diversity	Respects cultural identity through linguistically adapted content	Increases student engagement and relevance for international learners
Global Collaboration	Facilitates cross-cultural interaction through more inclusive language mediums	Opens opportunities for partnerships among institutions and global communities

Overall, the results of this study indicate that multilingualism is not simply a complementary element but a foundational requirement for building online education that is equitable, sustainable, and responsive to the needs of students from diverse linguistic and cultural contexts.

5. Comparison

Multilingualism in global online education presents both opportunities and challenges. On the opportunity side, the use of local languages enhances conceptual understanding, knowledge retention, learning motivation, and broadens equitable access for students across linguistic backgrounds. Furthermore, multilingualism strengthens cross-cultural collaboration and creates a more inclusive learning experience. However, challenges remain, such as limited resources and budgets, inconsistent translation quality, and the lack of strong institutional policy support.

In addition, multilingualism reshapes the way global education platforms design and deliver content. While English-only content tends to prioritize efficiency and global uniformity, multilingual strategies emphasize inclusivity and cultural relevance. This comparison highlights a fundamental trade-off: efficiency versus equity. By adopting multilingual approaches, platforms may face higher costs and longer preparation times, yet they gain the advantage of broader student engagement and improved learning outcomes. Ultimately, balancing these competing demands becomes essential for building online education systems that are both globally scalable and locally meaningful.

6. Conclusion

The study highlights that multilingualism plays a pivotal role in fostering inclusivity in global e-learning environments. The findings demonstrate that the use of local-language content significantly enhances students' comprehension, engagement, and retention, while also reducing cognitive load and improving satisfaction with online learning. These outcomes confirm that multilingual strategies are not only pedagogically valuable but also essential in promoting equitable access to education. Nevertheless, challenges remain in terms of institutional resources, translation costs, and the standardization of multilingual content. Addressing these issues requires strong policy support, sustainable financial investment, and collaborative efforts across institutions and nations. Recommendations are offered for policymakers, e-learning providers, and educational institutions to integrate multilingual strategies and promote further research on their effectiveness.

References

- [1] E. E. Akanwa, "International students in western developed countries: History, challenges, and prospects," *Journal of International Students*, vol. 5, no. 3, pp. 271–284, 2015. [Online]. Available: <https://www.scopus.com/inward/record.uri?eid=2-s2.0-84962675218&partnerID=40&md5=c68bc6dcf8ee9fa22607000ba5dc247f>
- [2] C. Bradlaw, B. Hufeisen, and S. Nölle-Becker, "The concept of functional multilingualism in the context of internationalisation at German universities," in *Second Language Learning and Teaching*, 2024, pp. 61–80. doi: https://doi.org/10.1007/978-3-031-52371-7_5
- [3] P. Yanaprasart and G. Lüdi, "Diversity and multilingual challenges in academic settings," *International Journal of Bilingual Education and Bilingualism*, vol. 21, no. 7, pp. 825–840, 2018. doi: <https://doi.org/10.1080/13670050.2017.1308311>
- [4] P. C. Rogers and M. Wang, "Cross-cultural issues in online learning," in *Encyclopedia of Distance Learning: Second Edition*, 2009, pp. 527–536. doi: <https://doi.org/10.4018/978-1-60566-198-8.ch077>

- [5] J. E. Coryell and D. T. Chlup, "Implementing E-Learning components with adult English language learners: Vital factors and lessons learned," *Computer Assisted Language Learning*, vol. 20, no. 3, pp. 263–278, 2007. doi: <https://doi.org/10.1080/09588220701489333>
- [6] K. Stein-Smith, "Multilingualism for global solutions and a better world," *Journal of Language Teaching and Research*, vol. 12, no. 5, pp. 671–677, 2021. doi: <https://doi.org/10.17507/jltr.1205.05>
- [7] E. Veerman, E. Danbury, J. D. S. Duarte, M. Volman, and L. Gaikhorst, "A systematic review of empirical studies into multilingual pedagogies and their outcomes in primary education," *Journal of Multilingual and Multicultural Development*, 2025. doi: <https://doi.org/10.1080/01434632.2025.2472862>
- [8] M. Chiras and A. Galante, "Policy and pedagogical reform in higher education: Embracing multilingualism," in *Policy Development in TESOL and Multilingualism: Past, Present and the Way Forward*, 2021, pp. 13–24. doi: https://doi.org/10.1007/978-981-16-3603-5_2
- [9] L. Nichuhovska, L. Nikolenko, Z. Bondarenko, V. Motorina, and T. Prykhodko, "Challenges and prospects of online education in the context of barrier-free access," *Multidisciplinary Reviews*, vol. 6, no. e2023spe020, 2023. doi: <https://doi.org/10.31893/multirev.2023spe020>
- [10] R. C. Shaniga and M. Iankumaran, "Challenges faced by English language teachers in the classrooms: An overview on modern scenario," *Journal of Applied Bioanalysis*, vol. 10, no. 3, pp. 10–15, 2024. doi: <https://doi.org/10.53555/jab.v10i3.040>
- [11] S. A. Pushmina, "English for specific purposes (ESP) on-line teaching for engineering students," *World Transactions on Engineering and Technology Education*, vol. 19, no. 2, pp. 215–219, 2021. [Online]. Available: <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85108578755&partnerID=40&md5=fc2abcfafdcbce389305d801402a850d5>
- [12] Z. Zhang and R. F. Kenny, "Learning in an online distance education course: Experiences of three international students," *International Review of Research in Open and Distance Learning*, vol. 11, no. 1, pp. 17–36, 2010. doi: <https://doi.org/10.19173/irrodl.v11i1.775>
- [13] Y. Xiong, Q. Ling, and X. Li, "Ubiquitous e-Teaching and e-Learning: China's massive adoption of online education and launching MOOCs internationally during the COVID-19 outbreak," *Wireless Communications and Mobile Computing*, vol. 2021, art. 6358976, 2021. doi: <https://doi.org/10.1155/2021/6358976>
- [14] E. Kizilet and K. S. Özmen, "ICT integration in Turkey: Evaluation of English language E-content of the FATİH project," *Turkish Online Journal of Educational Technology*, vol. 16, no. 4, pp. 33–41, 2017. [Online]. Available: <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85031281983&partnerID=40&md5=9533875cfab4608725330c2240ba5336>
- [15] Y. Liao, "Prospects for the online education promoting the reform of traditional higher education under the COVID-19 situation," in *Smart Innovation, Systems and Technologies*, vol. 218, 2021, pp. 351–359. doi: https://doi.org/10.1007/978-981-33-6141-6_38
- [16] B. Considine, "Rise of online higher education, global English collisions, and the academic American English dialect," in *Handbook of the Changing World Language Map*, 2019, pp. 3425–3441. doi: https://doi.org/10.1007/978-3-030-02438-3_180
- [17] A. Philominraj, M. Aguilar-Valdés, R. A. Saavedra, and R. Ranjan, "Multilingualism and internationalization, navigating the complexities: A systematic review," *Multidisciplinary Reviews*, vol. 9, no. 1, art. e2026048, 2026. doi: <https://doi.org/10.31893/multirev.2026048>
- [18] Z. D. Kaymak and M. B. Horzum, "Student barriers to online learning as predictors of perceived learning and academic achievement," *Turkish Online Journal of Distance Education*, vol. 23, pp. 97–106, 2022, doi: <https://doi.org/10.17718/tojde.1096250>
- [19] M. Prilutskaya, "Towards inclusive language education for immigrant students in Norwegian schools: A translanguaging-driven perspective," in *Inclusion and Special Needs Education for Immigrant Students in the Nordic Countries*, pp. 13–32, 2023, doi: <https://doi.org/10.4324/9781003327554-2>
- [20] F. Blacher-Wilson, E. G. Mense, and M. D. Richardson, "Marketing services globally: The benefits of e-learning," in *Cases on Innovations in Educational Marketing: Transnational and Technological Strategies*, pp. 313–326, 2011, doi: <https://doi.org/10.4018/978-1-60960-599-5.ch019>
- [21] M. Juan-Garau and J. Salazar-Noguera, "Introduction: The relevance of CLIL education in achieving multilingualism on the global stage," *Educational Linguistics*, vol. 23, pp. 1–10, 2015, doi: https://doi.org/10.1007/978-3-319-11496-5_1
- [22] Y.-X. Lin, X.-Y. Cheng, K.-W. Tan, Y.-Y. Syu, and Y.-Z. Hsieh, "Addressing language and user-interaction through YouTube based on deep learning," in *Proc. IEEE Int. Conf. Computer Communication and the Internet (ICCCI)*, 2024, pp. 187–192, doi: <https://doi.org/10.1109/ICCCI62159.2024.10674487>
- [23] D. Tafazoli, "Key barriers to and enablers of integrating technology into online language teaching," in *Computer-Assisted Language Learning in the Global South: Exploring Challenges and Opportunities for Students and Teachers*, pp. 3–23, 2024, doi: <https://doi.org/10.4324/9781003495956-2>
- [24] J. Żammit, "Does multilingualism hold the golden key to acquiring the Maltese language?," *International Journal of Multilingualism*, in press, 2025, doi: <https://doi.org/10.1080/14790718.2025.2475395>

- [25] D. I. S. Fatimah, Y. F. Amrullah, P. I. Talenta, and W. Pujiantoro, "Investigating the impact of barriers on perceptions of online learning for maritime English cadets," *Journal of Maritime Research*, vol. 21, no. 3, pp. 235–243, 2024. [Online]. Available: <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85215115916>
- [26] E. K. Zashchitina, P. V. Pavlov, and M. G. Bondarev, "Increasing export of higher education services through internationalization, based on development of online learning," in *Proc. Int. Conf. Quality Management, Transport and Information Security, Information Technologies (IT&QM&IS)*, 2018, pp. 755–759, doi: <https://doi.org/10.1109/ITMQIS.2018.8525063>
- [27] L. Bouzaïane, "Education: A new global industry," in *Proc. 12th Int. Bus. Inf. Manag. Assoc. Conf. (IBIMA)*, 2009, pp. 1656–1658. [Online]. Available: <https://www.scopus.com/inward/record.uri?eid=2-s2.0-84897982228>.
- [28] Y. Lou, "Research on the effects of media and pedagogy in distance education," in *Encyclopedia of Distance Learning: Second Edition*, pp. 1766–1773, 2009, doi: <https://doi.org/10.4018/978-1-60566-198-8.ch259>
- [29] M. A. Azer and A. M. El-Sherbini, "Cultural challenges in developing e-learning content," *Int. J. Emerging Technologies in Learning*, vol. 6, no. 1, pp. 11–14, 2011, doi: <https://doi.org/10.3991/ijet.v6i1.1467>
- [30] N. Ribierre-Dubile, "Une approche plurilingue pour faciliter l'inclusion scolaire: engagement et dynamique pédagogique," *Int. Rev. Educ.*, vol. 63, no. 4, pp. 545–559, 2017, doi: <https://doi.org/10.1007/s11159-017-9647-0>
- [31] T. A. Morris, "Anytime/anywhere online learning: Does it remove barriers for adult learners?," in *Online Education and Adult Learning: New Frontiers for Teaching Practices*, pp. 115–123, 2009, doi: <https://doi.org/10.4018/978-1-60566-830-7.ch009>
- [32] S. Kurian, H. N. Ramanathan, and C. de Alwis, "E-learning in India and Sri Lanka: A cross-cultural study," *Asia Pacific Journal of Information Systems*, vol. 31, no. 1, pp. 102–120, 2021, doi: <https://doi.org/10.14329/apjis.2021.31.1.102>