Digital Mediation of EMI in a Multilingual Post-Francophone Context: Evidence from Architecture Education in Bejaia

Djamila Berkati [1*], Assia Sili [2], Nadia Idri[3], Fadhila Aliouchouche[4]

[1] Abderrahmane Mira University, LESMS (Algeria), djamila.berkati@univ-bejaia.dz,

[2] Abderrahmane Mira University, LESMS (Algeria), assia.sili@univ-bejaia.dz,

[3]Abderrahmane Mira University, LESMS (Algeria), nadia.ahouari@univ-bejaia.dz,

[4]Abderrahmane Mira University, LESMS (Algeria), fadhila.aliouchouche@univ-bejaia.dz

Received: 04/04/2026 *Accepted: 22/06/2026* *Published: 31/07/2026*

Abstract:

The increasing globalization of higher education has contributed to the integration of English as a medium of instruction (EMI) in Algerian higher education institutions. However, this transition has raised certain challenges due to the multilingual nature of the country. In this regard, the integration of digital tools may serve as a way to address these shortcomings. Accordingly, this study examines how teachers perceive the effectiveness of digital tools and the obstacles they encounter in a multilingual context. This study employed a qualitative research method through a self-administered questionnaire with eleven teachers specialized in architecture at the University of Bejaia, and the data were analysed thematically. The findings revealed that the teachers perceived digital tools as an effective solution, although a few challenges were identified. The teachers also expressed optimistic expectations regarding the future role of digital tools in mediating the multilingual EMI transition.

Keywords: Digital tools; EMI; inclusive education; multilingual contexts; teachers' perceptions

1. Introduction

English as Medium of Instruction (EMI) has gained significant momentum worldwide as universities attempt to be at the forefront of higher

[*] ***Corresponding author: Djamila Berkati***

education. This trend has taken strong roots in non-English-speaking countries across Europe, Asia, and Africa to reflect their shift toward the internationalization of higher education. Like many countries, Algeria is also adapting this form of education. There has been debate on how EMI can be effectively incorporated into its higher education institutions (Sahk, 2025; Rouagh et al., 2025; Idri, 2025).

In 2022, the government officially introduced EMI in all universities in Algeria, a decision informed by a number of factors. These include enhancing global competitiveness, attracting foreign collaborations, promoting student exchange, and producing a skilled workforce that aligns with global standards. However, the linguistic landscape in Algeria is influenced by a set of historical and socio-political factors that have led to the coexistence of Arabic, Tamazight, French, and English. The multilingual nature of Algeria has created challenges for the implementation of EMI, among them linguistic barriers and the teaching methodologies employed in the classroom. Within this context, Idri (2025) and Guenaoui (2024) established two main challenges. First, teachers' reluctance to shift to English. University teachers were resistant to fully switching their teaching practices to English, as this required them to update, revise, or translate all their teaching materials and content and adapt them to their students. Second, the studies pointed to teachers' and learners' low English proficiency levels. This situation explains the limited proficiency levels, especially in the scientific stream, as all instructions are delivered in French. Similarly, in a longitudinal study, Bouguebs (2025) noted three systemic limitations that slowed the implementation of the instructional approach, mainly uneven professional development, a lack of clear frameworks for adapting materials, and inadequate collaboration between subject specialists and ESP practitioners.

In spite of the linguistic barriers, the rapid development of digital technologies has been identified as one of the factors that can contribute to the advancement of language education. Technology has been identified as a powerful tool to enhance the quality of teaching and learning by providing new opportunities for both teachers and students to engage in academic content (Ammade et al., 2018; Azmina et al., 2019; Mali & Salsbury, 2021). Therefore, technology may be seen as a means of addressing multilingual

challenges by providing inclusive teaching and learning (Zemali & Naoua, 2023).

The application of technological tools as an inclusive strategy has been researched at the international level (Tai, 2021, 2023; Rahman, 2026; Guermat & Boubekri, 2025), but it remains an under-researched field in the Algerian EMI context. This study therefore contributes by examining teachers' perceptions of digital tools as mediators of inclusive education from four interconnected standpoints. Firstly, it offers empirical research on a complex multilingual environment that continues to play a significant role in shaping pedagogical realities. Secondly, it addresses the issue of Algeria's francophone-to-Anglophone transition, which is considered one of the most difficult linguistic changes and differentiates the country from other EMI settings. Thirdly, it raises the question of the potential of digital tools not only to be used in instruction but also to play an active role in linguistic mediation. Fourthly, it involves analysing the department of architecture at Bejaia University, which is considered a visually oriented discipline with considerable potential for digital tools to facilitate linguistic and cognitive accessibility. Therefore, this research aims to answer the following questions:

- What are EMI teachers' perceptions regarding digital tools in supporting inclusive learning in multilingual classrooms?
- What strategies do EMI teachers use to ensure digital tools are accessible and inclusive for all students?
- What challenges do EMI teachers face in using digital tools to support diverse linguistic student needs?

2. Theoretical background

Historically, inclusive education emerged as a response to the historical exclusion of marginalized learners, mainly students with disabilities, who were separated from mainstream schooling systems. In the twentieth century, educational reforms began to address this category of learners by gradually integrating them into schools with the goal of achieving full inclusion. Among the key international milestones for disabled learners are the 1994 UNESCO Salamanca Statement and the 2006 UN Convention on the Rights of Persons with Disabilities. The latter established inclusive

education as a fundamental right and called on schools and educational systems to accommodate the diversity of learners. While inclusive education initially focused on disabled persons, it was later extended to encompass other aspects such as social and cultural differences and language diversity in multilingual educational contexts (UNESCO, 2026; Bhatia & Singh, 2021; Smyth et al., 2014).

In fact, in multilingual EMI contexts, linguistic diversity constitutes a common challenge due to learners' varying levels of English proficiency. Thus, in such settings, inclusivity is often manifested in the strategic use of additional languages, translanguaging practices, and pedagogical adjustments that aim to ensure equal participation and access to academic content rather than treating linguistic diversity as a deficit (De Borba et al., 2024; Mokikwa & Mokhele-Ramulumo, 2024; Ngo, 2024; Gulle, 2024; Saud, 2019). These studies stressed the significant role of recognizing multilingual repertoires as pedagogical resources that can enhance engagement and comprehension.

Furthermore, this linguistic complexity must be understood within the context of broader postcolonial processes. As Guermat and El Boubekri (2025) emphasized, English is traditionally used as a Medium of Instruction (EMI) in postcolonial education systems. Consequently, linguistic hierarchies are reproduced, resulting in the reinforcement of linguistic structures that have led to the marginalization of local languages. This is further compounded by colonial legacies of what Boubekeur (2021) defined as Algeria's "rich and complex" linguistic background, resulting from 132 years of French colonization, followed by Arabization policies. Similarly, Gouali and Haddam Bouabdallah (2024) noted that French is firmly established in Algerian higher education, particularly in scientific and technical fields, creating a particular multilingual setting where English is used as a third language.

In this context, digital technology has been increasingly viewed as a potential mediational tool that can facilitate linguistic accessibility, language shift, and academic understanding. Research has suggested that digital technology can minimize language barriers among multilingual learners of

different proficiency levels (Rahman, 2026; Guermat & Boubekri, 2025; Gülle, 2024; Eshchanova, 2024; Tai, 2021; Vo, 2021).

2.1. Operational definition of digital inclusivity within the EMI context

In accordance with the findings of the above studies and definitions, the current study operationalized the notion of digital inclusivity within the context of EMI as the strategic use of digital tools by EMI teachers for meeting the diverse linguistic needs of their learners, who possess different linguistic backgrounds and proficiency levels. This is mainly operationalized through two dimensions:

- Linguistic accessibility: how do technological tools mitigate language barriers and support comprehension in an EMI context?
- Equitable access and participation: how digital tools create opportunities for all students to actively engage in classroom interactions regardless of their proficiency levels, and how teachers ensure fair access to content.

3. Research methodology

3.1. Research Design

The current research examines university teachers' perceptions towards the use of digital tools to ensure an inclusive multilingual classroom environment. Given the scarcity of literature on this research area in the Algerian context, an exploratory research design stands as appropriate. Furthermore, this study opted for a qualitative research method in order to capture teachers' insights and perceptions regarding the topic under investigation. This combination is argued to provide contextualized and detailed information when exploring an under-researched topic (Williams, 2024), and this aligns with our research objectives.

3.2. Participants and sampling methods

This study involves 11 teachers at the University of Abderrahmane Mira Bejaia, Algeria, particularly working in the department of architecture. This department was purposefully selected due to the teachers' and students' regular engagement with digital tools and multilingual perspective. Within this setting, a voluntary sampling approach was adopted. An email was sent

to all teachers working at the department of architecture through their institutional emails to invite them to respond to the Self-Administered Questionnaire (SAQ). Only 11 teachers agreed to take part in this investigation.

3.3. Data collection and analysis

Drawing on the principles of SAQ, the research employed a set of structured open-ended questions that were administered to the sample via Google Forms. According to Rodriguez et al. (2014), this research tool is effective in collecting qualitative data as it minimizes interviewer-related bias and yields consistent response patterns regardless of interviewer-respondent familiarity. Furthermore, the authors found that participants remained engaged and provided meaningful and detailed answers due to the nature of the tool. Indeed, in our context, the use of this online SAQ allowed the sample to respond thoughtfully and at their convenience, with a reduced effect of social desirability related to face-to-face interviews.

The SAQ consisted of six open-ended questions that related to teachers' experience and familiarity with EMI, their management of the multilingual nature of the classes, the challenges they commonly encountered and how they addressed them, the strategies they used to ensure linguistic inclusivity, and their future perspectives. To ensure their relevance, the questions were peer-reviewed by a subject-matter expert, who provided feedback to reformulate a few questions for more clarity.

The form was presented in two different languages, French and English, to provide access to a larger number of teachers, as some may h avelimited English proficiency. While ten teachers relied on the English version of the SAQ, only one instructor opted for the French one.

The data obtained from the sample were analysed thematically following the framework of Braun and Clarke (2006). The analysis followed a systematic six-phase coding process: (1) data familiarization, (2) generating initial coding, (3) searching for themes, (4) reviewing themes, (5) defining the final themes, and (6) producing the report. To ensure validity, the analysis employed the triangulation method: the first author independently coded the data, followed by a separate analysis by the second author. The thematic analysis generated 28 codes inductively, which were subsequently refined

into four overarching themes. The latter were compared, and discrepancies were resolved through discussion until consensus was reached. In addition to peer debriefing, inter-coder triangulation (Guba & Lincoln, 1985) was employed to increase the study's credibility and trustworthiness.

Regarding ethical considerations, the researchers clearly indicated in both the email and Google Forms the nature of the research and its aim. Furthermore, they informed the sample that their participation was voluntary, their answers would be kept anonymous, and they would be used exclusively for research purposes.

4. *Results*

Based on the thematic analysis process, the following themes emerged.

4.1. Teachers' experience and attitudes towards EMI and the role of digital tools in creating an inclusive classroom

The sample characterized EMI as a rewarding and challenging task, as it demands patience, flexibility, and adaptation according to learners' language skills. When asked about their understanding and conceptualization of EMI in multilingual classrooms, the participants provided answers that centred on inclusive classrooms. One teacher characterized EMI as "*teaching university subjects through English while recognizing students come from diverse language backgrounds".* Another characterized EMI as *"using English as the main teaching language but being aware of cultural and linguistic differences to support all students*". All these highlight the teachers' interest and readiness in adopting a more international and recognized teaching approach.

Nevertheless, the sample experienced a mix of positive and negative claims when talking about their experiences in teaching EMI in multilingual classrooms. One teacher characterized it as "*a very interesting journey, where I adapt my approach to address different language abilities and cultural expectations*", while noting that "*as a teacher, we still need more training on how to use digital tools effectively*". Another described the experience as "*enriching and rewarding teaching EMI promotes exchange, opens international perspectives, and prepares students for a global future*".

Such opinions stress the teachers' struggles in shifting to EMI despite their positive attitudes.

Indeed, challenges were equally prominent. One participant explained that the experience "*has been challenging, I often need to clarify terminology, provide extra language support that affects participation and engagement*". Another teacher asserted that EMI is "*sometimes hard because it's new for students, so I talk slowly, use pictures, and let students work in pairs to help each other*". The latter demonstrate that the teachers' difficulties are also tied to students' challenges in accepting this instructional approach.

4.2. *Teachers' challenges in implementing digital tools in multilingual EMI context*

The respondents experienced technical and accessibility issues in teaching EMI in multilingual classrooms.

One EMI teacher reported students' related challenges with digital tools in EMI classrooms, saying that "*students often like tools that give immediate feedback, such as quizzes or language apps, they find digital tools helpful but also challenging if they are not familiar with the technology or have poor internet connections*". This digital divide was reflected by another participant who observed that "*many students appreciate digital tools because they make learning more interactive and fun*". As they noted, frequent technical issues, including inadequate access to the internet and limited device availability, impact not only students but also teachers, as they are requires to use offline materials or recorded lectures more often.

A particularly revealing response emphasized resistance to English-medium instruction, "*I have already tried teaching in English using digital tools, but many students were resistant and preferred lessons in French. We need to find a gradual and supportive way to help them accept this change and benefit from it in the long term".* While students' preference for the French language is still prevailing, it clearly ponders on teachers.

Another factor was the different learning preferences, as one of the participants said, *"I have noticed some students prefer traditional learning or printed materials, so I try to offer both options to meet different preferences".* As one participant stated: "*I have noticed some students prefer traditional learning or printed materials, so I try to offer both options to meet*

different preferences". Another teacher cautioned about tool overload: "*Some students feel overwhelmed by too many apps, so I try to keep it simple and focus on a few good tools*". In addition to students' language preferences, teachers are also confronted with the learners' resistance to overusing digital tools, although the latter support students' collaboration, engagement, and active participation in digitalized EMI courses.

4.3. *Strategies to ensure inclusive EMI courses through digital tools*

The respondents indicated adopting various strategies for inclusive instruction. One participant listed "*videos, online courses, online quizzes, and audios, like a dialogue with scientists"* as effective resources. Another described the positive outcomes of platforms: "*Using platforms like Google Meet, e-learning, and Zoom helped students from different backgrounds work together smoothly on group projects. The collaborative tools promoted encouraged real-time communication and idea sharing, increasing engagement and teamwork in the EMI courses".*

The teachers also appreciated the collaborative tools. As one of them reported, *"Online discussion forums and shared document platforms like Google Docs, in group projects, helped students to stay motivated".* Another participant said*, "Using online shared documents helped a lot with courses, especially for those who don't assist".* Architecture teachers highlighted their efforts in design courses based on learners' levels of proficiency and in various ways and in different modes and materials (PPT, YouTube, online, in-person, etc.) to ensure the content is clear and can easily be understood by their learners. For instance, a participant highlighted that it involved inclusive participation: "*I used a collaborative online whiteboard where students could write ideas together for a group project. This helped shy students participate more and gave everyone a chance to share their thoughts visually*". These claims demonstrate the architecture teachers' determination in adapting to the diverse needs and differences of their students to design inclusive EMI courses.

In addition, teachers used other basic strategies in the classroom to facilitate understanding among students. One teacher explained, "*It wasn't easy, as I try to use simple language most of the time*". The other participant

claimed that he uses code-switching, saying, "*I sometimes use French to explain important concepts to avoid confusion*". The teachers used other strategies, such as adapting the rate and form of interaction with students. The other teacher claimed, "*I talk slowly, use pictures, and let students work in pairs to help each other*". The above quotes demonstrate how teachers use digital tools along with traditional strategies to address the different linguistic needs of students.

The sample clearly revealed that the teachers' strategies are a balanced approach, combining digital and traditional materials for a more inclusive EMI education, incorporating audio lectures, downloadable and printable materials, and offline activities. In conclusion, the strategies used by teachers in EMI education are a responsive and adaptive approach that involves digital and traditional materials. By incorporating audio and visual materials, code-switching into French, simplified language, and peer collaboration, among others, to reduce the linguistic barriers among students.

4.4. Teachers' future perspectives on the use of digital tools for linguistic inclusivity

Teachers had very positive views on the future role of advanced digital tools for enhancing EMI in a multilingual context. For example, one teacher said, "*The future is exciting, with digital tools becoming smarter and more personalized to meet each student's needs. Technologies like AI assistants and virtual classrooms could make learning English and academic content more accessible and engaging"*. Another teacher assumed, "*digital tools will become more adaptive to each student's language level and cultural background to improve learning outcomes*", while another teacher mentioned "*AI tutors*" which would provide "*interesting language experiences*".

The sample also highlighted the significance of accessibility and inclusivity. One participant mentioned, "*digital tools will play a key role in making EMI more accessible, interactive, and inclusive multicultural in higher education*". Another emphasized skill development, assuming that tools will help students "*practice speaking and listening in real-life... like applications for pronunciation practices*".

The participants' responses evoked personalized and adaptive instructions to align with learners' needs and differences, the use of AI-based

applications to leverage learners' language proficiency, and the improvement of accessibility, interactivity, and inclusivity to ensure a successful implementation of this pedagogical approach.

5. Discussion

The present study investigated architecture teachers' perceptions at the University of Bejaia regarding the role of digital tools in bridging linguistic gaps within an EMI setting. More specifically, it examined how technology mediates inclusive education within the French-dominant academic culture transitioning towards an English medium of instruction.

The findings revealed that the participants demonstrated a clear and grounded understanding of EMI, describing it as the delivery of specialized academic content through English rather than a language teaching exercise. They emphasized its potential to offer various national and international opportunities for learners and to support teachers in disseminating their research. This conceptual clarity suggests that EMI reform has raised teachers' awareness of its purposes and benefits, as well as their willingness to embrace it. Similar trends were also noted in previous studies; for example, Benabdallah (2023) found that 95% of teachers at the University of Tlemcen favoured EMI for connecting pedagogy and research, while Gouali and Benabdallah (2023) reported that only 54.5% felt adequately prepared to teach entirely in English. This indicates that awareness and positive attitudes do not necessarily translate into full readiness, particularly in a discipline such as architecture, where explaining complex spatial and technical concepts requires more than linguistic proficiency.

In this context, technology emerged as a mediator to address the gap between theoretical understanding and practical implementation. The participants reported using a range of digital tools to engage learners, access wider content, and adapt instruction to students' varying levels of English proficiency. While teachers highlighted their ability to integrate various technologies, they also expressed a need for further training in their effective use. This raises questions about whether digital tools are being used in a pedagogically informed way or primarily as compensatory strategies to address linguistic challenges. In this sense, technology integration may

reflect adaptive practices rather than fully developed digital pedagogies competence.

The findings revealed substantial challenges such as limited internet access, inadequate infrastructure, students' reluctance to shift to English, and students' preference for French and traditional teaching. The latter should not be regarded as isolated technical or pedagogical issues only, but also as indicators of a broader structural problem related to the top-down implementation of EMI. Thus, digital tools appear not as institutionally embedded resources but as individual strategies used by teachers to compensate for systemic and linguistic gaps. This claim broadly corroborates Bouguebs (2025), who pointed to the results of such an implementation policy, including inconsistent professional development, absence of standardized material-adaptation frameworks, and weak collaboration between content teachers and ESP practitioners. Similarly, Rouagh et al. (2025) highlighted the limited stakeholder consultation. This reveals a paradox at the heart of the Algerian EMI experience, where teachers act as adaptive mediators of the reform while institutional support is highly required.

It is noteworthy to highlight that most of the reported challenges were framed from the students' perspective, including their preferences for French, their reliance on familiar applications, and their reluctance towards the use of multiple digital tools or English-medium instruction. In contrast, teachers tended to minimize their own difficulties, apart from infrastructural constraints such as limited internet access. They also emphasized their ability to provide alternative solutions, such as offline materials. This imbalance may suggest that teachers position themselves as adaptable agents within this reform by underreporting their own challenges. At the same time, it can also reflect their efforts in adapting to students' needs, which places additional pedagogical burdens on them as they attempt to balance linguistic, technological, and disciplinary demands.

Furthermore, these adaptive strategies extend beyond pedagogical flexibility, demonstrating their inclusive-oriented practices. The letter can be interpreted from Gracia's (2009) perspective of the term "translanguaging" as "multiple discursive practices which bilinguals engage in order to make

sense of their bilingual worlds" (Gracia, 2009, as cited in Gracia & Lin, 2016, p. 120). Although only a few participants explicitly report drawing on multiple linguistic repertoires, teachers combining multiple languages and digital tools are not simply diversifying formats; they are redistributing meaning across multiple semiotic resources to reduce the impact of low English proficiency. This reflects the teachers' adaptation and use of linguistic and technology tools to support inclusivity in an EMI context where both learners and teachers operate with limited levels of linguistic competence. However, further investigation is needed to examine how translanguaging practices are enacted in the classroom.

Indeed, Gulle (2024) argued that a focus on English-only instruction seems ideologically misleading rather than pedagogically effective because it drastically affects academic success and can be less beneficial for learners with low proficiency levels. Therefore, the author advocated a pedagogical shift that recognizes and promotes translanguaging and multilingualism. Therefore, the concept of translanguaging through digital multimodality has more significance in the architecture field, which often involves moving beyond verbal language and using visual and spatial languages. That is because meaning is mostly constructed through drawings, diagrams, and models as much as through language. Therefore, tools such as PowerPoint, YouTube videos, and visual materials function not only as instructional aids but also as mediators of the Francophone-to-Anglophone transition. They create a multimodal learning space where understanding is not solely dependent on English proficiency but also on visual and spatial representations.

However, these practices should be understood in relation to the current proficiency issues faced not only by learners but also by teachers. For instance, Idri (2025) reported that teachers' English proficiency ranges from A1 to B1, while Mizabe et al. (2025) found that speaking is the weakest skill and that many participants acknowledged grammatical difficulties. Similarly, Mokiwai and Mokhele-Ramulumo (2024) highlighted that EMI can create barriers in science-related disciplines where conceptual understanding is closely related to language comprehension. Consequently, language

comprehension emerges as an important factor that acts as a barrier to the understanding of complex scientific concepts, especially for those who have been taught in English.

In response to these challenges, participants also proposed the integration of emerging technologies, such as artificial intelligence assistants, to enhance accessibility, interaction, and real-life communication practice. However, they stressed the need for equitable access to this technology and professional development.

Therefore, this study suggests that EMI implementation in architecture discipline should involve the design of a syllabus that builds on the field's visual and spatial epistemology, integrating digital multimodality and translanguaging practices rather than relying on English proficiency as the sole pathway to inclusive content access. This approach is important in a post-francophone and multilingual academic context, as this would facilitate a gradual and inclusive transition. Furthermore, this study has significant implications for policymakers, curriculum developers, and teachers. Institutions need comprehensive policies that address infrastructure development, teacher training, and student mentoring. This is in line with the views of Khenioui and Bennacer (2025), who emphasized that quality assurance mechanisms and support structures, including mentorship programs, peer cooperation, and professional development, empower English as a Foreign Language (EFL) lecturers, and promote the success of English Medium Instruction (EMI) initiatives.

5.1. Contributions of the study

The study has contributed to the field of EMI research in the following ways:

- It provides a conceptualization of inclusivity within EMI by highlighting how digital tools assist in redistributing meaning across linguistic and semiotic resources. This suggests that inclusivity in EMI cannot be limited to language simplification but should also be understood as a multimodal and dynamic process of meaning-making. In this regard, technology will not only be seen as an improvement

tool in instruction but will also be recognized as a mediator in facilitating an inclusive approach in the transition of EMI.

- The study highlights teachers' agency in this higher education reform. The findings show that teachers effectively negotiate and adapt to the constraints of instruction to ensure an efficient implementation of EMI and align with the students' needs simultaneously. This indicates that EMI implementation is not a linear process but rather a negotiated practice that is shaped by classroom realities. Therefore, this research contributes by highlighting teachers' engagement in the EMI context.
- By focusing on teachers' attitudes, the study provides insights into how EMI is experienced from teachers' perspectives and how technology mediates inclusivity when English proficiency levels vary among both teachers and students. It shows that inclusivity is not a policy objective but a pedagogical practice shaped by linguistic, technological, and disciplinary demands in a multilingual context.

5.2. Limitations of the study

This study acknowledges the existence of several limitations. First, the findings are based on a small sample size that is limited to only one department. This could affect the generalizability of the results to a larger scope. Thus, further research could address this with an increased participant number, incorporating EFL teachers from various departments and universities. Moreover, the study was based on the use of self-administered questionnaires as the primary tool for conducting the research. This could have been limited in collecting data from various perspectives. Thus, the study could have been more effective in collecting data from various perspectives by using mixed methods. Nevertheless, this research provides valuable insights into how digital tools are used by architecture teachers from the University of Bejaia to support an inclusive EMI education in a multilingual setting.

5.3. Recommendations

Based on the findings and the discussion, several practical recommendations evolve to support the effective integration of EMI in Algeria's multilingual context, including the architecture field.

Initially, it is recommended that university teachers consider developing a multimodal EMI syllabus that focuses on visual epistemology. Since architecture relies significantly on drawings, models, and diagrams, teachers should integrate digital tools that include meaning construction through images and videos rather than language alone. In doing so, instructors can reduce the linguistic barrier for students with limited English proficiency.

Subsequently, the study highlighted the significant role of integrating translanguaging and inclusive digital pedagogies in mediating the transition to EMI within an inclusive environment. Therefore, teacher training stands as an essential measure in order to equip teachers with practical strategies for using digital multimodality and strategically combine French, Arabic, and English through digital tools. In addition, teachers should also be involved in professional development dedicated to using artificial intelligence for pedagogical purposes.

Lastly, policymakers should address infrastructure accessibility by ensuring equitable availability and access to quality internet connectivity, adequate devices, and offline learning resources. This study emphasized that while students favor interactive digital learning environments, unstable internet and limited device access hinder inclusivity. Therefore, institutions should invest in integrated approaches, such as recorded lectures, to overcome any technical issue that may arise. Additionally, universities should initiate AI-driven adaptive technologies as they become available.

6. Conclusion

This paper has emphasized the important role that digital technologies play in helping to overcome linguistic barriers, enhance inclusivity, and improve the quality of English as a Medium of Instruction among architecture teachers and students at the University of Bejaia. The study has found that teachers view digital innovations as a significant tool in helping students from different linguistic backgrounds in EMI contexts. The successful implementation of digital technologies in EMI contexts has the potential to improve students' English language skills, since students are given more opportunities to practice English, apart from the usual English language classrooms. However, there are technical and linguistic barriers that

need to be addressed in order to maintain successful EMI implementation in a multilingual setting. As educational technologies continue to emerge, they provide great potential for enhancing both the quality and accessibility of English as a Medium of Instruction in Algeria's linguistically diverse higher education landscape.

References

Ammade, S., Mahmud, M., Jabu, B., & Tahmir, S. (2018). Integrating technology in English language teaching: Global experiences and lessons for Indonesia. *International Journal of English Linguistics, 8*(6), 107.

Azmina, B. A., Fauziati, E., & Drajati, N. A. (2019). Instructional design of CALL course in Indonesian higher education for future English teachers: A case study. *International Journal of Educational Research Review*, *4*(2), 223-230.

Benabdallah, A. (2023). The needs and attitudes of disciplinary-based teachers in the pursuit of an English language reform in Algerian higher education. *International Journal of Learning and Teaching, 15*(4), 162-172. https://doi.org/10.18844/ijlt.v15i4.8818

Benhamlaoui, M., & Benzadri, Z. (2024). Attitudes of Algerian university teachers and students towards English as a medium of instruction: A comparative analysis with Arabic and French. *Akofena*, 3, 261-274. https://doi.org/10.48734/akofena.n012.vol.3.23.2024

Bhatia, R., & Singh, R. (2021). Inclusion: Historical perspectives, inclusive education and current status. *Elementary Education Online, 20*(1), 8587–8605. https://doi.org/10.17051/ilkonline.2021.01.878

Boubekeur, S. (2021). Languages and conflicts: Arabisation, French, and English in the Algerian educational system. *Afaq Fikriya Journal, 9*(1), 385-396.

Bouguebs, R. (2025). Shaping Algeria's EMI future: Advancing beyond linguistic competence to achieve pedagogical transformation. *Journal of Studies in Language, Culture and Society (JSLCS), 8*(2), 152–171.

Braun, V. and Clarke, V. (2006) Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, *3*(2), 77-101. http://dx.doi.org/10.1191/1478088706qp063oa

De Borba, N. J., Ferreira, V. a. S., Santos, T. P. D., & Carvalho, S. (2024). Inclusive education. *Revista Gênero E Interdisciplinaridade*, *5*(03), 182–191. https://doi.org/10.51249/gei.v5i03.2073

Eshchanova, G. H. (2024). Online platforms and tools for the implementation of the flipped classroom model in EMI. *Mental Enlightenment Scientific – Methodological Journal*, *5*(6), 58-63. https://doi.org/10.37547/mesmj-V5-I6-08

García, O., & Lin, A. M. Y. (2016). Translanguaging in bilingual education. In O.García, A. M. Y. Lin, & S. May (Eds.), Bilingual and Multilingual Education (Encyclopedia of Language and Education) (pp. 117-130). Springer. https://doi.org/10.1007/978-3-319-02258-1_9

Ghouali, K., & Bouabdallah, F. H. (2024). Englishisation of Algerian higher education through EMI: Expectations versus reality. *Aleph*, *11*(4-2), 629-642. https://aleph.edinum.org/13133

Graham, K. M., & Eslami, Z. R. (2021). English-Medium Instruction. In H. Mohebbi & C. Coombe (Eds.), *Research Questions in Language Education and Applied Linguistics: A Reference Guide* (pp. 59–62). Springer International Publishing. https://doi.org/10.1007/978-3-030-79143-8_11

Guba, E. G., & Lincoln, Y. S. (1989). Fourth generation evaluation. Newbury Park, CA:Sage Publications

Guenaoui, I. (2024). Investigating the shift to English as a medium of instruction in the Algerian higher education: the case of First-Year students and teachers of Mathematics and Computer Science at the University of Ain Temouchent Belhadj Bouchaib [Ma Thesis, Belhadj Bouchaib University - Ain Temouchent].

Guermat, A. M. E., & Boubekri, A. E. (2025). Critical Digital Approach in EMI for Decolonizing Education. *International Journal of English Language Studies*, *7*(5), 01–11. https://doi.org/10.32996/ijels.2025.7.5.1

Gülle, T. (2024). English Medium instruction in Higher education: Global trends, challenges, and the call for multilingual approaches. *English Studies at NBU*, *10*(1), 73–94. https://doi.org/10.33919/esnbu.24.1.5

Hamane, S. (2023). Language shift in higher education in Algeria: A comprehensive examination of advantages and challenges to English-medium instruction (EMI). *Ziglôbitha, Revue des Arts, Linguistique, Littérature & Civilisations. RA2LC Hors-Série,* (1), 273-282.

Helm, F. (2019). EMI, internationalization, and the digital. *International Journal of Bilingual Education and Bilingualism.* https://doi.org/10.1080/13670050.2019.1643823

Idri, N. (2025). *Bridging linguistic and technological divides in Algerian healthcare*. International LET-IN 2025 Conference: Innovations in Learning and Teaching, Turkey.

Khenioui, N., & Bennacer, F. (2025). Breaking barriers for English as a foreign language lecturers: The power of quality assurance measures in driving English medium instruction success in Algerian higher education. In F. Rouaghe, N. Idri, & T. Assassi (Eds.), English Medium Instruction in Higher Education: Unveiling the North African Context. Springer.

Khenioui, N., & Boulkroun, M. (2023). Exploring the implementation of English as a medium of instruction in Algerian higher education: Motivations, challenges, and strategies for success. 73-50, (5)*8, آفاق للعلوم* https://www.asjp.cerist.dz/en/article/234911

Luu, T. Q. H., Sit, H. H. W., & Chen, S. (2023). Development of English Medium Instruction (EMI). In T. Q. H. Luu, H. H. W. Sit, & S. Chen (Eds.), *Cultural Interactions of English-Medium Instruction at Vietnamese Universities: The Western Proposition by the Eastern Implementation* (pp. 11–38). Springer Nature. https://doi.org/10.1007/978-981-19-8098-5_2

Mali, Y. C. G., & Salsbury, T. L. (2021). Technology Integration in an Indonesian EFL Writing Classroom. *TEFLIN Journal: A Publication on the Teaching & Learning of English*, *32*(2).

Marzuki, A.G. (2017). Developing speaking skill through oral report in an efl class in indonesia, *Al-Ta'lim Journal, 24*(3), 243-254.

Mizab, M., Tayaa, K., & Daira, S. (2025). English language teaching enhancement committee chronicles: Unraveling Tebessa University subject-matter teachers' attitudes towards English-medium instruction training. In F. Rouaghe, N. Idri, & T. Assassi (Eds.), English Medium Instruction in Higher Education: Unveiling the North African Context. Springer.

Mokikwa, H., & Mokhele-Ramulumo, M. (2024). Navigating language diversity in multilingual STEM classrooms: Strategies for inclusive education. *International Education Trend Issue*, 2(2), 92–106. https://doi.org/10.56442/ieti.v2i2.421

Ngo, P. L. H. (2024). EMI programmes in Vietnamese higher education: a case study of translanguaging practices for inclusive education. *Journal of English as a Lingua Franca*. https://doi.org/10.1515/jelf-2024-2008

Rahman, M. M. U. (2026).AI-Assisted translanguaging in EMI classrooms: Insights from Saudi EFLl learners. *Isagoge - Journal of Humanities and Social Sciences*, *6*(1), 61–82. https://doi.org/10.59079/isagoge.v6i1.287

Rose, H., Sahan, K., & Zhou, S. (2022). Global English Medium Instruction: *Perspectives at the crossroads of Global Englishes and EMI. Asian Englishes*, *24*(2), 160–172. https://doi.org/10.1080/13488678.2022.205679

Rouaghe, F., Assassi, T., & Rahnama, M. (2025). Glocalised Policy analysis of English-Medium Instruction in Algerian higher education: Balancing global aspirations and local realities. Journal of Studies in Language, Culture, and Society (JSLCS)8(3), 198-211.

Sahki, T. (2025). The adoption of English medium instruction (EMI) in Algerian higher education: Linguistic and identity considerations. *Ziglôbitha, Revue des Arts, Linguistique, Littérature & Civilisations*, *4*(13), 193-206.

Saud, M. S. (2019). Linguistic diversity in the English-Medium Instruction Classroom in Nepal: challenge or chance. *International Journal of*

English Language Education, *7*(1), 70. https://doi.org/10.5296/ijele.v7i1.14887

Smyth, F., Shevlin, M., Buchner, T., Biewer, G., Flynn, P., Latimier, C., Šiška, J., Toboso-Martín, M., Díaz, S. R., & Ferreira, M. A. (2014). Inclusive education in progress: policy evolution in four European countries. *European Journal of Special Needs Education*, *29*(4), 433–445. https://doi.org/10.1080/08856257.2014.922797

Tai, K. W. H. (2021). Translanguaging as inclusive pedagogical practices in English-Medium instruction science and Mathematics classrooms for linguistically and culturally diverse students. *Research in Science Education*, *52*(3), 975–1012. https://doi.org/10.1007/s11165-021-10018-6

UNESCO. (2026, January 30). *Inclusion in education*. https://www.unesco.org/en/inclusion-education

Vo, D., T. (2021). *The use of digital technologies in an English-medium instruction context: A case study of Vietnamese higher education*

Williams, B. (2024, October 25). *Exploratory descriptive qualitative research explained*. *Insight - Call Analytics & AI Coaching for Customer Teams.* https://insight7.io/exploratory-descriptive-qualitative-research-explained/

Zemali, S., & Naoua, M. (2023, May 8). *English as a medium of instruction in Algerian higher education: Prospects and challenges* [Slide show]. weebly. https://salemzemali.weebly.com/uploads/7/9/5/1/7951948/presentation.pdf