
Integration of Artificial Intelligence in English-medium Teaching of Accounting and Financial Sciences in Algeria: Issues, Limits, and Perspectives

L'intégration de l'intelligence artificielle dans l'enseignement en anglais des sciences financières comptables en Algérie : Enjeux, limites et perspectives

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Abstract: This study explores the issues and perspectives of integrating Artificial Intelligence (AI) into the English-medium teaching of accounting sciences in Algeria, within the context of the reform mandating English-Medium Instruction (EMI). Based on an exploratory survey conducted with 120 teachers and students in accounting and finance, the analysis reveals a growing use of AI tools for translating financial concepts, but also persistent difficulties related to linguistic accuracy and adaptation to national accounting standards (SCF). The results show that a majority of respondents express the need for specialized AI platforms and dedicated training for teachers. The discussion highlights the specificities of the Algerian context, marked by multilingualism and the coexistence of local and international standards. The study recommends a progressive and contextualized approach to AI integration, combining technological solutions with human-centered pedagogy. Finally, it opens avenues for future research on hybrid models and academic cooperation.

Keywords: Artificial Intelligence; accounting sciences; EMI; ESP; Algeria.

Résumé : Cette recherche s'intéresse aux défis et aux perspectives qu'apporte l'utilisation de l'intelligence artificielle dans l'enseignement des sciences comptables en anglais en Algérie. Elle se situe dans le contexte des récentes réformes qui imposent l'emploi de l'English Medium Instruction EMI. A partir d'une enquête réalisée auprès de 120 enseignants et étudiants en comptabilité et finance, les résultats montrent une adoption croissante des outils numériques pour aider à la traduction des notions financières. Cependant, des difficultés persistent notamment sur le plan de la précision linguistique et de la prise en compte des normes comptables nationales SCF. Une large part des personnes interrogées souligne le besoin de plateformes adaptées et de formations spécifiques destinées aux enseignants. L'analyse met aussi en avant les

particularités du contexte algérien, où se croisent plusieurs langues et où coexistent des normes locales et internationales. L'étude préconise une intégration progressive et contextualisée de ces technologies, en combinant solutions techniques et approches pédagogiques. Enfin, elle ouvre la voie à de futures recherches portant sur les dispositifs hybrides et les collaborations entre institutions.

Mots-clés : Intelligence artificielle ; sciences comptables ; EMI ; ESP ; Algérie.

Introduction: Artificial Intelligence (AI) is substantially transforming education systems across the globe. In higher education in particular, it is altering instructional processes, evaluation methods, and learning transmission tools. This revolution in technology is no longer only limited to technical disciplines; it extends to complex disciplines such as accountancy, where depth of concept and precision in nomenclature are needed (Luckin et al., 2016).

Against this global context, Algeria has initiated a strategic reorganization of its higher education, with English as the language of instruction in a variety of fields, including economics, finance, and accounting (Mahi, 2024). This shift to English-Medium Instruction (EMI) raises a number of challenges, linguistic, legal, and technological. It is not just a matter of learning economic jargon in English but also being capable of teaching precise, highly codified subjects like accounting and tax law.

The accounting profession, in particular, calls for lexical exactness in a legally formalized setting that is likely to be restrictive. A primary question arises: can educators provide assurance of good English instruction without resorting to Artificial Intelligence tools? And, if AI is used, how can it ensure accuracy of accounting jargon to national (SCF) and global (IFRS) standards?

This issue acquires a further layer of complexity as linguistic instruments employing AI, for instance, DeepL, Grammarly, or certain expert portals, remain still not sufficiently applied in multilingual circumstances and the accompanying legal frameworks within countries such as Algeria, as also testified to by Haddad et al. (2024).

The aim of this paper is twofold: on the one hand, to analyze the problems related to the use of AI in accounting sciences teaching with the English medium; and on the other hand, to quantify the opinions of teachers and students regarding these tools in the new Algerian context. It will also establish the needs for the correct, ethical, and contextualized use of these technologies.

The structure of this paper is composed of four sections. The first introduces the theoretical background, distinguishing between EMI and ESP and positioning the use of artificial intelligence in university settings. The second describes the

methodology adopted, that the survey was conducted at the Faculty of Economic Sciences, Department of Financial Sciences and Accounting, on teachers and students. The third elaborates on the outcomes obtained and provides an interpretation of the most important trends found. Finally, the fourth section closes the research by synthesizing the findings, identifying the limitations, and suggesting avenues for future studies.

1. Conceptual Framework

1.1. Definition and Distinction between EMI and ESP

In the higher education context, two English models exist but serve distinct purposes: English-Medium Instruction (EMI) and English for Specific Purposes (ESP). The distinction between the two must be explained in order to appreciate the pedagogical and technological implications of their adoption, particularly in technical and controlled professions such as accounting.

EMI refers to pedagogic approach where a non-linguistic subject (e.g., accounting or finance) is taught in English to students whose language is not their mother language (Macaro et al., 2018). The most significant aim is not language acquisition but presentation of disciplinary content in English (Macaro, 2018). For instance, a course in "Accounting Principles" fully taught in English at an Algerian university falls within EMI.

Conversely, ESP aims to instruct English for a specific purpose, within a particular area of work or study. ESP involves specialized instruction of language meant to prepare learners to acquire language skills to facilitate communication in their area of study (Hutchinson and Waters, 1987). An English for Accounting course will focus on technical vocabulary, sentence structures of financial reports, and phrases commonly found within the accounting reports.

1.2. Artificial Intelligence in Higher Education

The integration of Artificial Intelligence (AI) into higher education is a major revolution in the process of learning, both in means and method.

AI is no longer limited to the simple automation of administrative tasks or repetitive exercises; it has become an active agent in adapting content, personalizing learning paths, and providing formative assessment (Ouoba, N. E., 2024). According to Luckin et al. (2016), educational AI is based on three main components: learner modeling, system adaptability, and pedagogical interactivity. These technologies help identify student gaps, offer tailored content, and provide immediate and targeted feedback (Luckin et al., 2016). In technical disciplines like STEM, AI is already used to guide students in complex simulations (El Azzouzi, M., and Chetouani, A., 2024) or to generate interactive exercises on platforms like ALEKS (Falmagne et al., 2013). In economics, and particularly in accounting, AI is integrated into educational software that allows for the

automatic analysis of financial statements, identification of errors or inconsistencies, and even simulation of audits.

These advancements transform the role of the teacher, who is now seen as a facilitator of an AI-assisted learning environment. However, the use of these tools in developing countries like Algeria is hindered by technical (infrastructure, connectivity), human (lack of training), and cultural (reluctance to delegate part of the teaching process to machines) barriers (Pedro, et al., 2019; Faouzi, H., 2025). It is therefore essential, in any AI integration project, to adopt a user-centered approach (both teacher and student) and adapt to the local legal, linguistic, and institutional context.

1.3. Linguistic and Legal Issues in Teaching Accounting in English

Teaching accounting in English raises specific challenges that go beyond the simple linguistic framework. The accounting discipline is indeed governed by strict standards, whether national (like the SCF in Algeria) or international (like IFRS). Translating accounting concepts must ensure rigorous terminological accuracy to avoid legal or tax errors (Taillefer, G., 2002).

The shift to English-Medium Instruction (EMI) in Algerian accounting programs imposes a double requirement on teachers and students: mastering business-specific English and understanding the subtleties of international financial standards. However, as Triboulet (2022) and Mayor (2024) have noted, AI translation tools such as DeepL, Google Translate, or even ChatGPT will not adequately translate technical terms and nuances of legal abstractions.

For example, "provision" suggests varying meanings if applied when taking into account the provisions within the context of IFRS, French GAAP or the Algerian SCF. There are significant implications in terms of regulatory compliance and financial statements as an incorrect translation.

From a pedagogical standpoint, this results in increased complexity for teachers, who must not only ensure linguistic accuracy but also guarantee alignment with applicable standards. Educational AIs must therefore integrate specialized glossaries, validated by accounting experts, and be able to adjust their suggestions to the legal context of the target country.

Finally, the challenge is also sociolinguistic: in Algeria, where multilingualism (Arabic, French, English) is a reality, the massive introduction of legal and accounting English through AI tools must take into account cultural specificities and potential resistance.

Thus, the issue is not only technological but also legal, linguistic, and contextual, calling for a reasoned and localized integration of AI solutions in English-language accounting education.

1.4. Recent Work on AI and EMI in Financial Disciplines

The convergence of Artificial Intelligence (AI), English-Medium Instruction (EMI), and financial sciences is attracting increasing interest in international research. Several recent studies highlight the opportunities offered by AI to support the teaching of regulated and sensitive disciplines like accounting and finance.

Bhutoria (2022) provides a systematic review showing how "Human-in-the-Loop" AI systems can enhance content personalization while maintaining human control, which is crucial in regulated fields like finance. In the context of EMI, Macaro et al. (2018) analyzed the specific challenges encountered in higher education, particularly the risks of oversimplifying disciplinary language and the difficulty for non-specialist English teachers to ensure the faithful transmission of concepts.

In accounting disciplines, platforms like MindBridge AI are now used at some universities to train students in automated anomaly detection and digital auditing, while respecting IFRS standards. These tools combine big data analysis with the automated translation of financial concepts.

UNESCO has also emphasized that the introduction of AI in education, especially in resource-limited countries, must be done with caution to avoid widening the gap between well-equipped institutions and peripheral ones. Finally, a recent study by Kumor et al. (2024) shows that using AI tools in financial mathematics classes at secondary and university levels improves student motivation, provided these technologies are accompanied by dedicated teacher training.

Thus, the literature converges on recommending a hybrid approach: using AI's adaptive power to personalize learning in EMI while maintaining human oversight to ensure disciplinary accuracy, especially in accounting, where legal and financial stakes are significant.

2. Methodology

2.1. Approach: Analytical Qualitative and Exploratory Survey

This study adopts a dual approach: on one hand, a qualitative analysis of the scientific literature on artificial intelligence (AI) applied to the teaching of accounting sciences in English, and on the other hand, an exploratory survey conducted among Algerian teachers and students.

The choice of an exploratory methodology is justified by the emerging nature of AI integration in the Algerian context and the novelty of the reform imposing English-Medium Instruction (EMI). Such an approach allows for the identification of trends and an understanding of the perceptions and expectations of the concerned actors.

2.2. Questionnaire Description

The administered questionnaire consists of nine closed-ended questions, organized around three main areas:

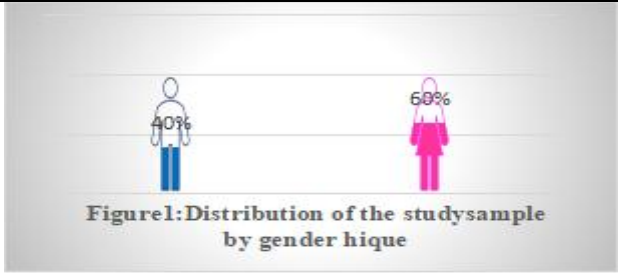
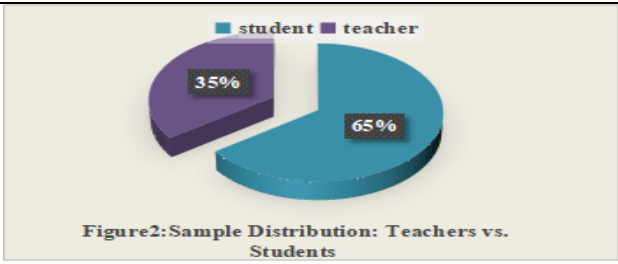
- The frequency and use of AI for translating accounting concepts
- Problems encountered when using these tools
- Expectations regarding a specialized platform and the training needs of teachers

The construction of the questions was based on the methodological recommendations of Pardo and Siemens (2014), who emphasize the importance of integrating items that address both technological usage and the associated pedagogical challenges.

2.3. Target Population and Data Collection

The questionnaire was distributed to a sample of economics and accounting teachers, as well as students enrolled in Master's programs at Algerian universities involved in the EMI reform.

Data collection took place between February and March 2024, in digital format via Google Forms and on paper in certain faculties where connectivity was limited. A total of 120 usable responses were collected, which provides a relevant base for an exploratory study.

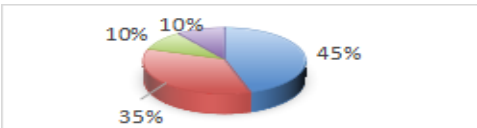
Figure	Attribute	%
 Figure1: Distribution of the study sample by gender	Male	40%
	Female	60%
 Figure2: Sample Distribution: Teachers vs. Students	Teacher	35%
	Student	65%
Table1: Personal Data of the study sample Source: Data from our online questionnaire, processed with Excel		

2.4. Methodological Limitations

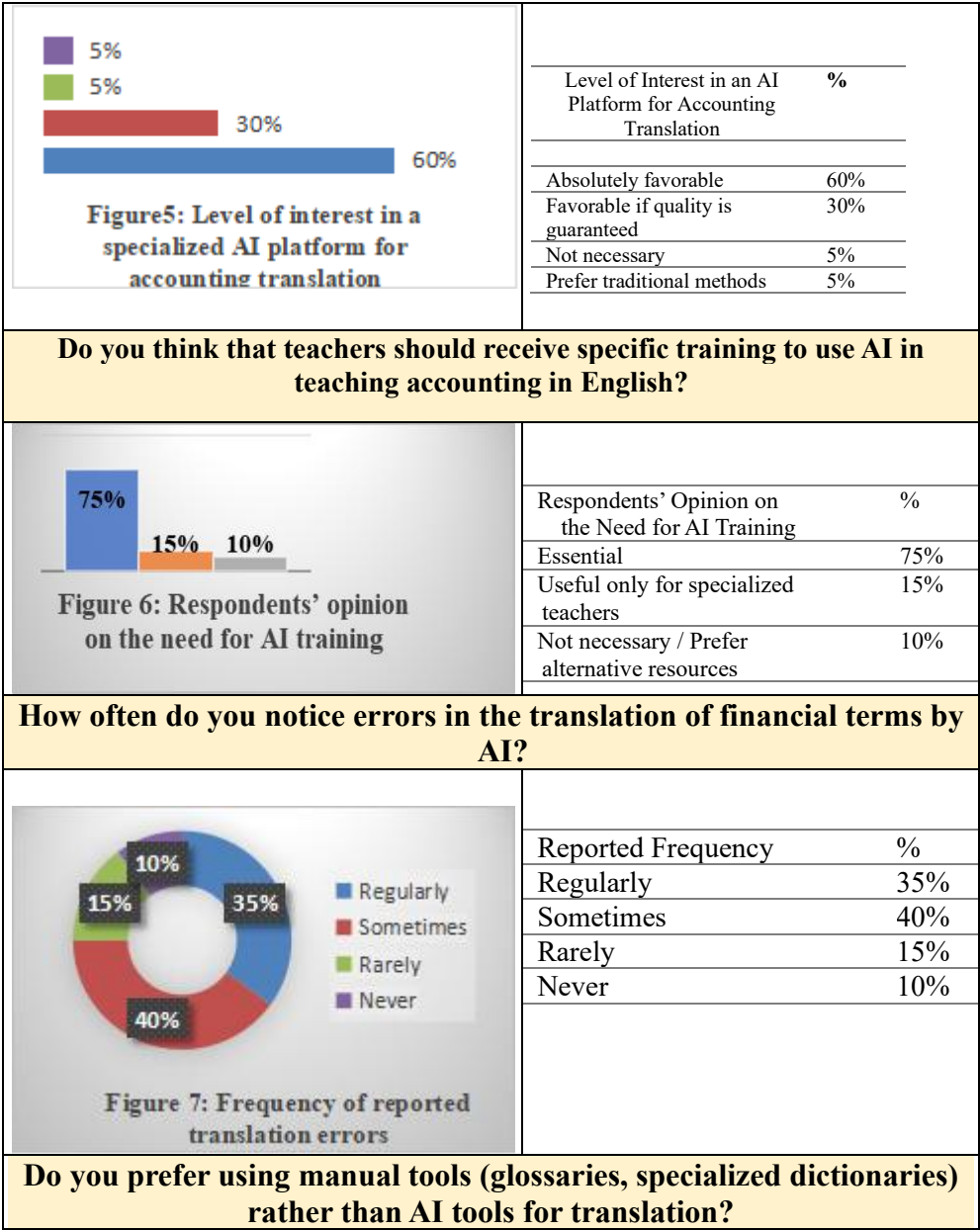
As with all exploratory research, there are a few limitations to this study. First, the sample is small and does not claim to provide national statistical representativeness. Second, the responses are self-reported and could contain interpretation biases.

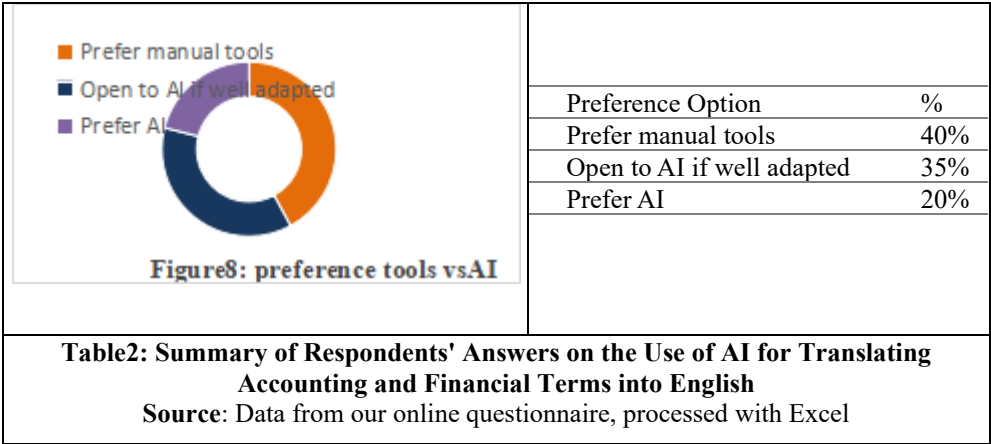
Furthermore, the Algerian specific context, with its multilingualism realities and disparate digital infrastructure, makes the results difficult to extrapolate to other countries. These limitations are, however, counterbalanced by the richness of qualitative data obtained, providing useful pointers for future large-scale research.

3. Results and Analysis

Figure	Attribute	%
How often do you need to translate accounting or financial terms into English?		
 Figure3:Frequency of using AI tools for accounting translation among respondents	Frequency of Use	%
	Always or very often	45%
	Sometimes	35%
	Rarely	10%
	Never	10%
Have you encountered any issues with the translation of financial terms by AI (accuracy, relevance, etc.)?		
 Figure 4: Frequency of translation problems	Frequency of Translation Problems Reported	%
	Frequently	50%
	Sometimes	30%
	Rarely	15%
	Never	5%
Would you be interested in an AI-based platform specialized in the translation of accounting and financial terms into English?		

Integration of Artificial Intelligence in English-medium Teaching of Accounting and Financial Sciences in Algeria: Issues, Limits, and Perspectives





The analysis of the collected responses shows that artificial intelligence (AI) is already significantly widespread among accounting teachers and students. Nearly 90% of respondents, including both teachers and students, report using AI tools to translate accounting and financial terms, with 45% using them regularly ("always or very often") and 35% using them occasionally. This adoption, although uneven, reflects an ongoing digital transition in the educational field, while also indicating potential for further progress towards more systematic use.

However, this widespread usage is hindered by persistent technical limitations. Half of the users (50%) report frequent translation issues, particularly regarding the accuracy of accounting concepts and discrepancies between local standards (SCF) and international frameworks (IFRS). These difficulties, occasionally noted by an additional 30% of respondents, act as a barrier to trust and to the full integration of AI tools into academic practices.

In response to these shortcomings, there is a clear demand for a specialized solution. A large majority of respondents, including teachers, strongly favor the development of an AI platform dedicated to accounting translation, while a significant portion are open to the idea provided that quality is ensured. This confirms the existence of a strong demand for better-adapted tools that combine AI technological expertise with the specific requirements of local accounting practices.

Teacher training also emerges as a key factor in this integration process. A large majority (75%) consider AI training "essential," highlighting the critical role of human competencies in supporting the digital transition. It is therefore not only the performance of the tools that matters but also the ability of teaching staff to master their use.

Finally, the study reveals a divide in pedagogical preferences: despite the evident interest in AI, 40% of respondents remain attached to manual tools

(glossaries, dictionaries), which are perceived as more reliable; 35% are open to AI if it is well-adapted; and 20% already prefer AI solutions. This duality illustrates a transitional phase in which AI is gaining ground, yet traditional methods continue to retain an important role in academic practice.

4. Discussion and Recommendations

The analysis of the results highlights a significant adoption of artificial intelligence (AI) tools by accounting science teachers and students in Algeria, with nearly 90% of respondents reporting their use in pedagogical practices. However, notable challenges remain, particularly regarding linguistic accuracy, with 50% indicating frequent issues in translating financial terms. Interest in developing a specialized AI platform is strongly expressed, with 90% of participants supporting such an initiative, provided that terminological quality is adapted to local standards. Teacher training also emerges as a crucial lever, with 75% considering it essential for the effective integration of these technologies. Finally, while some respondents remain attached to traditional manual tools, a majority appear open to greater AI use, provided it is contextualized and reliable. These findings thus lay the foundation for targeted recommendations aimed at supporting a progressive and contextually adapted digital transition within the Algerian accounting field.

These results confirm several trends already identified in the scientific literature. The strong demand expressed by Algerian teachers and students for AI tools specialized in accounting aligns with Bhutoria's (2022) conclusions, which emphasize that "human-in-the-loop" AI systems can deliver effective personalization while maintaining the indispensable human oversight required in regulated disciplines. However, the linguistic challenges reported in this study also echo the critiques raised by Macaro et al. (2018) regarding the limitations of English Medium Instruction (EMI) when addressing complex legal and financial concepts. In the Algerian context, the challenge is twofold. Multilingualism (Arabic, French, and English) complicates the uniform adoption of disciplinary English. Moreover, Algerian accounting standards (SCF) include specific features that do not always align with the IFRS frameworks used by international AI tools. These linguistic and legal constraints call for AI solutions that are contextualized and adapted to the national normative realities.

Beyond technical challenges, this research sheds light on a critical human need: teachers express a strong demand for training to better harness these technologies. The fact that 75% of respondents consider such training essential echoes UNESCO's recommendations, which advocate for supporting teachers in the reasoned adoption of AI. Structural limitations, such as unequal internet access

and the absence of local platforms, also constitute barriers that must be progressively overcome.

In light of these findings, several courses of action can be proposed. It appears essential for Algerian universities to invest in robust digital infrastructures tailored to the local context. Establishing partnerships with AI tool developers capable of integrating SCF standards and Algerian legal specificities represents a strategic opportunity. At the same time, continuous teacher training should be strengthened, not only in terms of language skills but also in the critical mastery of technological tools. AI solution providers are likewise encouraged to develop multilingual tools capable of managing the complexity of the Algerian accounting framework while ensuring rigorous terminological precision. Finally, advancing academic research on hybrid models- combining AI and human oversight- emerges as a promising avenue to ensure the progressive and qualitative integration of AI into accounting education in English. Cooperation between Algerian universities and specialized foreign institutions could accelerate this dynamic by sharing best practices and developing tailored pedagogical tools.

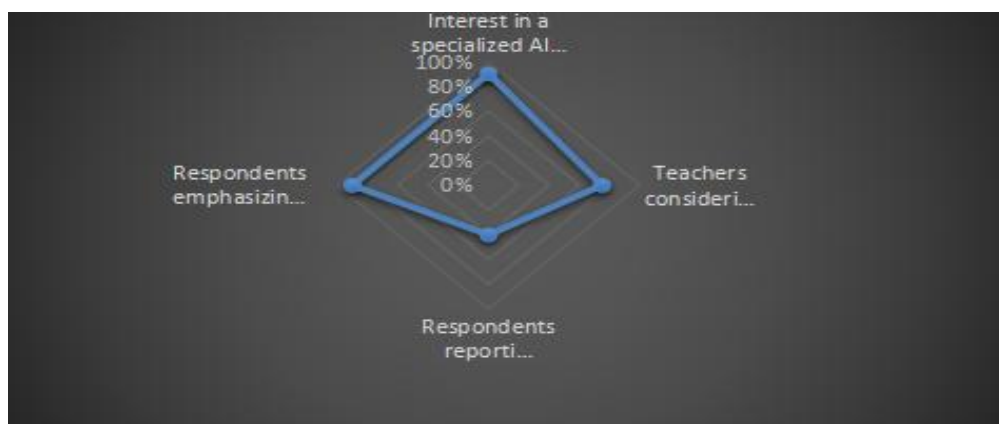


Figure9: Key Findings from the Survey on AI Integration in Accounting Education in Algeria

Source: Data from our online questionnaire, processed with Excel

Conclusion

This study has demystified the prospects and pitfalls of using artificial intelligence (AI) in the instruction of English-language accounting in Algeria. From a survey conducted from students and teachers, it's evident that the use of AI tools is already prevalent in pedagogical practice, particularly in translating accounting and financial terminology. However, there have been consistent issues, notably with linguistic precision and local adaptation of accounting standards.

The first question, of whether AI is a required tool to enable the EMI reform of accounting, is given a qualitative answer. While AI undoubtedly is of considerable potential to make specialist English learning easier, it is very much contingent on its situation to the Algerian legal and linguistic framework, and on teacher preparation for deployment. The study confirms that the transition to English-medium instruction in accounting cannot be effectively achieved without a reasoned and guided use of intelligent technologies.

Moreover, the findings support the fact that the pragmatic recommendations, detached from respondent expectations, need to be rolled out in a phased manner. This includes the development of tailored AI platforms, bringing together teacher continuous training, and crafting a hybrid approach blending digital tools with pedagogy human-centered.

The limitations of this research are in the sample and in the exploratory nature. Future research, extended to other institutions and with longitudinal comparisons, would be interesting to ascertain the long-term impact of AI on the quality of accounting instruction within the EMI setting. Additionally, the cooperation between Algerian and foreign institutions would facilitate the creation of pedagogical tools adapted to the context that could ensure a fluid linguistic and technological transition, without loss of national specificities.

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