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## **Scientific English in nursing sciences and health techniques: Attitudes and language needs of teachers in Morocco**

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### **ABSTRACT**

English is still the most dominant foreign language in non-English-speaking countries. Consequently, mastering it at a decent level is a key tool for communication and an invaluable qualification for university teaching. In the Moroccan university educational system, very few academic studies have been conducted on this topic. The present study was designed both to take an overview of the current situation and to assess the real and operational needs in terms of professional use for this language in teaching. A cross-sectional study was implemented among a random sample of 200 teachers practicing at the Higher Institutes of Nursing and Technical Health Professions in Morocco. The survey recorded a high response rate (92%), reflecting the importance of this topic amongst the study population. The participants prioritized the language skills of reading and writing over listening and speaking. Teachers' attitudes and needs towards English differ greatly according to their socio-demographic and academic backgrounds. PhD candidates, for reasons related to their scientific research, are the most likely to be interested in improving their English skills. The teaching staff in Nursing Sciences, Health Techniques are aware of the value that scientific English can contribute. However, their overall level of English tends to be low. To make up for language deficiencies, all teachers, especially those involved in academic research, are advised to enroll in English courses adapted to their level.

**Keywords:** Scientific English, language attitudes, language needs, nursing teachers, nursing sciences, health techniques

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### **INTRODUCTION**

In order to align with the choices of the international scientific community, the adoption of English as the main language in scientific publications requires more concrete action rather than being viewed as a mere option, allowing for the transfer of knowledge and the recognition of research work. The global status of English in several fields, including education, development, and professional contexts, highlights the increasing dominance and acceptance of this linguistic capital in shaping the knowledge, beliefs, and processes that open up opportunities for some and not for others (Giampapa & Canagarajah, 2017). Indeed, the international scientific community is now at a transition point between reduced multilingualism and the total monopoly of English (Hamel, 2013). English is currently a major component of the Moroccan language system. In fact, English has rapidly gained ground as an international language in Morocco, particularly at the start of the new millennium. This massive rise is particularly evident in education, where more and larger numbers of students are interested in studying the English language in the state's schools and universities (Laaraj, 2023). The impact of increasing globalization and

internationalization on higher education, particularly nursing education, has been far-reaching (Garone & Craen, 2017).

Nevertheless, success in a target language depends not only on intellectual ability but also on the learner's attitude towards language learning. This means that the acquisition of foreign languages should be approached primarily as a social and psychological phenomenon rather than a purely academic one (Abidin et al., 2012). In addition to the intellectual perspective, the nature of language learning involves psychological and social aspects that depend primarily on learners' motivation and attitude towards the target language (Padwick, 2010). Attitude is also an important factor in successful language learning. Therefore, it is important to have a positive attitude towards learning a foreign language and to experience little or no anxiety about it (Zefran, 2015). Furthermore, a positive attitude will enable the learner to be more active, improving the quality of learning, whereas a negative attitude will hinder the development of communication skills (Yuefang, 2019).

In general, English instruction emphasizes the four language skills of listening, reading, speaking, and writing. However, in English for Specific Purposes (ESP), needs analysis determines which language skills learners need most, and training programs are designed accordingly (Rahman, 2015). A program of language-specific communication training for nurses should address the cognitive and affective dimensions of interaction and provide concrete instruction to develop language skills (Gasiorek & van de Poel, 2018). The vast majority of research articles are published in English, so it is necessary for healthcare professionals to master this language if they wish to understand and/or write articles and continue to train in new technical and practical abilities (Carnet, 2016). Thus, English has become the dominant language, as many texts, sources, and academic papers are available in English, especially for courses such as evidence-based nursing practice (Lahtinen et al., 2014). In a similar way, a lack of English language skills hinders success in courses such as evidence-based nursing, where documents and course content are sometimes available in English (Garone et al., 2020).

The Higher Institutes of Nursing Professions and Health Techniques (HINPHT) were created by decree no. 2.13.658 on September 30, 2013 (Ministry of Health and Social Protection, Morocco, 2013). The mission of these institutes is to provide basic and continuing training, scientific research, and expertise in nursing and health techniques. Faced with this status, teachers must broaden the range of their skills in English by taking part in scientific events, communicating at national or international conferences, interacting in workshops, and writing articles in English. Given the basic training curriculum, which includes an introductory module in modern languages in the Bachelor's and Master's cycles, the hourly volume of which remains limited and insufficient. Therefore, to promote the teaching of the English language in several scientific and technical branches, its adoption as the main language in nursing research has unquestionably become a necessity rather than a choice. Moreover, the acquisition of English language skills is currently one of the essential prerequisites for the growth of nursing research. It is within this framework that aims to examine the cognitive, affective, and behavioral attitudes and language needs in scientific English among HINPHT teachers in Morocco. In order to assess teachers' attitudes and needs in English, and in the absence of national studies in this area, this research was undertaken.

## **METHOD**

This is a quantitative, cross-sectional study of descriptive and analytical nature, which took place in HINPHT in Morocco during the academic year 2021/2022. The participants in this study form a population composed of teachers practicing at the level of HINPHT and divided into 5 categories: A: Researcher Teachers; B: Graduates of Management School; C: Graduates of the 1st cycle; D: Graduates of the 2nd cycle; E: Graduates of the Master cycle.

To ensure a balanced distribution of participation, we opted for randomization. The minimum sample size for obtaining significant results was determined using the Cochran formula (Cochran, 1977).  $n = Z^2 * p * (1-p) / m^2$  with: n: sample size; Z: confidence level, set at a value of 1.96 for a confidence level of 95%; p: estimated proportion of the population that presents the

characteristic (when unknown,  $p = 0.5$  is used which corresponds to the worst case, i.e., the greatest dispersion);  $m$ : margin of error allowed.

In this research, we have adopted this margin at 7%. The said sample size formula gave us  $n = (1.96)^2 \times (0.5) (0.5) / (0.07)^2 = 196$ . Therefore, in order to conduct a sufficiently reliable study with the means at our disposal, we need approximately 200 respondents.

A questionnaire was used to collect the data. It was done using a form adopted from previous studies (Abidin & al. 2012; Vahdany & Gerivani 2016; Pham & Nguyen, 2016). This questionnaire was pre-tested with 10 teachers from different categories. The purpose of this pre-test was to ensure that the participants would be able to answer the questions without difficulty. The questionnaire was distributed via a Google Forms link. All items related to language needs attitudes were classified on a Likert scale (1932) into four options: 1: strongly disagree; 2: disagree; 3: agree; 4: strongly agree. English language skills were ranked according to the four areas of: reading, writing, listening, and speaking; in this sense, we assigned a score ranging from "1" for the most important skill and the score of to "4" for the least important one.

The data were entered and organized with Excel software (version 2015). Statistical analysis was carried out using SPSS 25 (Statistical Package for the Social Sciences). The following indicators expressed the quantitative variables: the arithmetic mean  $\pm$  standard deviation, the median, and finally the coefficient of variation.

Qualitative variables were expressed as a percentage. Different bivariate analyses were performed to determine the degree of affinity between the different modalities of these variables. The Pearson Chi-square ( $\chi^2$ ) test was chosen to analyze their statistical independence. In the case of failure to meet the validation conditions, the Yates correction or Fisher's exact test was performed. The probability level for which the null hypothesis is rejected is set at  $p < 0.05$ .

## FINDINGS AND DISCUSSION

### Findings

A total of 184 of the 200 teachers in our sample responded to the questionnaire, for a participation rate of 92%. This rate increased our margin of error by only 0.22% from the originally predicted 7% to the actual 7.22% found after the study was conducted.

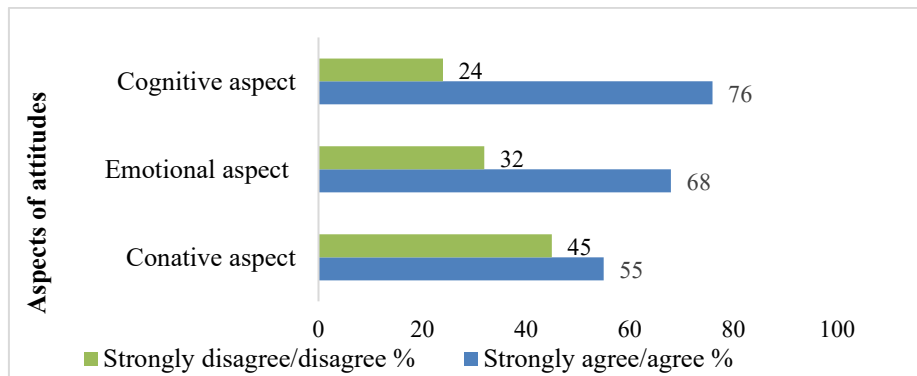
This strong adherence to our study allowed us not to resort to any imputation techniques to manage missing data. In this study, a predominance of the female sex (53%) has emerged with a sex ratio that reached 1.14 ♀/♂. This might be explained by the preponderance of the female gender in the public sector in Morocco, particularly in the health and education sectors.

**Table 1. Distribution of HINPHT teachers by age and profile**

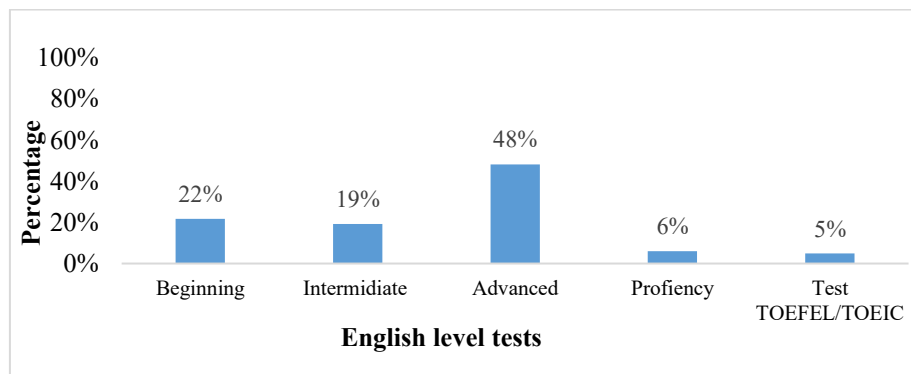
| Category of teacher profile | Effective (Percent) | Average (years) | Standard deviation (years) | Median (years) | Mode (years) | Coefficient of variation |
|-----------------------------|---------------------|-----------------|----------------------------|----------------|--------------|--------------------------|
| A                           | 27 (14.68%)         | 45.8            | 8.19                       | 48             | 50           | 17.8%                    |
| B                           | 6 (3.26 %)          | 52.6            | 5.57                       | 54             | 54           | 10.58%                   |
| C                           | 20 (10.87%)         | 45.8            | 8.64                       | 47.5           | 40           | 18.86%                   |
| D                           | 84 (45.65%)         | 41.6            | 5.74                       | 39.5           | 39           | 13.79%                   |
| E                           | 47 (25.54%)         | 39.7            | 7.19                       | 37             | 35           | 18.11%                   |
| Total                       | 184 (100 %)         | 45.13           | 7.06                       | 45.2           | 39           | 15.82%                   |

Table 1 shows that the average age of the teachers is 45.13 years  $\pm$  7.06 years with a coefficient of variation of 15.82%, which indicates a homogeneity of the age of the participants in the study despite the variety of categories to which they belong.

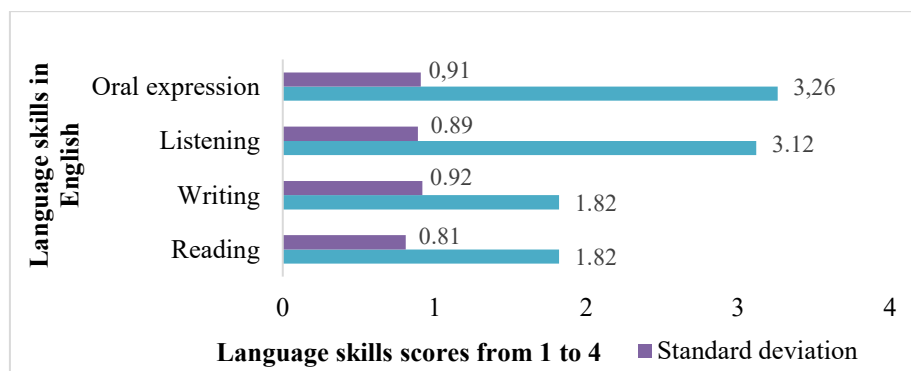
The results of the study showed that 45.11% of respondents passed English level tests. Figure 1 reveals that 48% of these teachers passed the advanced level, while only 5% passed the TOEFL/TOEIC test. The data in Figure 2 show that more than half of the teachers hold positive attitudes towards the English language, with a predominance (76%) of the cognitive aspect of language attitudes. Based on Figure 3, it should be noted that teachers prioritized the language skills of reading and writing as the most important. However, they ranked listening and speaking as less important.



**Figure 1. English level tests obtained by teachers**



**Figure 2. Teachers' attitudes toward the English language**



Note: The score ranging from "1" for the most important skill and the score of to "4" for the least important one.

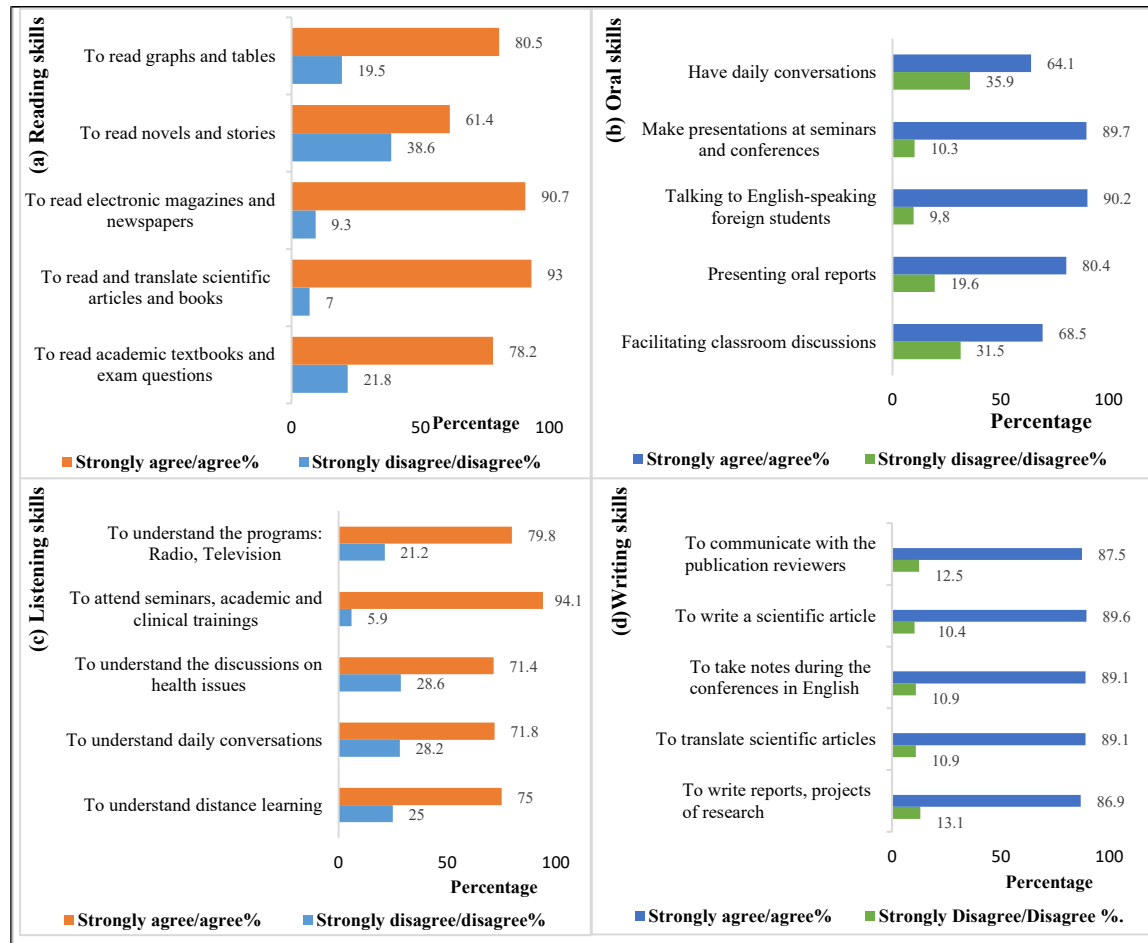
**Figure 3. Ranking of the four English language skills among teachers**

Figure 4 (a) shows that the majority of teachers perceived a greater importance for the role of English reading skills in reading, translating scientific articles and books (93%), followed by having the capacity to read electronic magazines and newspapers in English (90.7%). However, the ability to read novels and stories became less important (61.4%).

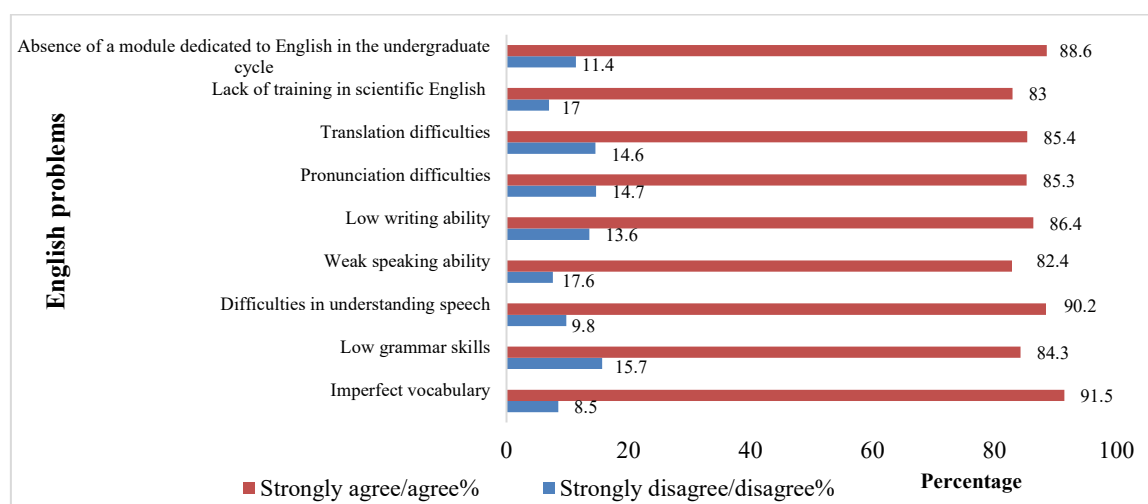
According to Figure 4 (b), most teachers expressed the need for oral skills specifically for communicating with English-speaking foreign students (90.2%), followed by the imperative to make presentations in English at seminars and conferences (89.7%), while having daily conversations in English was the least important concern (64.1%).

Figure 4 (c) shows that almost all the teachers would prefer to improve their listening skills to attend academic and clinical seminars and trainings in English (94.1%), while the need to understand daily conversations is given less importance (71.8%). According to Figure 4 (d), the majority of the teachers expressed their needs in writing skills, especially to write a scientific

article (89.6%), followed by the imperative to take notes during conferences in English (89.1%), as well as translating scientific articles (89.1%).



**Figure 4. English reading (a), speaking (b), listening (c), and writing (d) skills needs of teachers**



**Figure 5. English problems among teachers**

The data in Figure 5 shows that many teachers reported that they have English language problems with imperfect vocabulary (91.5%), difficulties in understanding speech (90.2%), and low writing ability (86.4%).

**Table 2. Association of teachers' attitudes towards English with socio-demographic and academic criteria**

| Criteria             | Chi2 of Pearson | p-value |
|----------------------|-----------------|---------|
| Teacher profile      | 29.21           | <0.015  |
| Sector of belonging  | 24.6            | <0.017  |
| Academic performance | 8.16            | <0.033  |
| Language performance | 16.54           | <0.011  |

By referring to Table 2, the relationship between the profile of the teachers surveyed and language attitudes is very significant ( $p < 0.015$ ). Similarly, the association of teachers' sector of belonging and attitudes has shown a statistically significant difference ( $p < 0.017$ ). To the same extent, the relationship between academic performance and teachers' language attitudes was highly significant ( $p < 0.033$ ). In addition, the relationship between language performance and language attitudes has shown a highly significant dependence ( $p < 0.011$ ).

**Table 3. Association of teachers' English language needs with sociodemographic and academic criteria**

| Associations         | Khi2 of Pearson | p-value |
|----------------------|-----------------|---------|
| Teacher profile      | 34.52           | <0.003  |
| Academic performance | 23.33           | <0.022  |
| Language performance | 29.82           | <0.013  |

According to Table 3, there is a very significant association between teacher profile and teacher language needs ( $p < 0.003$ ). Similarly, the relationship between academic performance through scientific publications and language needs demonstrated a significant difference ( $p < 0.022$ ). In the same sense, there is a very significant link ( $p < 0.013$ ) between language performance and language requirements in English.

## Discussion

The current study aimed to explore and assess teachers' attitudes and real needs in terms of the professional use of English. The study revealed that among the teachers who took an English test, only 2.18% passed the TOEFL/TOEIC test (Test of English as a Foreign Language / Test of English for International Communication). In this regard, Fulcher & Harding (2022) mentioned that a language test is a procedure that assesses language skills in tasks designed to prove a person's ability to use the language. For their part, Halim & Ardiningtyas (2018) reported that TOEFL is the most widely accepted test used in many countries to measure English language skills, particularly in higher education.

Furthermore, over two-thirds of participants with positive attitudes towards the English language expressed the predominance of the cognitive aspect of language attitudes. These findings are consistent with Ahn's (2014) study, which stated that many Korean and non-Korean teachers displayed positive attitudes toward English, wherein the cognitive component of attitude was most significant. Another study conducted by Taşçı (2007) among teachers at Turkey's Faculty of Medicine revealed that academics have a positive perception of English.

Besides, the learning process is a positive change in the individual's personality in terms of emotional, psychomotor, and cognitive domains because when a specific subject has been learned, a new way of thinking and behaving is expected (Abidin & al., 2012).

In another perspective, many teachers gave priority to the language skills of reading and writing, which they considered the most important, while listening and speaking skills were of less importance. These outcomes diverge from those of Parupalli's (2019) study, which mentioned that English is widely used around the world and that speaking is the most important of the four language skills for communicating in different domains. While Barjesteh & Shakeri (2013) suggest that all language skills should receive equal attention from academics who clearly discern the necessity and importance of English. Similarly, Tabatabaei & Mokhtari (2014) confirm that the four basic language skills all require sufficient attention. However, beyond the

differences between skills, it is important to master English at conferences and other international experiences, as this plays an essential role in one's career path (Hartwell, 2013).

The study showed that teachers require English for Academic Purposes (ESP) more than General and Communication English. These results converge with those of Hyland (2022), who reported that ESP has been widely adopted in many countries to more adequately fulfill the communication demands of English learners who are increasingly required to read and often write their assignments in English. In addition, the study revealed that teachers have a greater need for reading skills, translation of scientific articles, and references. These findings concur with those of Karimnia (2013), who asserts that Iranian teacher-researchers need English to be able to read articles related to research fields. Regarding writing skills, the study showed that many teachers expressed their necessity in this area, particularly for writing a scientific article. These results converge with those of Akbari (2016), who confirms the importance of developing English writing skills to write and submit articles in English and make contacts with professionals in the same field. Further, the professional development of academic nurses requires proficiency in written English (Terry, Carr & Williams, 2013).

At the same time, language and learning require concerns about how learners use language effectively, why they study language, and what language problems they most often face (Long & Doughty, 2009). The main English language challenges reported by many teachers included imperfect vocabulary, difficulties in understanding speech, weak writing skills, translation, and pronunciation difficulties. In this regard, Akdemir (2021) mentioned that nursing educators wishing to publish the results of their studies lack support for scientific writing in English. In this way, nursing teachers' language problems are linked to the need for additional support, coaching, and advice from language experts (Garone et al., 2020). The survey results showed a highly significant relationship ( $p < 0.015$ ) between participant profiles and language attitudes. This difference in teachers' attitudes could be due to the extent of necessity for English. More specifically, teacher-researchers and PhD teachers might have a greater requirement for English compared to other profiles. According to Bouziane, & Saoudi. (2021), English is essential to guarantee scientists and academics access to documents written or published in English.

Similarly, the association of teachers' sector of belonging and attitudes has shown a statistically significant difference ( $p < 0.017$ ). To the same extent, the relationship between academic performance and teachers' language attitudes was highly significant ( $p < 0.033$ ). In addition, the relationship between language performance and language attitudes has shown a highly significant dependence ( $p < 0.011$ ). The results also showed a significant relationship between English language needs and teacher profile, which could be attributed to the need for English reading skills, particularly for PhD teachers. Whereas, in her study, Ma (2021) reported that research writing is an essential component of doctoral studies. For teacher-researchers, meanwhile, more writing skills are essential, especially for those who review articles (Reviewers).

Many research teachers are now striving to enhance their English skills, especially when it comes to writing articles to meet the growing requirements for international publications (Hartono & Arjanggal, 2020). Similarly, the relationship between academic performance through scientific publications and linguistic requirements demonstrated a significant difference ( $p < 0.022$ ). In the same vein, there is a highly significant link ( $p < 0.013$ ) between linguistic performance and linguistic requisites in English.

## CONCLUSION

The place that English holds in research regarding the field of nursing sciences and health techniques should no longer be disregarded, hence the need to remedy the shortcomings and obstacles to the use and practice of scientific English among teachers. The results obtained revealed that the majority of respondents have positive attitudes towards scientific English, particularly in cognitive aspects. This leads us to conclude that teachers are aware of the importance of English, especially for academic and scientific purposes. This awareness is a key element for efficient practice of this language in the field of research. Overall, the results of the present study could propel the design and implementation of a scientific English module dedicated

to pre-service training at the Bachelor's, Master's, and Doctoral levels. A complementary hybrid-training program in scientific English for teachers, adapted to their language prerequisites and responding to the new training requirements in the context of HINPHT in Morocco, might be an appropriate action.

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