


Original article

## Medical science students' perceptions of reading and writing



**Percepción de estudiantes de ciencias médicas sobre lectura y escritura**

**Percepções dos estudantes de ciências médicas sobre leitura e escrita**

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### ABSTRACT

The teaching and learning of reading and writing in medical universities responds to the need to guide students in their interaction with information, in order to generate new knowledge. The objective of this article is to present the results of an exploration of the perceptions and experiences of medical science students regarding reading and writing practices in the university context. A non-experimental, exploratory, quantitative study was conducted through the application of an online questionnaire to a total of 137 Nursing, Stomatology, Medicine, and Health Technology students from 13 Cuban provinces and the special municipality of Isla de la Juventud. Information was sought on the following aspects: the relationship between learning, reading, and writing; the influence of reading and writing errors on grades; actions and operations performed during reading and writing; the most frequently used sources of information in their study activities; the types of texts they write most frequently, and the characteristics of the reading and writing practices in their environment. The main foundations of the study come from research on academic literacy. The data was exported and processed using Microsoft Excel. The results are expressed as averages and percentages. According to the perceptions of the students surveyed, there is dissatisfaction and shortcomings

regarding reading and writing practices in the context of Cuban medical education, particularly in relation to the epistemic function.

**Keywords:** learning; writing; medical training; reading; perception.

## RESUMEN

La enseñanza-aprendizaje de la lectura y la escritura en la universidad médica responde a la necesidad de orientar al estudiante en su interacción con la información, para la generación de nuevos conocimientos. El objetivo del artículo es presentar los resultados de la exploración de percepciones y experiencias de estudiantes de ciencias médicas sobre las prácticas de lectura y escritura en el contexto universitario. Se realizó un estudio cuantitativo no experimental, exploratorio, mediante la aplicación de un cuestionario en línea, a un total de 137 estudiantes de Enfermería, Estomatología, Medicina y Tecnología de la salud, procedentes de 13 provincias cubanas y el municipio especial Isla de la Juventud. Se buscó información sobre los siguientes aspectos: relación entre aprendizaje, lectura y escritura; influencia de los errores de lectura y escritura en las calificaciones; acciones y operaciones que realizan durante la lectura y la escritura; fuentes de información más utilizadas en la actividad de estudio; tipos de texto que escriben con mayor frecuencia y características de las prácticas de lectura y escritura de su entorno. Los principales fundamentos del estudio provienen de las investigaciones sobre alfabetización académica. La información fue exportada y procesada mediante Microsoft Excel. Los resultados se expresan en promedio y porcentaje. Según las percepciones de los estudiantes encuestados hay insatisfacciones y carencias respecto a las prácticas de lectura y escritura en el contexto de la educación médica cubana, sobre todo en lo relacionado con la función epistémica.

**Palabras clave:** aprendizaje; escritura; formación médica; lectura; percepción.

## RESUMO

O ensino-aprendizagem de leitura e escrita na universidade de medicina responde à necessidade de orientar os alunos em sua interação com a informação para gerar novos conhecimentos. O objetivo do artigo é apresentar os resultados da exploração das percepções e experiências dos estudantes de ciências médicas sobre as práticas de leitura e escrita no contexto universitário. Foi realizado um

estudo quantitativo, exploratório e não experimental, por meio da aplicação de um questionário on-line a um total de 137 estudantes de Enfermagem, Estomatologia, Medicina e Tecnologia da Saúde de 13 províncias cubanas e do município especial de Isla de la Juventud. Procurou-se obter informações sobre os seguintes aspectos: a relação entre aprendizagem, leitura e escrita; a influência dos erros de leitura e escrita nas notas; as ações e operações que realizam durante a leitura e a escrita; as fontes de informação mais utilizadas na atividade de estudo; os tipos de texto que escrevem com mais frequência e as características das práticas de leitura e escrita em seu ambiente. Os principais fundamentos do estudo vêm de pesquisas sobre letramento acadêmico. Os dados foram exportados e processados usando o Microsoft Excel. Os resultados são expressos em média e porcentagem. De acordo com as percepções dos alunos pesquisados, há insatisfações e deficiências em relação às práticas de leitura e escrita no contexto da educação médica cubana, especialmente em relação à função epistêmica.

**Palavras-chave:** aprendizagem; escrita; educação médica; leitura; percepção.

## INTRODUCTION

The dynamics of contemporary scientific and technological development, the increase in information, as well as the specific economic and socio-historical conditions of Cuba, oblige university teachers to constantly verify their teaching strategy: Teaching how to locate and evaluate reliable information, circumvent the country's access constraints, make maximum use of available technological resources; and to ensure that differences in the availability of material and financial resources do not affect equal learning opportunities for students, to cite a few examples.

Current reading and writing practices are conditioned by the predominance of digital sources, online collaboration, the benefits and risks of artificial intelligence and the attractiveness of multimedia communication on social networks, among other factors that directly affect the fulfillment of the social mandate of medical education teachers. From this, the imperative is derived, the systematic study, continuous critical reflection and readjustment of didactic strategies, which allow, according to Espinosa-Brito *et al.* (2022), to change with change.

The training of healthcare professionals in Cuba is based on the principle of workplace education. This principle assumes the development of an active and developing teaching-learning process, from

different healthcare settings, for the active appropriation of knowledge, the development of autonomy, and the construction of meanings about learning content (Castellanos-Simons *et al.*, 2005). However, in the current educational context, this conception of the student as an active subject of the process reveals limitations and shortcomings of interest for research in the field of medical education (Cuéllar-Álvarez & García-Martínez, 2022).

The meaning of the teaching-learning of writing in the medical university responds to the need to guide the student in their interaction with information, for the generation of new knowledge. It is not an end in itself: it is inherent to the teaching content of the various disciplines, because the content, as a category of the teaching-learning process, includes the knowledge, skills and values necessary for cognitive activity. However, the challenge of "reading and writing according to the expected modes in each subject, is understood by institutions and teachers as difficulties or deficits and not as emerging from the lack of familiarity with these new practices, specific to the disciplines" (Carlino, 2017, p. 116).

Given the importance of language in the production and distribution of knowledge and in general in the discursive practices of the university, reading and writing attract the interest of pedagogical research.

The research background on the perception (and self-perception) of students, regarding reading and writing (Roldán & Zabaleta, 2016; Morchio & Difabio, 2019; Tarullo & Martino, 2019; Alarcón-Neve & García-Mejía, 2022), reveal the importance of this type of study. The ability to identify students' perceptions of this teaching content enriches their performance as active participants in the teaching-learning process.

Perceptions come from recognition of everyday experiences, which are organized and given meaning in social interaction in historically specific contexts. They are part of the knowledge process and it is allowed to distinguish properties and meanings for making judgments (Vargas-Melgarejo, 1994).

Forming a general assessment of reading and writing from the perspective of university students training as health professionals contributes to a deeper understanding of educational reality. The research focuses on academic reading and writing, which are defined as such, insofar as they allow the construction and dissemination of disciplinary and scientific knowledge (Coronado-López, 2021).

The objective is to explore the perceptions and experiences of medical science students regarding reading and writing practices in the university context.

## MATERIALS AND METHODS

This study is an initial quantitative, non-experimental, exploratory approach seeking a comprehensive understanding of students' perceptions and experiences with reading and writing in the context of medical education. It is considered complementary to the contextual diagnosis of an ongoing investigation into the initial and continuing education of healthcare professionals in Ciego de Ávila in scientific communication.

*Google form*, the link of which was distributed via *WhatsApp*, was administered to participants in a national online student scientific workshop. The data collection period ran from May 10 to July 25, 2024. A total of 162 Cuban university students answered anonymously; those studying courses not related to the health field were excluded (25).

The study population consisted of 137 students from: Nursing (3), Dentistry (14), Medicine (111) and Health Technology (9). Table 1 shows the composition by age group and academic years (Table 1).

**Table 1.** Students by age group and academic year

	Age groups				Academic year					
	up to 19	from 20 to 22	from 23 to 25	more than 25	1	2	3	4	5	6
Total	34	78	21	4	25	46	24	22	17	3
%	24.8	56.9	15.3	3	18.2	33.6	17.5	16	12.4	2.1

The representation by province was as follows: Pinar del Río (15, 10.9%), Havana (27, 19.7%), Artemisa (6, 4.4%), Mayabeque (6, 4.4%), Matanzas (5, 3.6%), Villa Clara (10, 7.3%), Ciego de Ávila (34, 24.8%), Camagüey (5, 3.6%), Las Tunas (1, 0.7%), Granma (2, 1.5%), Holguín (8, 5.8%), Santiago de Cuba (8, 5.8%), Guantánamo (9, 6.6%), Isla de la Juventud Municipality (1, 0.7%). Students from the provinces of Cienfuegos and Sancti Spíritus did not participate.

The questionnaire was structured with an informative section (degree, age, academic year, and province) and eight questions (six screening questions and two ranking questions); in addition, one open-ended, non-mandatory question. The questions were not intended to challenge students' development of their reading and writing skills; therefore, the responses are not interpreted as self-assessments, but rather as students' perceptions of what is happening in their environment, based on the following aspects:

- Relationship between learning, reading and writing
- Influence of reading and writing errors on grades
- Actions and operations performed during reading and writing
- Most commonly used sources of information in the study activity
- Types of text they write most frequently
- Characteristics of reading and writing practices in the environment

The information was exported and processed using Microsoft Excel. Regarding perceptions of the relationship between learning, reading, and writing, four propositions and a scale with different values per category were offered: completely (5), moderately (4), slightly (3), exceptionally (2), and no relationship (1). The total score for each proposition was averaged. The remaining results are expressed as percentages.

## RESULTS

Once the information was synthesized, results were revealed that allowed us to understand the perceptions and experiences of medical science students regarding reading and writing practices in the university context.

According to Table 2, students clearly perceived the relationship between learning success and reading and writing practices; however, their perception of the influence of reading and writing errors on grades was very different. Their assessments seem to indicate that grades are not affected by these errors. This highlights the need for research into the connotation teachers give to this learning content in the discipline programs they develop (Table 2).

**Table 2.** Relationship between learning, reading and writing

Perception	Scale/Value	Punctuation	Average
To what extent learning success is related to your reading skills	Totally (5)	628	4.5
	Moderately (4)		
	Discreetly (3)		
	Exceptionally (2)		
	No relationship (1)		
To what extent learning success is related to your writing skills	Totally (5)	589	4.3
	Moderately (4)		
	Discreetly (3)		
	Exceptionally (2)		
	No relationship (1)		
Influence of reading errors on grades	Always (5)	301	2.2
	Almost always (4)		
	Sometimes (3)		
	Rarely (2)		
	Never (1)		
Influence of writing errors on grades	Always (5)	292	2.1
	Almost always (4)		
	Sometimes (3)		
	Rarely (2)		
	Never (1)		

Regarding the actions and operations performed most frequently during reading and writing, they selected those most closely linked to behavior (Table 3) and those formulated as operations inherent to critical thinking (Table 4). This distinction was due more to providing an opportunity to confirm responses than to differences in the content stated.

They predominantly selected those actions and operations that allowed them to synthesize and comprehend content (as well as memorize). Actions related to in-depth text study were performed less frequently, according to the students (Table 3).

**Table 3.** Actions and operations most frequently performed during reading and writing

Actions and operations	%
Selection of important ideas	88.3
Reflection on the importance of content for practice	88.3
Making simple notes and diagrams	87.6
Memorizing information	86.1
Formulation of questions and doubts	75.9
Self-review of the prepared text	74.5
Critical evaluation of the ideas in the text	66.4
Consultation of specialized dictionaries and glossaries	64.2
Preparation of content sheets	55.5
Comparison of ideas, authors and sources	54.7
Preparation of the writing plan for the result	51

This is consistent with the perception surrounding operations, which included some critical thinking guidelines. Those they reported performing least frequently were considered the most conducive to developing this approach (Table 4). No significant differences were found when comparing the responses of first- and second-year students with those of students neither from other years, nor in the analysis by major.

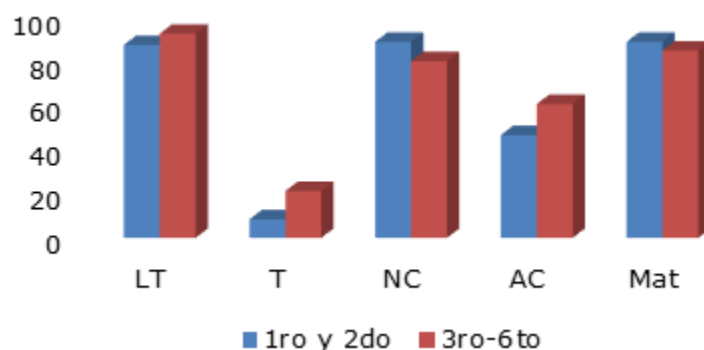


**Table 4.** Actions and operations most frequently performed during reading and writing

Actions and operations	%
Memorize the information	83.2
Correctly identify the central concepts	80.3
Memorize the meaning of concepts	78.1
Determine the most important arguments and their relationship to the conclusions	73.7
Interpret and rework ideas	72.3
Relate what you read to your experience and social reality	71.5
Develop, exemplify and interrelate the central concepts	70.8
Check and evaluate the results of reading and writing	70.8
Understand what is expected of you when reading the text	67.2
Ask questions about what you are studying	63.5
Questioning information and experience	46

Regarding the sources of information most frequently used in study activities (Figure 1), the perception of the students surveyed indicated the undeniable predominance of less complex sources; the high frequency of use of teacher-prepared materials was considered significant.

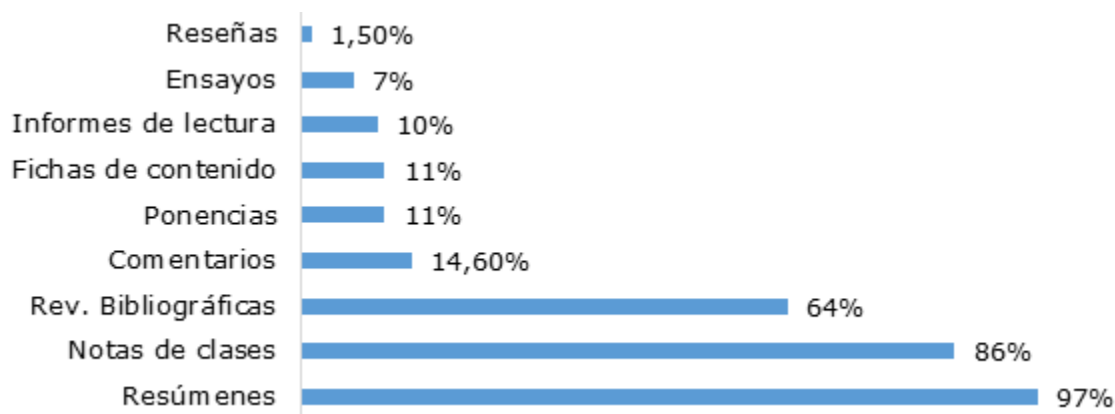
Sources such as scientific articles and theses, which are more demanding to read and understand and contribute to familiarization with scientific thinking, showed a significantly lower frequency of use, with no significant differences between academic years (Figure 1).



**Figure 1.** Sources of information most used in the study activity

Legend: LT (textbook), T (master's or doctoral thesis), NC (class notes), AC (scientific articles), Mat (materials prepared by the professor)

The same happens with the frequency of writing different types of texts: the most complex ones are written less frequently (Figure 2).



**Figure 2.** Types of text they write most frequently

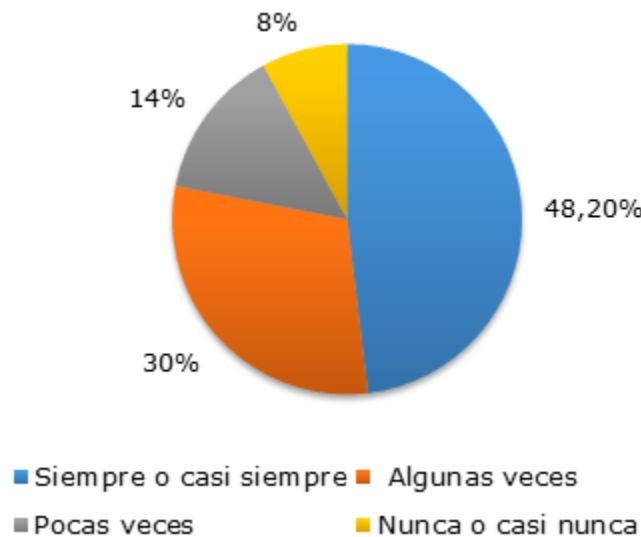
Consistent with the perceptions presented in tables 3 and 4, the results shown in Table 5 show that reading for memorization purposes and reproductive writing were considered by respondents to be among the most frequent practices. Students explicitly indicated that they have difficulty understanding scientific texts, which corresponds to their insufficient reading experience with this type of text (Table 5).

**Table 5.** Characteristics of the reading and writing practices of the environment

Perception	Students	%
They consider it important to memorize the contents of the reading	111	81
When writing, they tend to reproduce textually what they read.	101	73.7
They need more knowledge about academic writing	85	62
They have difficulty understanding scientific texts	83	60.5
They need more guidance from teachers for reading	65	47.4
They know how to support their own criteria	42	30.6
They receive the necessary instructions about the type of text they should construct	38	27.7
They can form value judgments about what they read	37	27
They are required to write different types of academic texts	26	19
They know their writing difficulties	24	17.5
They can differentiate the characteristics of academic texts	24	17.5

The least recognized characteristics could indicate a strategy to encourage active student participation in learning (receiving necessary instructions about the type of text they should construct, forming value judgments about what they read, and being aware of their writing difficulties), traits that would favor conscious and meaningful learning. This highlights the need to delve deeper into teachers' teaching strategies regarding reading and writing practices as part of the teaching-learning process.

Among the characteristics of reading and writing practices recognized by students was the textual transcription of information, known in practice as "copy and paste" (Figure 3). This experience, beyond its ethical connotation, highlights the nature of the didactic conception of the teaching-learning process, aimed at developing thinking and generating new knowledge through interaction with information.



**Figure 3.** Considerations regarding the use of "copy and paste"

## DISCUSSION

The results of this study were based on student statements; their responses expressed their perspective on reading and writing practices in their environment. They are somewhat subjective, but they still have referential value because "they refer to the organization, integration, recognition, and interpretation of that information" (Sánchez-Márquez, 2019, p. 9); furthermore, because "studying what students themselves express in relation to different aspects of academic writing is one of the pillars to examine when approaching this complex topic" (Tarullo & Martino, 2019, p. 109).

The significance of the study for the knowledge of what happens in the context of the training of health professionals, in terms of reading and writing practices, is appreciable, given that the perception:

It involves an activity in which information is input and in which, from a subjective perspective, elements that are not merely sensitive but also have particular meanings for the perceiver are perceived, which are configured into a totality that, therefore, is not a copy of the perceived world. As a cognitive activity, it involves abstracting -from the information that comes from experience- what is "relevant" to oneself, according to a logic and an assessment (Morchio & Difabio, 2019, p. 36).

There are numerous studies on perception related to reading and writing, primarily in students as writers. González and Conde (2022) consider reading to be an integral part of university education: the reading of academic texts (produced or used in an academic institution as part of the student training process) and scientific texts (written based on research results in which new knowledge is communicated, generated within and essentially directed at a scientific community).

If it is shared that reading at the university is a form of appropriation of knowledge, of insertion in the way of communicating and doing in a scientific community and a way to generate new theoretical and practical-methodological knowledge (González & Conde, 2022), the need to assume it in an essential way is understood, in the conception of each component of the teaching-learning process of the different disciplines, because "the academic text needs a specialized understanding" (Coronado-López, 2021, p. 11).

The predominance of reading actions and operations of a pragmatic nature (for the apprehension of data or for the transmission of information, for example), manifested in the perception of the students surveyed, explains that "university students write, but not guided by cognitive processes that allow them to think critically, but rather they reproduce the ideas of the original texts" (Coronado-López, 2021, p. 7).

However, it is fair to consider that one of the most frequent assignments that university students receive is, as González (2020) states, the acquisition of knowledge (through its literal location in the text, or through its inference), a type of reading that must be complemented with others that require the confrontation of points of view, leading to critical assessment and the assumption or elaboration of a certain perspective.

When asking for the study of the influence of reading and writing errors on grades sought to understand student perceptions regarding their consideration of these errors as part of the teaching content of the disciplines. When the students surveyed stated that the influence of writing errors on grades is considerably lower compared to the importance they see in their learning, they warned that academic writing "is often part of the hidden curriculum, that is, it is not an explicit object of teaching and learning" (Navarro 2021, citing Schlepppegrell, 2004, p. 50).

In this sense, it is understood that focusing interest on the rhetorical function and filling a student's text with "form" corrections is as inconvenient as not correcting the "form" and focusing on content learning, because "the importance of the specific rhetorical aspects of writing in its field is being

forgotten" (Navarro, 2021, p. 15-16). It is assumed, with this author, that students' written production reveals how they learn disciplinary content, the ways of internalizing and practicing the forms of communication specific to each disciplinary space; it is a way of accrediting learning, problematizing concepts and expressing their own perspectives.

No similar studies were found in the context of medical education in Cuba. This research provided preliminary evidence that requires attention: critical evaluation of the ideas in the text, comparison of ideas, authors, and sources (Table 3), and questioning information and experience during reading (Table 4) were actions and operations selected by a significantly small percentage of respondents. This is also confirmed by the low percentage who stated they knew how to support their own criteria and form value judgments about what they read (Table 5).

The above was interpreted as a limitation in critical reading practices and requires didactic attention, not as a remedial intervention, but as an intrinsic conception for learning the different disciplines of the careers.

The results revealed the relevance of transforming teaching strategies regarding reading and writing in the training process of the health professional, so that they transcend the transmission of knowledge and are capitalized as epistemic tools and involve thinking and rethinking what one wants to say, planning the contents, reviewing them, formulating them and reformulating them (Boillos-Pereira, 2020).

The survey provided evidence about the opinions of Cuban students from different provinces and medical science programs. Therefore, it is considered effective as an exploratory study, complementary to the previously reported research.

The surveyed students expressed dissatisfaction and shortcomings regarding reading and writing practices in the context of Cuban medical education. This affects the development of the epistemic function of reading and writing in the learning process, a function through which it is possible to review, reflect, internalize, and transform disciplinary content.

This study should be complemented by an investigation of teachers' perceptions and a study of students' academic output. Its main limitations include the diversity of thematic concepts explored and the excessive number of response options offered in the survey.

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### **Conflict of interest**

Authors declare no conflict of interests.

### **Authors' contribution**

The authors participated in the design and writing of the article, in the search and analysis of the information contained in the consulted bibliography.



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