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ORIGINAL

Performance of the virtual tutor in the comprehensive medicine discipline at the latin american school of medicine

Desempeño del tutor virtual en la disciplina Medicina general en la Escuela Latinoamericana de Medicina

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ABSTRACT

Introduction: there is growing interest in the study of tutoring work and the relevance of virtual tutor performance.
Objective: to characterize the initial state of virtual tutor performance in the General Medicine discipline at the Latin American School of Medicine.
Method: an observational study was conducted during the years 2020-2022. It included 31 professors from the Comprehensive General Medicine Department. Theoretical inquiries were conducted through documentary analysis, logical history, and systematization. Empirical inquiries included document review, surveys, and performance observation.
Results: the diagnosis confirmed a low level of virtual tutor performance. The availability of the institution's Virtual Campus online was recognized as a potential benefit, and limitations in the virtual tutor's mastery of functions were identified as problems.
Conclusions: the study allowed for the characterization of the initial state of virtual tutor performance in the General Medicine discipline, the results of which revealed a low level of performance. The most significant aspect of the research was the recognition of potential and identified problems, serving as a starting point for the rationale, organization, and evaluation of a professionalization program.

Keywords: Virtual Tutor; Tutoring; Distance Education; General Medicine.

RESUMEN

Introducción: es creciente el interés en el estudio sobre la labor de tutoría y la pertinencia del desempeño del tutor virtual.
Objetivo: caracterizar el estado inicial del desempeño del tutor virtual de la disciplina Medicina general de la Escuela Latinoamericana de Medicina.
Método: se realizó un estudio observacional durante los años 2020-2022. Abarcó un universo de 31 profesores del departamento Medicina General Integral. Se realizaron indagaciones teóricas mediante el análisis documental, el histórico lógico y la sistematización. Entre las indagaciones empíricas se utilizaron revisión documental, la encuesta y la observación al desempeño.

Resultados: el diagnóstico constató un bajo nivel de desempeño del tutor virtual. Se reconoció como potencialidad la disponibilidad desde Internet del Campus virtual de la institución, se identificaron como problemas las limitaciones en el dominio de las funciones del tutor virtual.
Conclusiones: el estudio permitió la caracterización del estado inicial del desempeño del tutor virtual en la disciplina Medicina general, cuyo resultado reveló un bajo nivel de desempeño. Lo más relevante de la investigación fue el reconocimiento de potencialidades y los problemas identificados, como punto de partida para la fundamentación, organización y evaluación de un programa de profesionalización.

Palabras clave: Tutor Virtual; Tutoría; Educación a Distancia; Medicina General.

INTRODUCTION

The research was conducted between 2020 and 2022 at the Latin American School of Medicine in Havana. An observational and descriptive study was carried out, considering a universe of 31 active teachers from the Department of Comprehensive General Medicine.[1,2,3,4,5,6,7]

Theoretical methods were applied, such as documentary analysis, through the analysis of relevant literature for the research and the determination of the system of concepts, categories, and significant links; historical logic, through the study of the performance process of the virtual tutor, from its emergence to the present day; as well as systematization for the identification of the functions of tutoring and its trends, and the determination of the variable, its dimensions, and indicators, through the parameterization process of the Technology for Determining Potentialities and Problems of Advanced Education Theory, until obtaining an inventory of potentialities and problems.[8,10]

To validate the correspondence between the variable, its dimensions, and indicators, thirteen specialists were consulted using a questionnaire designed for this purpose. The specialists, who were not included in the universe, met the following requirements: they held the teaching rank of assistant or full professor, had a PhD or master's degree, had ten or more years of professional experience, and had experience in network training as tutors.

The empirical investigation included document review, surveys, and performance observation. Using a document review guide, the curriculum for the medical degree program, the general medicine program, twelve of the methodological guidelines for the courses, and 31 faculty evaluation reports were reviewed to identify how technology was integrated into the teaching process of the courses and the performance of the virtual tutor, respectively. The survey, which was administered using a questionnaire, included variables such as gender, age, teacher staffing, professional profile, teaching category, and academic level. An observation guide was used to observe performance, both of which were designed by the researchers.

The performance level of the virtual tutor was evaluated for each indicator obtained, considering High, Medium, or Low (table 1).

Table 1. Performance levels of the virtual tutor in the discipline of General Medicine

High performance level
Registered in the virtual classroom, creates and exchanges educational content online, and encourages student participation. Consciously fulfills the functions of the virtual tutor in conducting the training process Maintains a daily presence through different means of communication, assertively and empathetically. Always or often participates in managing and reviewing the level of updating and relevance of content, resources, and activities, as well as in adapting the course to the progress and needs of students
Average performance level
Is registered in the virtual classroom, creates educational content, shares content on the network, but does not encourage student participation. Sometimes maintains a presence through different media, is assertive and empathetic in communication. Sometimes participates in managing and reviewing the level of updating and relevance of content, resources, and activities, but limits their participation in adapting the course to the progress and needs of students.
Low performance level
Does not create educational content, does not share content online, and does not encourage student participation. Rarely or never maintains a presence through different means of communication, is not assertive, and does not communicate empathetically. Rarely or never participates in managing and reviewing the level of updating and relevance of content, resources, and activities, or in adapting the course to the progress and needs of students.

The methodological triangulation procedure was applied to the results to verify the performance level of the virtual tutor in the discipline of General Medicine. Statistical methods, such as percentage analysis, were used. The free statistical analysis application GNU/PSPP was used to process the data obtained.

The research was conducted in accordance with ethical standards, taking into account international codes of research ethics such as the Nuremberg Code and the Declaration of Helsinki. Approval was obtained from the Ethics Committee of the Institution's Scientific Council and verbal consent was obtained from the participants, who were informed about the research and its benefits. Confidentiality was guaranteed and the information was used for scientific purposes only. The methodological triangulation procedure was applied to the results to verify the performance level of the virtual tutor in the discipline of general medicine. Statistical methods, such as percentage analysis, were used. The free statistical analysis application GNU/PSPP was used to process the data obtained.

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RESULTS

Table 2. Variable, its dimensions, and indicators

Performance of the virtual tutor in the discipline of general medicine.	
A personalized and conscious pedagogical process that facilitates the work of the virtual tutor through adequate communication and mastery of the content of the discipline and the role played by teachers from a political-ideological, professional-pedagogical, and technical-administrative perspective in conducting the pedagogical process mediated by technologies at the Latin American School of Medicine.	
Dimensions	Indicators
Political – Ideological	Level of mastery of computerization strategies in the health sector and the institution
	Degree of use of technology in the development of virtual tutoring
	Level of attitudes demonstrated towards the integration of technology and the development of virtual tutoring work
	Frequency of application of ethical principles in the resolution of conflicts identified in the development of tutoring work.
Professional-pedagogical	Level of mastery of the content of the discipline of general medicine
	Level of determination to perform the duties of a virtual tutor
	Level of updating of content related to online learning
	Level of participation in activities for improvement and/or scientific-methodological activities
	Frequency of publication of scientific articles related to online training
Social - communicative	Level of communication established during virtual tutoring
	Level of assertiveness in communication with students and other teaching staff
	Level of empathy in relationships with students and other teaching staff
	Level of communication in strategies for collaborative work
Technical - administrative	Level of participation in quality control of the training process
	Level of participation in the management of resources and learning and assessment activities
	Level of mastery and use of technological tools to support student learning
	Level of use of the potential of information and communication technologies

From parameterization to the identification of potentialities and problems. The application of the Advanced Education Theory's Technology for Determining Potentialities and Problems facilitated the obtaining of the results that will be described below. Process of determining the variable. The study allowed us to determine the variable from which four dimensions are derived: political-ideological, professional-pedagogical, social-communicative, and technical-administrative, as well as 17 indicators (table 2). Analysis of the results of the consultation with specialists revealed that 13 (100 %) of the respondents considered the level of correspondence between the variable, its dimensions, and indicators to be high.

Results of the document review

The curriculum for the E program of the medical degree[19] sets out the main skills to be developed in the discipline of general medicine, which are grouped into functions such as:

- Comprehensive medical care: promoting the use of information and communication technologies and the development of lifelong self-learning skills.
- Research: encourage participation in medical research and the publication of scientific articles.
- Teaching and education: promoting self-improvement.

The value system of this discipline promotes solidarity, responsibility, hard work, and honesty, considering their relevance in educational contexts favored by technological integration.

With regard to the design and implementation of curricular strategies, the following is established:

- The integration of Information and Communication Technologies
- The development of scientific research in the field of health
- Pedagogical training with the application of technologies in teaching tasks.
- The use of available resources to implement teaching methods.

The above underpins the development of the actions involved in the tutorial function, as well as the need to make better use of the potential of virtual tutors in the pedagogical process of the subjects in the discipline of General Medicine.

The aforementioned educational institution offers courses in Introduction to Comprehensive General Medicine, Health Promotion, Health Prevention, and Introduction to Clinical Practice, as well as its own programs and elective courses. A review of the methodological guidelines revealed that only the use of slide presentations is established as a teaching method for classroom instruction, with no suggestions or proposals for the development of strategies aimed at taking advantage of technological resources. Only in the methodological guidelines for two courses and one elective course is the use of the virtual classroom evident as a support for classroom teaching.

The analysis of the faculty evaluation reports reveals the low performance of the virtual tutor in indicators 2,3, 2,4, and 2,5, with 30 (96,8 %) teachers in each case. Indicators 4,3 and 4,4 showed similar behavior, with 30 (96,8 %) and 29 (93,7 %) teachers, respectively, affecting this result, as shown in figure 1.

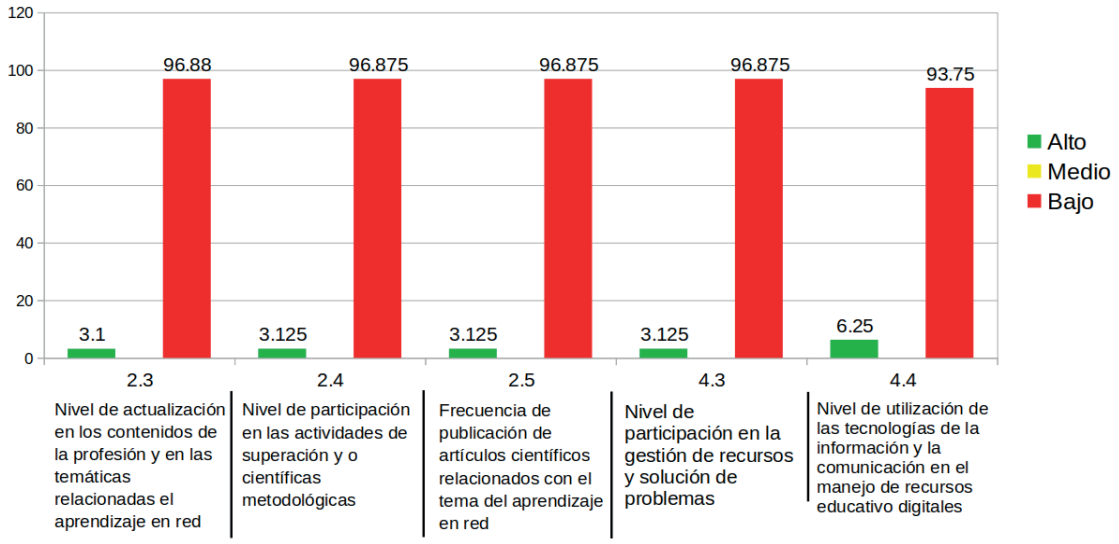

Figure 1. Level of performance of the virtual tutor according to the document review

Results of the virtual tutor survey. Of the total number of respondents, 20 (64,5 %) were female teachers, and the 50-59 age group was the largest, comprising 19 (61,2 %) teachers. Twenty (64,5 %) teachers identified themselves as permanent staff members, 6 (19,3 %) classified themselves as part-time teachers, and 5 (16,1 %) were temporary staff members. Of the total, 28 (90,3 %) teachers were Doctors of Medicine and 26 (83,87 %) held a Master's degree in Science. The most common teaching category was Assistant Professor, with 18 (55,0 %) teachers identified, while another 11 (35,4 %) teachers held the category of Assistant Professor and 1 (3,2 %) teacher held the category of Full Professor, most with teaching experience between 11 and 15 years, 27 (90,32 %) teachers.

The questionnaire revealed the self-assessment of the virtual tutor's performance level, which was considered low by the majority of the teachers surveyed, as shown in figure 2. The most affected indicators were 4,3,

which revealed a low level of performance in 29 (93,5 %) teachers, indicator 4,4, which involved 27 (87,1 %) teachers, and indicator 4,2, which showed a low level of performance in 26 (83,9 %) teachers, belonging to the technical-administrative dimension.

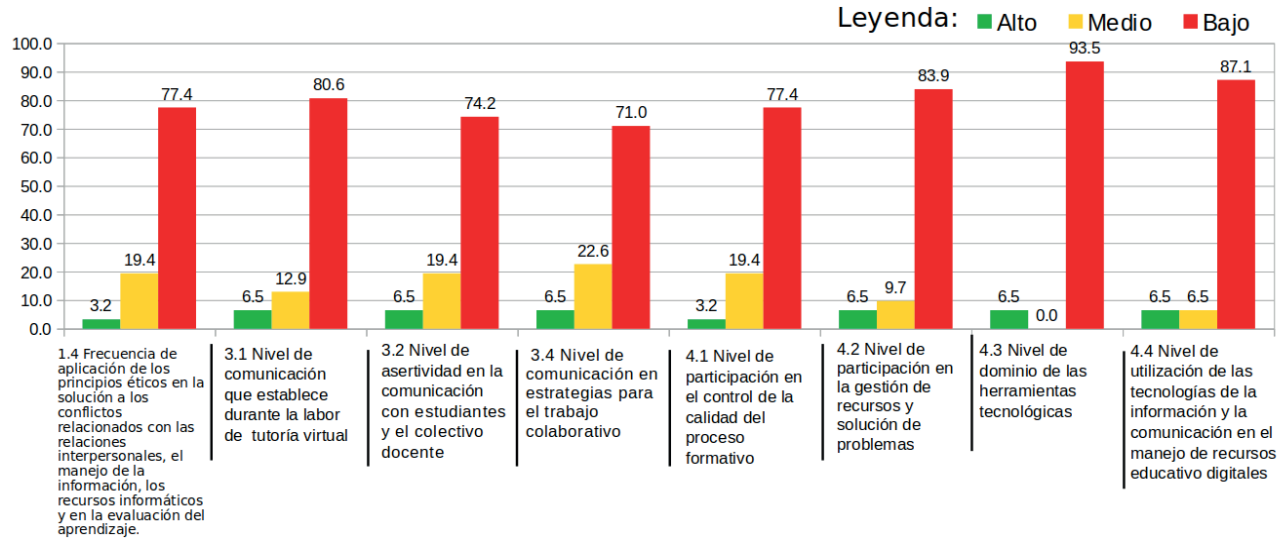

Figure 2. Self-assessment of the performance level of the virtual tutor

Performance observation results. The results of the initial performance observation of the virtual tutor in the discipline of General Medicine reveal that indicator 1,3 of the political-ideological dimension, indicator 2,2 of the professional-pedagogical dimension, and indicator 3,4 of the social-communicative dimension showed the lowest level of performance, involving 29 (93,5 %) teachers of the total number observed. The rest of the indicators also showed a low level of performance, involving 28 (90,3 %) of the total number of subjects observed, as shown in figure 3.

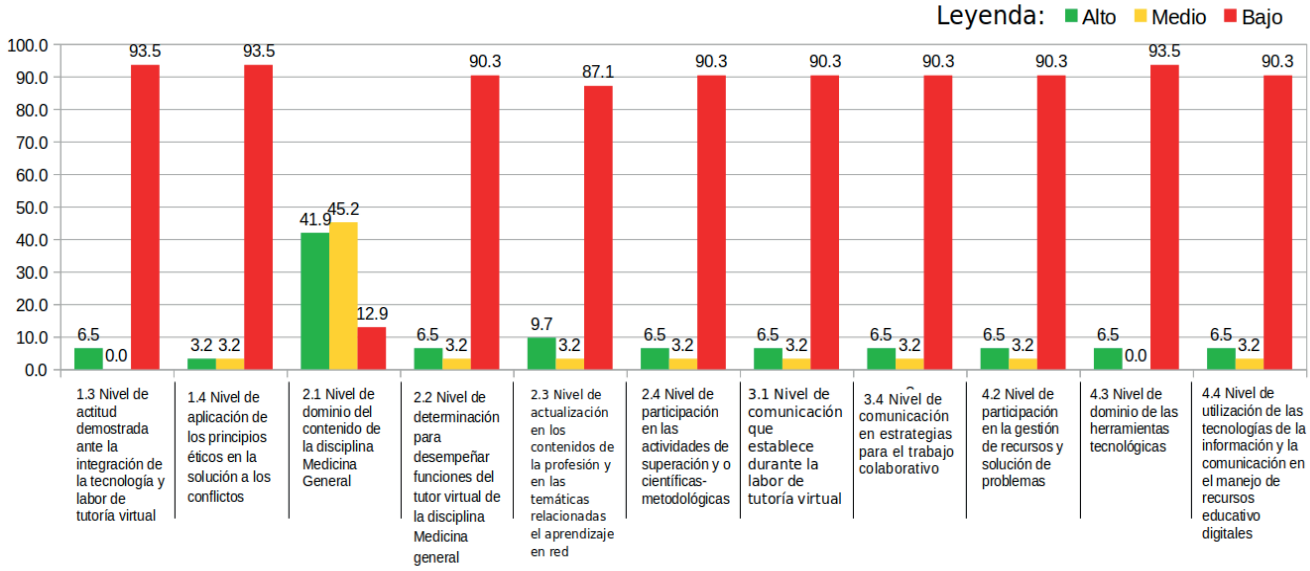

Figure 3. Results of the observation of the virtual tutor's performance

Methodological triangulation of results

The application of methodological triangulation of the results obtained confirmed that the performance level of the virtual tutor in the discipline of general medicine is low.

The results obtained show that in the political-ideological dimension, the most affected indicators were 1,3 and 1,4, related to the attitude demonstrated towards the integration of technology and the application of ethical principles in conflict resolution during the virtual tutoring process. In the professional-pedagogical dimension, the most affected indicators were 2,2, 2,4, and 2,5, related to the fulfillment of the virtual tutor's functions, participation in improvement and/or scientific-methodological activities, and the publication of scientific articles related to the topic of networked learning.

In the social-communicative dimension, indicators 3,1 and 3,4, related to the level of communication established during virtual tutoring and the development of strategies for collaborative work, had the lowest performance levels. The analysis of indicators 4,2, 4,3, and 4,4 in the technical-administrative dimension, related to the use of the educational potential of technologies, mastery of technological tools and their use in support of learning development, and participation in the management of resources and learning and assessment activities in virtual environments, revealed that these were the most affected.

Inventory of potential and problems. Based on the analysis of the results of the inquiries carried out and the technology used to determine potential and problems, the problems related to the performance of the virtual tutor in the discipline of General Medicine were identified (table 3).

Table 3. Potentialities and problems identified

Potential		
The institution's virtual campus is accessible from the Internet Recognition, in the study plan, of the need to develop strategies aimed at making better use of information and communication technologies. Recognition of professional development as a process that contributes to improving the quality of the teaching process and its results.		
Problems		
Educational	Research	Work organization
Insufficient knowledge about the integration of technologies and online training. Limitations in mastering the functions of the virtual tutor.	Absence of research projects and scientific articles related to the integration of technologies and network training.	Insufficient methodological actions to contribute to the preparation and improvement of performance Lack of counterpart in methodological guidelines on recommendations for better use of technologies in study programs Insufficient provision and participation in training related to the integration of technologies and network training

DISCUSSION

The literature describes numerous definitions of the role of the virtual tutor, with the academic function standing out in most cases as one of their most important tasks.[11,12,13,14] In general, they emphasize that virtual tutors must perform effectively and be able to adapt to the various demands of tutoring, both cognitively and emotionally[13,14] their activity should focus on pedagogical content planning, support, monitoring, and feedback on results,[1,15] the development of autonomy and cognitive independence,[16] a criterion shared by the authors of this work.

In this regard, most of the authors consulted advocate the use of the TPACK model,[14,17,18] requiring teachers to have disciplinary, content, technological, and pedagogical knowledge, dimensions that should be assumed interactively and comprehensively.[18,19,20,21] This research highlights the inclusion of the political-ideological dimension and defines the indicators that it encompasses, in recognition of the impact of the attitudinal component,[14,22] the level of commitment of the teacher, and the support of the institution itself,[19] as determining factors in the success or failure of the distance education experience.

In principle, the evaluation of the virtual tutor's performance should be approached from different angles, such as the student's perception, the teacher's self-evaluation, and the evaluation of the institution's academic leaders.[17,18,19,20,21,22]

In the research, the analysis of sociodemographic variables showed that in most studies, women predominate in university teaching staff, however, the age of teachers is lower[23] compared to the results found. These results were determined by the accelerated aging of the active workforce in the Caribbean nation.[24,25]

Several studies reveal the higher level of performance of virtual tutors in aspects related to communication, guidance, and monitoring in virtual environments, and to a lesser extent, in participation in activities such as closure, feedback, promotion of cooperative work and autonomy, as well as the provision of technical assistance to students,[12,14] in all cases exceeding the results obtained in the research.

In the authors' opinion, this result could be related to aspects grouped among the educational problems identified, coinciding with the shortcomings and limitations referred to by Garcia Aretio[5] and Becerril C, et al.[6].

Finally, it is worth mentioning the limitations of the study. First, the questionnaire was self-administered, which could have influenced the responses. Limitations due to the size of the population, which was limited to teachers in the teaching department, should also be noted, as this limited the scope of the research and means that the findings require further empirical verification.

CONCLUSIONS

The results of this research allowed us to comprehensively characterize the initial performance of virtual tutors in the discipline of general medicine, revealing an insufficient level of performance in several key indicators. This diagnosis not only reveals current limitations but also highlights significant potential among the teaching staff, which constitutes a valuable basis for the development of improvement strategies. Beyond the figures, the study invites deep reflection on the role of the virtual tutor in training processes, especially in distance learning environments. The complexity of the role requires solid preparation, not only in the pedagogical, technological, and disciplinary components, as proposed by the TPACK model, but also in attitudinal and political-ideological dimensions, the absence of which can compromise the impact of the educational experience. It is a priority to refocus the ways in which tutorial performance is supported, monitored, and evaluated, integrating student perception, teacher self-evaluation, and the critical view of academic teams. One of the main limitations of the study is the difficulty of directly observing the performance of the participants, as well as the limited size of the sample. These restrictions mean that the results should be taken as an initial, but not definitive, approximation of the phenomenon studied. Therefore, further research with broader and more diversified methodologies is recommended to validate and enrich the findings obtained.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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Supervision: Alexander Ochoa Agüero.
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