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ANALYZING THE PERFORMANCE OF ONLINE TUTORS: PERSPECTIVES OF UNDERGRADUATE STUDENTS IN A PUBLIC ACCOUNTING PROGRAM

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Abstract: The success of online education depends to a large extent on the figure of the tutor. Their role goes beyond transmitting knowledge and directly influences student motivation and satisfaction. This paper explored how Public Accounting students perceived their online tutors in a Mexican public university. Through a descriptive analysis, strengths and weaknesses in the performance of academic, pedagogical, guidance, technical and social functions were identified. The results of the study support decision making to design continuous training programs that optimize the performance of tutors and guarantee a quality learning experience.
Keywords: online tutor, online education, descriptive analysis.

INTRODUCTION

The tutor in online education is the teacher who integrates a solid intellectual background in the academic, pedagogical, guiding and technological fields in addition to the personal one (Cabero, 2006 cit. In Franco 2017). They have an important role as protagonist of the teaching-learning process since they do not only limit themselves to transmit content, but guide students as they access and assimilate the content at their own pace (Cabero, 2006 cit. In Fernandez *et al*. 2013; Rahmani *et al*., 2024; Vlachopoulos and Makri 2021; Xavier and Meneses, 2020). Their ability to communicate effectively, motivate, guide and provide personalized feedback will directly influence student engagement and satisfaction (Vlachopoulos and Makri 2021).

According to Cabero (2007), Llorente (2007), Vlachopoulos and Makri (2021) online tutors should perform five main functions: (1) academic function referring to the mastery of content, design, organization of activities and evaluation of learning; (2) technical function referring to the mastery of technological tools, technical support to students and the integration of digital resources; (3) guiding function referring to the planning and organization of learning, development of autonomous learning skills, motivation and emotional support; and (4) social function referring to the creation of a virtual learning community, facilitation of communication, and emotional support. (3) Guidance function referring to the planning and organization of learning, development of autonomous learning skills, motivation and emotional support. (4) Social function referring to the creation of a virtual learning community, facilitation of communication and management of diversity and interculturality. (5) Organizational function referring to the management of the virtual classroom, monitoring of student progress, communication with the institution.

The performance of the online tutor in the previously mentioned functions is closely linked in the perception of quality in online education, since a well-prepared, committed and responsive tutor contributes to a positive perception of the quality of the programs (Cabero, 2006 cit. In Fernandez *et al*., 2013; Vlachopoulos and Makri 2021)

Despite the growing importance of the online tutor, there are still challenges in their training and professional development. Analyzing their performance in these functions is crucial to ensure the quality of online education given their leading role in the learning process (Rahmani *et al*., 2024; Vlachopoulos and Makri 2021; Xavier and Meneses, 2020). A from this analysis facilitates the identification of strengths and areas for development, information that is valuable for designing training and professional development programs that respond to the specific needs of the tutor, improving their performance and thus the quality of online education (Vlachopoulos and Makri 2021).

On the other hand, data is the process of examining data with the objective of finding

conclusions about the information it may contain (Balali et al. 2020). It enables organizations to understand their past performance, predict future outcomes, optimize decision making, identify opportunities and threats, and facilitate data-driven decision making (Sharma *et al*., 2022). In particular, descriptive data analysis relies on historical data to gain a better understanding of how things have led to the current situation and on the idea that observing the past can provide valuable information about the present and help the future (Sharma *et al.,* 2022), hence among the advantages offered by descriptive data analysis are providing historical context, measuring organizational goals, identifying trends and then visualizing patterns to classify strengths and weaknesses of an organization (Sharma *et al*., 2022).

In this sense, this paper proposes a descriptive data analysis to explore the performance of online tutors, with the aim of identifying areas for improvement and training needs to design continuing education programs that meet the specific needs of each institution and ensure quality online education. The analysis is situated in the evaluation of online tutors conducted in the spring 2019 term by students of the public accounting faculty of a public university in Mexico. Although the conclusions may not be generalizable to the current situation, given that the context of online education may have undergone significant changes, this work, by adopting a descriptive approach and exploring the performance of online tutors in 2019, is intended to be a basis that can serve as a starting point for future research with more recent data, by allowing the identification of areas of interest, such as the evolution of online tutoring strategies, the impact of technology on tutor performance, or the relationship between tutor evaluation and student performance.

The following sections present the preliminaries of the work, methodology, results and conclusions of the work.

PRELIMINARIES

The theoretical concepts underlying the work are presented below.

ONLINE EDUCATION

Online education can be understood as an evolution of distance education, taking advantage of information and communication technologies to create virtual learning environments. According to García and Seoane (2015) online education is a formative process of an intentional or unintentional nature, aimed at the acquisition of competencies and skills in a social context, which takes place in a technological ecosystem in which different user profiles interact and share contents, activities and experiences and which, in formal learning situations, must be tutored by teachers whose activity contributes to guarantee the quality of all the factors involved.

Velazco *et al.* (2017), emphasize that online education eliminates space and time barriers, offers flexible training through various methods and resources, student-centered teaching-learning processes, the teacher becomes a tutor who orients, guides, helps and facilitates training processes, and communication. Similarly, Cabero (2016) points out nine characteristics of online education that include: spatial and temporal separation between teacher and student, mediated training supported by different technologies, mediated communication between teacher and student, synchronous and asynchronous communication, students who are older than those of the face-to-face system, existence of an institution that organizes the educational structure, incorporation in the educational action of different profiles such as teachers, students, material production technicians, material distributors, tutored training, and bidirectional, multicode and multipersonal communication.

In this study modality, it requires having the appropriate pedagogical and technological resources, in addition to facilitators of the learning process who have a variety of tools for the design, implementation and evaluation of virtual resources (Jiménez *et al*., 2017).

ONLINE TUTOR

The online tutor is the person who provides support to students, in a real or virtual space, so that they can develop their cognitive potential in the learning process, beyond the skills with which they enter the educational process (Espinoza and Ricaldi, 2018). It is the person whose task is to adapt the contents of the course to the characteristics and needs of each student (García, 2001 cited in Franco, 2017). Their role is a determining factor for success in online education (Cabero, 2006 cited in Fernández *et al*., 2013).

According to Fainholc (2008 cited in Abarca, 2014) tutorial action or teacher mediation should provide knowledge and experiences that foster a diversified learning environment detecting two specific responsibilities (1) support the student in their training so that they learn to be autonomous, creative and responsible for their learning process and (2) promote innovative educational practices through the Internet, through which students can incorporate the technological resources offered by the web.

The functions of the online tutor are an essential component for the effective interaction between the tutor and the students. García (2006, cited in Abarca, 2014) points out that among the functions of the online tutor are the permanent provision of training, understanding the nature of distance education, developing interactive courses that adapt to technologies, identifying the characteristics of students in order to adapt teaching strategies to their particular needs, and evaluating student achievement.

Llorente (2007), points out that the functions of the online tutor can be framed into five fundamental ones: (1) academic function: guiding learning through questions that encourage reflection and critical analysis, in addition to which the tutor facilitates the understanding of content and helps students connect theory with practice, (2) technical function: ensuring that students understand how to use the course tools and technology platforms, including offering technical support, managing work groups and updating materials in the learning environment, (3) guiding function: providing personalized support and guidance to students, helping them develop effective study techniques and motivating them to achieve their academic goals, (4) social function: fostering an environment of collaboration and communication among students, including welcoming new participants, encouraging interaction and exchange of ideas, and creating a sense of community within the course), and (5) organizational function: effectively planning and structuring the course, establishing the course schedule, explaining operating rules, coordinating group work, and maintaining communication with the teaching and organizational team.

DATA ANALYSIS

According to Król and Zdonek (2020) data analysis can be divided into 5 categories: (1) descriptive analysis that answers the question What happened, allows to understand and know the reality through the characterization of data and the identification of patterns, (2) diagnostic analysis answers the question Why did it happen, allows to detect regularities and quantitative relationships between variables through the analysis of historical data, (3) predictive analysis answers the question What will happen in the future, focuses on predicting future events and trends through the analysis of historical and current data, (4) prescriptive

analysis answers the question What actions should be taken? focuses on predicting future events and trends by analyzing historical and current data, (4) prescriptive analytics answers the question What actions should be taken, supports the decision-making process and, in many cases, automates actions based on these decisions, and (5) cognitive analytics uses artificial intelligence technologies and high-performance data analysis to automate the decision-making process and increase the efficiency of decisions by collaborating with intelligent machines. In practice these categories coexist and complement each other (Balali, *et al.,* 2020; Sharma *et al.,* 2022).

DESCRIPTIVE ANALYSIS

Descriptive analysis provides information about what has happened in an organization's processes, uses data from the past to identify changes that have occurred, explains the use of a variety of historical data that help organizations make comparisons (Król and Zdonek, 2020; Sharma *et al.,* 2022). Analyzes raw data to draw meaningful conclusions that are valuable to stakeholders (Sharma *et al.,* 2022). It provides the ability to evaluate things in a healthier way in terms of how processes are working, to verify whether objectives are being achieved efficiently , enabling organizations to perform better (Sharma *et al.,* 2022).

The descriptive data analysis process follows 5 phases: (1) decide the benchmark to evaluate the performance of the analysis--based system, (2) identify the required data, (3) collect and sort the data for processing, (4) examine the data to discover patterns and calculate their efficiency, and (5) visualize the data by presenting the discovered pattern in the form of graphs (Sharma *et al.*, 2022).

Descriptive analysis has the advantages of providing historical context, measuring organizational objectives, identifying trends and then visualizing patterns to classify strengths and weaknesses of an organization (Sharma *et al.,* 2022). On the other hand, among its limitations is that it cannot explain why things happened so it must be used with other types of analysis to have better results (Sharma *et al.,* 2022).

METHODOLOGY

The methodology followed in this work followed the six-phase data analysis life cycle: (1) ask questions, (2) obtain the data, (3) investigate the data, (4) prepare the data, and (5) analyze the data.

The following is a description of each stage.

ASKING QUESTIONS

In this phase we worked on understanding the challenge to be solved or the question to be answered. The need to make data-driven decisions to design continuing education programs that optimize tutor performance and ensure a quality learning experience was identified. To this end, the following questions were posed:

1. What is the general perception of students about the performance of online tutors?

2. What percentage of online tutors achieve 80% satisfaction in the performance of academic, technical, counseling, organizational and social functions?

3. What is the best and worst function evaluated by students?

4. Are there significant differences in the evaluation of the functions?

5. What are the best and worst evaluated items in each function?

6. What functions are most valued by students in high-scoring online tutors?

7. What features need to be improved in online tutors with low scores

OBTAINING DATA

In this phase, the data needed to answer the questions of the previous phase were identified. The results obtained from the application of the evaluation instrument designed for the courses taught in distance mode at the undergraduate level of a Mexican university (Vicerrectoría de Docencia, S/F) for the spring 2019 period were used

The instrument is composed of 14 items or statements in the didactic area associated with 5 functions: academic/pedagogical (5 items), guiding (3 items), organizational (2 items), social (3 items) and technical (1 item). These statements were evaluated using a Likert scale ranging from "Strongly disagree" to "Strongly agree".

Function	Item
Academic	A1. Provided materials, examples and/or exercises complementary to the material available on the platform, if necessary.
	A2. It provided feedback that helped me to make adjustments and improvements.
	A3. The teacher's actions/interventions helped me to improve my learning in the subject.
	A4. Reported in a timely manner when adjustments were made to the evaluation criteria.
	A5. Observed the agreed/established evaluation criteria.
Guidance	O1. Gave timely solution to my doubts
	O2. His actions/interventions motivated me to continue my studies.
	O3. It motivated me to reflect on the topics addressed.
Organizational	Or 1. Provided me with meaningful information regarding the institution, if necessary.
	Or 2. Organized group work, facilitating group interaction.
Technique	T1. Efficiently used the tools available on the platform.
Social	S1. Promoted friendly and respectful interaction among group members.
	S2. Encouraged, reinforced and acknowledged my participations.
	S3. Promoted interaction among the group through appropriate and timely mechanisms.

Table 1. Evaluation instrument items

Source: Own elaboration, according to Instrumento de evaluación de la Docencia modalidad a distancia. Benemérita Universidad Autónoma de Puebla. Vicerrectoría de Docencia (s.f.)

For each item, the percentage of acceptance was calculated by dividing the positive responses (number of times the options agree and strongly agree were selected) by the total number of responses.

$$Percentafe\ of\ \ acceptance\ item_i = \left(\frac{Positive\ responses}{Total\ responses}\right) \times 100$$

In addition, information was obtained on the tutor who provided follow-up, name of the subject, number of students enrolled and number of evaluations performed for each course.

The data reflect the evaluation of 103 courses corresponding to 83 different subjects taught in accounting by 75 tutors.

DATA RESEARCH

In this phase, it was determined whether the data collected were complete and whether they contained relevant information to answer the questions. It was analyzed which specific information would be used and which was sensitive and would have restricted access to ensure the confidentiality of those being evaluated.

The best way to present the data visually was also analyzed.

DATA PREPARATION

In this phase the data were cleaned and organized. Tasks were performed to avoid inconsistencies, fill in missing values, change the data to a format that was easy to work with.

Similarly, certain data were summarized and others were added, such as the percentage of acceptance for each of the tutor's functions in the academic, guidance, organizational, social and technical areas.

$$Porcentage\ of\ function_i = \frac{acceptance\ porcentage\ item_{(i,0)} + \cdots + \ acceptance\ porcentage\ item\ _{(i,j)}}{Number\ of\ items\ i8n\ function_i}$$

Another input was the average of the acceptance percentages of all the functions to obtain the total acceptance percentage of the functions using the following formula:

$$Total\ Feature\ Acceptance\ Percent = \frac{Feature\ Acceptance\ Percentage_1 + \cdots + Feature\ Acceptance\ Percentage_5}{5}$$

At the end of the process, the data used to perform the descriptive data analysis were: the tutor identifier, course identifier, number of enrollees, number of evaluations answered, acceptance percentages for each of the 14 items, acceptance percentages for each of the five functions and the total acceptance percentage of the functions.

ANALYZE DATA

In this phase, the data resulting from the previous phase were analyzed and patterns, correlations and relationships within a data set were identified to draw inferences and conclusions. Averages and element counts by category were calculated to examine trends and patterns with the support of spreadsheets and visualization tools.

PRESENTATION OF RESULTS

This last phase corresponded to the generation of a report showing the most relevant findings that would be useful and easy to understand for decision-makers. It was done

In this phase, spreadsheets and the Tableu tool were used, which is a visual analysis platform that allows maximum use of the data (Tableu, S.F.), which, based on graphs, made it possible to answer the questions of the proposed analysis.

RESULTS

The findings of the analysis are presented below.

Most of the students showed satisfaction with the performance of their tutors. Two groups of tutors are differentiated by the evaluation they receive. One group obtains very high evaluations (95-100%), indicating exceptional performance, while the other group obtains moderately high evaluations (70-75%) indicating good performance, although with areas for potential improvement

The percentages of student-perceived acceptance of their tutors' performance in each role ranged from 70% to 80%, suggesting areas for potential improvement.

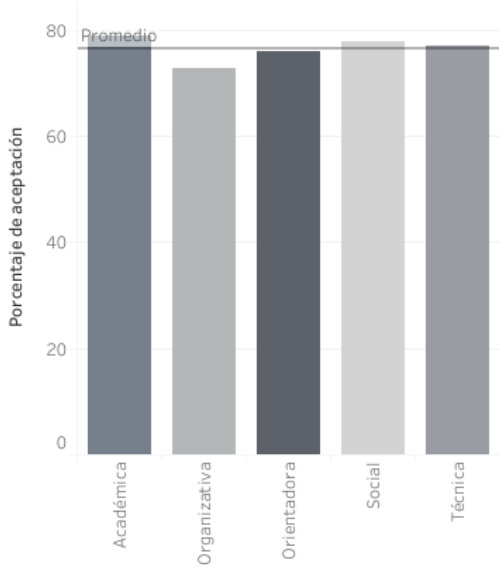

Figure 2. Percentage of acceptance by function

Source: Own elaboration.

Fifty percent of the tutors are perceived by the students with a medium-high performance by exceeding 79% of acceptance. The highest concentration of tutors is between 68% and 89% acceptance.

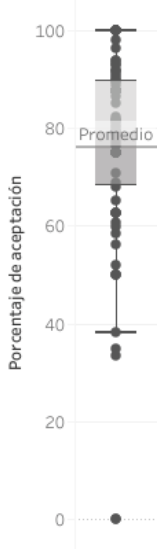

Figure 3. Distribution of acceptance percentages by quartile.

Source: Own elaboration.

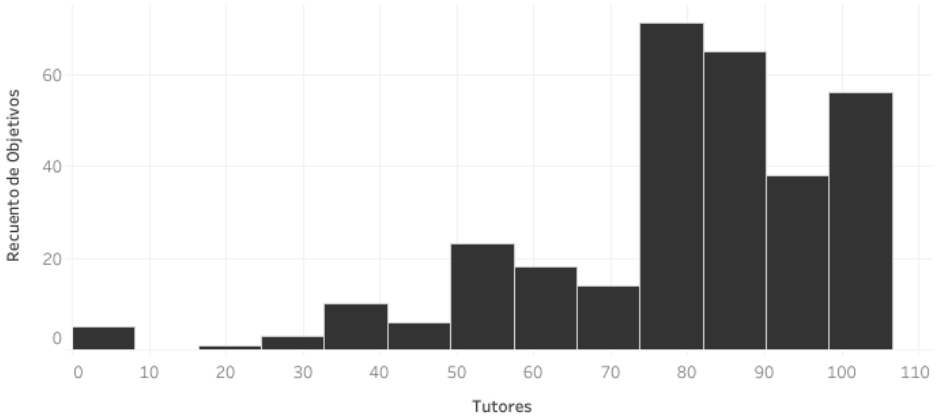

Figure 1. Distribution of percentage of acceptance
Source: Own elaboration.

The online tutors perceived by the students with exceptional performance (percentage of acceptance greater than 89.6%) are evaluated positively in the 5 functions, exceeding 90% of student acceptance. The organizational function is the one with the lowest perceived performance, although the difference between the other functions is not relevant.

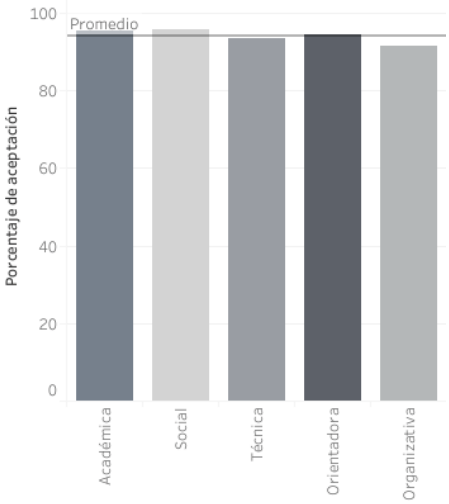

Figure 4. Percentage of acceptance by role (tutors with exceptional performance)
Source: Own elaboration.

On the other hand, the tutors who are perceived by the students as performing poorly (percentage of acceptance between 32% and 68%) barely manage to exceed 60% of acceptance. The guidance, organizational and technical functions are below 60%, being possible areas for potential improvement.

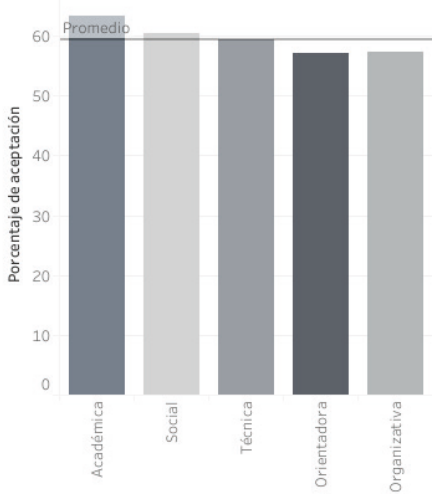

Figure 5. Percentage of acceptance by function (poorly performing tutors)
Source: Own elaboration.

Regarding the analysis of each of the evaluated items, students perceive a high performance close to 80% in items A1, A4 and A5 of the academic function. These items are related to specific information provided by the online tutor on materials and evaluation criteria. Items A2 and A3 are areas of potential improvement as they are below average. These items are related to feedback provided to a student regarding their skills or performance demonstrated during the completion of a task, usually after instruction

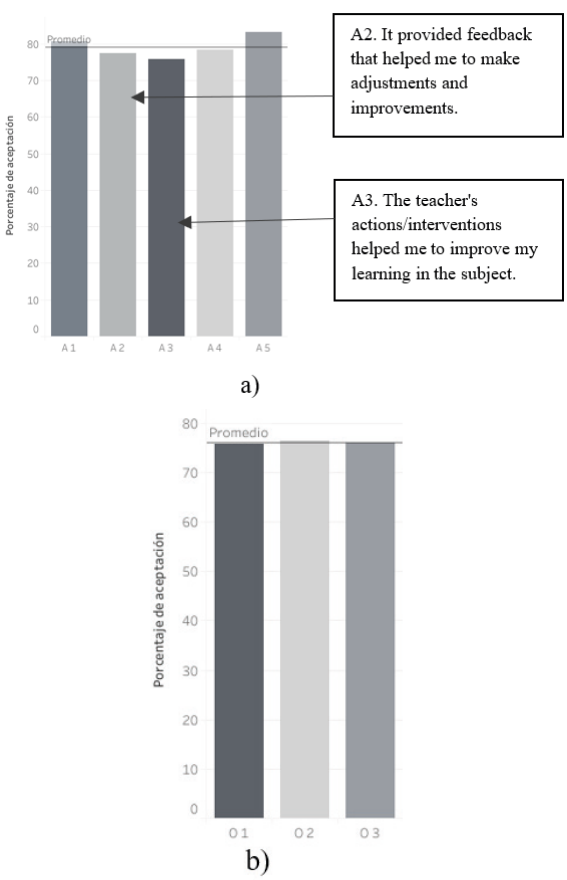

Figure 6. Acceptance by item in academic (a) and counseling (b) functions.
Source: Own elaboration

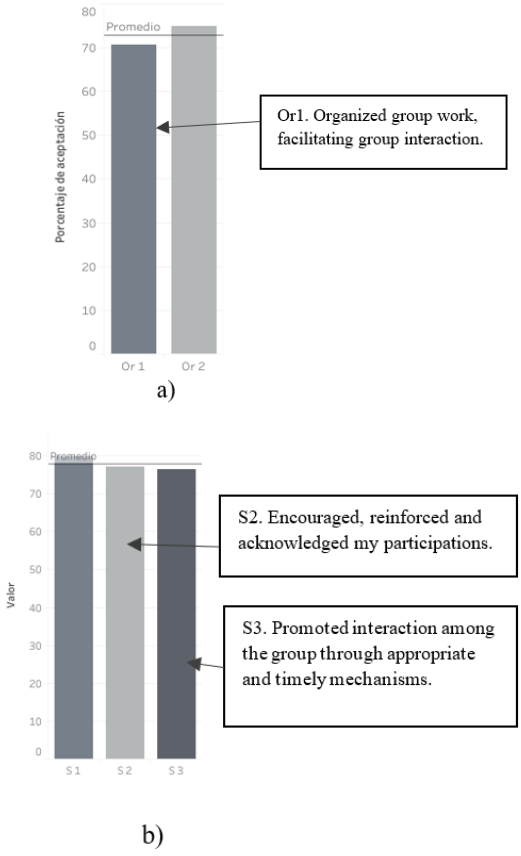

Figure 7. Acceptance by item in organizational (a) and social (b) functions.
Source: Own elaboration

Students perceive moderately high performance on all items of the orienting function O1, O2, and O3 below 80% as a potential area for improvement. The items in this function are closely related to information provided to a student regarding his or her skills or performance demonstrated during the completion of a task.

Also, students perceive a moderately high performance in items Or1 and Or2 of the organizational function, exceeding 70% acceptance. Item Or1 is below 80% and is related to the use of collaborative and cooperative learning strategies.

Similarly, students perceive lower performance below 70% of acceptance items S2 and S3 of the social function. The first one is related to the information provided to a student in relation to his or her skills or performance demonstrated during the completion of an assignment.

From the findings, two areas of opportunity are highlighted that can be the guide to develop training courses that impact the quality and perception of students in the performance of their tutors. The first with providing strategies to tutors to provide quality information regarding the skills or performance demonstrated by students during the completion of a task and the second on strategies that foster collaborative work and greater student interaction.

CONCLUSIONS

This paper proposed a descriptive data analysis to explore the performance of online tutors, with the aim of identifying areas for improvement and training needs that allow designing continuing education programs that respond to the specific needs of each institution and ensure quality online education. The analysis was situated in the evaluation of online tutors carried out in the spring 2019 period by students of the public accounting faculty of a public university in Mexico.

It highlights the usefulness of descriptive analysis for data-driven decision making that allows institutions to take action to improve their academic and administrative processes by detecting strengths and areas of opportunity.

Although the findings may not be generalizable to the current situation, given that the context of online education may have undergone significant changes, by taking a descriptive approach and exploring the performance of online tutors in 2019, this paper seeks to lay the groundwork for future research with more recent data.

As future work, we will seek to obtain updated information to perform similar analyses that will allow comparisons to be made before and after the implementation of training courses.

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