
Multiple Methods in Assessing the Institutional Context for Teaching Development in a Mexican University

Métodos múltiples en la evaluación del contexto institucional para el desarrollo de la docencia en una universidad mexicana

用多种方法评估墨西哥一所大学教学发展的体制背景

Множественные методы оценки институционального контекста для развития преподавания в мексиканском университете

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Abstract

Introduction: This study is based on the Model for the Evaluation of Teaching Competencies (MECD), which includes four dimensions: (a) planning of the teaching-learning process; (b) execution of the teaching-learning process; (c) assessment of the impact of the teaching-learning process; and (d) institutional context for teaching development. Specifically, the study presents results related to the evaluation of the last dimension in a public organization in southeastern Mexico, from the perspective of undergraduate students in four academic programs at a public university.

Method: The "Assessment of Context Variables from the Students' Perspective" instrument was used to examine the perceptions of 970 undergraduate students from the faculties of Education, Law, Mathematics, and Nursing.

Results: Students positively evaluated various aspects of the institutional context, although variations were observed across faculties. Regarding elements of the teaching-learning process, the results reflected an overall positive evaluation with an average score of 4.0. However, differences were noted between faculties: Education scored 4.3, Law 3.64, Mathematics 3.92, and Nursing 4.30. Focus group interviews provided additional perspectives not captured by the questionnaires. These emerging aspects of the context are significant for improving teaching and student learning.

Conclusions: Overall, this study provides a detailed view of how university students perceive and evaluate the institutional context and elements of the teaching-learning process across different faculties, highlighting both strengths and areas requiring further attention to optimize the quality of education.

Keywords: evaluation, quality, teaching, conditions.

Resumen

Introducción: Este trabajo se basa en el Modelo de Evaluación de Competencias Docentes (MECD) que incluye cuatro dimensiones: (a) previsión del proceso de enseñanza-aprendizaje; (b) conducción del proceso enseñanza-aprendizaje; (c) valoración del impacto del proceso de enseñanza-aprendizaje y d) contexto institucional para el desarrollo de la docencia. El trabajo presenta resultados relacionados con la evaluación de la última dimensión en una universidad pública del sureste de México desde la perspectiva de los estudiantes de licenciatura en cuatro carreras.

Método: Se utilizó el instrumento de "Valoración de las variables de contexto en la opinión de los estudiantes" para examinar las percepciones de 970 estudiantes de licenciatura de las facultades de Educación, Derecho, Matemáticas y Enfermería.

Resultados: Los estudiantes evaluaron positivamente varios aspectos del contexto institucional, aunque se observaron variaciones entre las facultades. Respecto a los elementos del proceso de enseñanza-aprendizaje, los resultados reflejaron una valoración global positiva con una puntuación promedio de 4.0. Sin embargo, se observaron diferencias entre las facultades: Educación obtuvo 4.3, Derecho 3.64, Matemáticas 3.92 y Enfermería 4.30. Las entrevistas con grupos de enfoque añadieron perspectivas adicionales no capturadas por los cuestionarios. Estos aspectos emergentes del contexto resultan significativos para mejorar la docencia y el aprendizaje de los estudiantes.

Conclusiones: Este estudio proporciona una visión detallada de cómo los estudiantes universitarios perciben y evalúan el contexto institucional y los elementos del proceso de enseñanza-aprendizaje en diferentes facultades, destacando tanto las áreas de fortaleza como aquellas que necesitan mayor atención para optimizar la calidad de la educación.

Palabras clave: evaluación, calidad, enseñanza, condiciones.

摘要

簡介：本研究以「教學能力評量模型」(MECD) 為基礎，包括四個層面：(a) 教學流程規劃；(b) 教學流程執行；(c) 教學流程影響評估；(d) 教學發展的機構背景。具體來說，本研究從一所公立大學四個學術課程的本科生的角度，呈現墨西哥東南部一家公立機構對最後一個維度的評估結果。

方法：使用「從學生角度評估環境變數」工具來檢視來自教育學院、法律學院、數學學院和護理學院的 970 名本科生的看法。

結果：學生對於學校環境的各個方面都給予了正面的評價，但各學院的評價有所不同。在教與學過程的要素方面，結果反映出整體的正面評價，平均分數為 4.0。然而，不同學院之間也有差異：教育學院得 4.3 分，法律學院得 3.64 分，數學學院得 3.92 分，護理學院得 4.30 分。焦點小組訪談提供了問卷所沒有的額外觀點。這些新出現的情境對於改善教學和學生學習非常重要。

結論：總的來說，這項研究提供了一個詳細的視角，讓我們了解大學生如何看待和評價不同學院的院校環境和教與學過程中的元素，突出了優勢和需要進一步關注的領域，以優化教育質量。

關鍵字：評價、品質、教學、條件。

Аннотация

Введение: Данное исследование основано на Модели оценки преподавательских компетенций (MECD), которая включает четыре измерения: (a) планирование процесса преподавания-обучения; (b) осуществление процесса преподавания-обучения; (в) оценка воздействия процесса преподавания-обучения; и (г) институциональный контекст для развития преподавания. В частности, в исследовании представлены результаты оценки последнего аспекта в государственной организации на юго-востоке Мексики с точки зрения студентов бакалавриата, обучающихся по четырем академическим программам в государственном университете.

Метод: Инструмент «Оценка переменных контекста с точки зрения студентов» был использован для изучения восприятия 970 студентов-бакалавров с факультетов образования, права, математики и сестринского дела.

Результаты: Студенты положительно оценили различные аспекты институционального контекста, хотя на разных факультетах наблюдались различия. Что касается элементов процесса преподавания и обучения, результаты отражают общую положительную оценку со средним баллом 4.0. Однако между факультетами были отмечены различия: Педагогический – 4.3 балла, Юридический – 3.64, Математический – 3.92, а Сестринское дело – 4.30. Интервью в фокус-группах позволили выявить дополнительные точки зрения, не отраженные в анкетах. Эти новые аспекты контекста имеют большое значение для улучшения преподавания и обучения студентов.

Выводы: В целом, данное исследование дает подробное представление о том, как студенты университета воспринимают и оценивают институциональный контекст и элементы процесса преподавания и обучения на разных факультетах, выделяя как сильные стороны, так и области, требующие дальнейшего внимания для оптимизации качества образования.

Ключевые слова: оценка, качество, преподавание, условия.

Introduction

The evaluation of teaching in higher education is typically conducted through opinion questionnaires, which are distributed at the end of the school year in universities or higher education institutions. Such type of research has been conducted for over forty years with little change in its methodology and focus.

Ory and Ryan (2001) reviewed the literature on teacher evaluation in the USA and other Western countries concluding that further studies on the validity of teacher evaluations are necessary. To examine the state of the art of teacher evaluation in Mexico, Rueda et al. (2011) conducted a diagnosis to assess the characteristics of teacher evaluations and the use of their results in institutes and universities in Mexico.

In recent years, Rueda Beltrán (2021) conducted studies to contribute to rethinking educational evaluation practices. He shares reflections on the evaluation policies implemented in the education sector, highlighting their limitations as the only resource to improve the school system. Likewise, studies by Polanco-Bueno, Buendía-Espinosa, and Peñalosa-Castro (2021) also contributed to the evaluation of teaching in a Mexican public university. They emphasized the importance of using complementary measurement tools that comply with verifiable technical indicators. These tools facilitate effective decision-making regarding the quality of teaching practice. Rueda Beltrán and Sánchez Mendoza (2018) discussed the experiences of the Ibero-American Network of Researchers on the Evaluation of Teaching (RIIED). This specific strategy has facilitated the analysis of the teaching practices and acknowledges the complexity of this process and its role within the institutional context. Other studies addressing the issues related to this topic are diverse, as outlined below. Delgado, Cisneros, and Domínguez (2021) conducted research that evaluated online teaching from the perspective of students attending an online high school at a public university in Mexico. Elizalde, Olvera, and Bezies (2017) describe the importance of evaluating the teaching practice of foreign language teachers to identify their strengths and areas of opportunity in improving learning. Sgreccia, Cirelli, and Vital (2023) pointed out that, when assessing mathematics teaching at a university, students value highly how their professors support them in achieving their activities, explain clearly, and motivate them to solve academic problems through educational guidance. Similarly, Martínez Clares et al. (2020) and Aguedad Gómez and Monescillo Palomo (2013) discuss that academic tutoring is a crucial element when students assess teaching practice due to the importance for students at different stages of their educational experience. Such practice facilitates students' integral development; and the achievement of the objectives of higher education and highlights the role of an understanding and empathetic teacher. Similar studies have been conducted by Torquemada González et al., (2021), which describe student self-evaluation as a feedback resource for improving university teaching.

Finally, Rueda et al. (2021) conducted a study on three decades of research about teacher assessment that helped identify the characteristics of teacher evaluation, from its description in educational policies to its implementation in different school organizations.

Likewise, García et al. (2008) developed a model for assessing teaching competencies. This model has been subject to review and evaluation for the last eleven years. This model evaluates three competencies: anticipation of the teaching-learning process, conducting the teaching-learning process, and assessing the impact of this process. The model focuses on the enhancement of teaching practice.

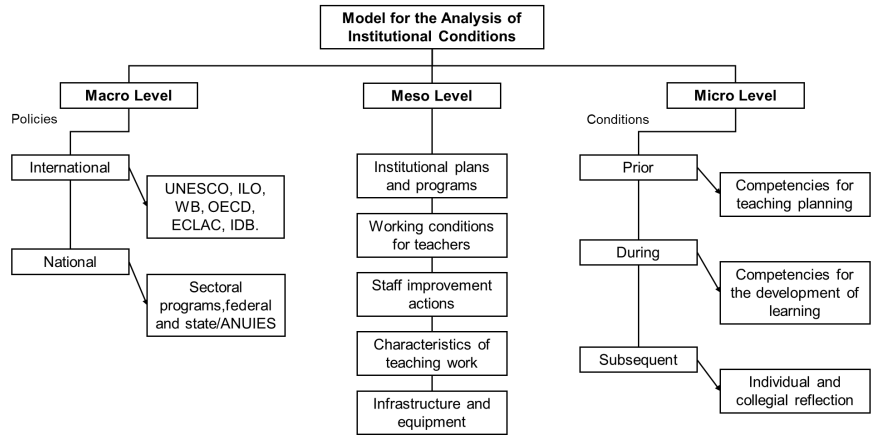
The model also includes an element not typically addressed in the literature on teaching evaluation: the institutional context in which the teaching takes place. Including the policies, practices, and conditions of teaching practice. According to Rueda et al. (2014), the institutional context can be defined as: “the set of conditions and actions of the organization related to the teaching practice, such as policies, curricular management, permanent training, staff hiring requirements, the characteristics of assignment of subjects and the distribution of schedules, among others (p. 172).”

In their study of the institutional context, Rueda et al. (2014) analyzed the context at three levels: macro, meso, and micro, as described below:

- *Macro level:* it is about the national and international policies and guidelines regarding the purposes, plans, and programs of higher education institutions related to teaching.
- *Meso level:* it is about institutional policies and practices through plans and programs, institutional culture and environment, teachers’ working conditions, and academic organization.
- *Micro level:* it includes the programs, teachers’ and students’ characteristics, physical factors such as infrastructure, equipment, laboratories, materials, etc., the characteristics of students’ groups, and their group dynamics that influence the teaching-learning process within the classroom.

Figure 1

Model for the analysis of institutional conditions for the improvement of teaching



Note. Taken from *Analysis of the contextual conditions for the development of teaching practice*, by A. Canales Sánchez & M. Rueda Beltrán, 2013, XII National Congress of Educational Research.

Research on the institutional context conducted by the network has found evidence of the importance of certain indicators of student learning that contribute to improving teaching practice. The research of Rueda, Canales and Leyva (2016), is one of those studies. They discovered that for students at the National Autonomous University of Mexico (UNAM) access to technological resources, library facilities, and class size is of great value.

Luna (2016) also reports that students at the University of Baja California valued three types of programs as aspects of the institutional context:

- a. Institutional student support programs: tutoring, educational and psycho-pedagogical counseling programs, and scholarship programs.
- b. Programs to strengthen comprehensive education: cultural and sports activities with credits, promoting foreign language learning, and student exchange programs.
- c. Services and equipment: libraries, computer rooms, laboratory facilities, and the cafeteria.

Similarly, Parra-Sandoval, Bozo, Inciarte and Fuenmayor (2016), in a study conducted at the Cecilio Acoto Catholic University and the University of Zulia in Venezuela, discovered that, according to the students, the physical infrastructure of the universities, including furniture, media, and didactic materials, technology, cultural activities, scholarships and exchanges, library and laboratories were the contextual aspects in need of improvement. Also, the students identified another vital element of the institutional context, such as campus security, due to the prevalence of robberies and assaults.

In another study conducted at the Universidad Tres de Febrero in Argentina, Fernández Lamarra et al. (2016) found out that the comprehensive tutoring program (especially in the early academic years, educational, vocational, and occupational guidance, and laboratory facilities were highly valued by the students.

At the University of Valencia, González-Such, Sancho-Álvarez, and Bakieva (2016) found that students showed little interest in cultural and sports activities. They also rated the tutoring service low, while valuing the opportunity to learn a second language, particularly English, highly, with a rating of 93.6%. Students had a high regard for electronic resources and library services but expressed dissatisfaction with the limited number of computers available. Additionally, although they valued the existence of scholarships, they were unhappy with the fairness of their distribution. There was a lack of communication regarding exchange programs, and students were dissatisfied with the limited availability of research courses.

Purpose of the study

This paper shows the preliminary results of a study of the institutional context in four faculties at a public university in southeastern Mexico. The results were collected in the faculties of Law, Education, Nursing, and Mathematics at the Autonomous University of Yucatan (UADY). This is a prestigious public autonomous higher education institution located in Mérida, Yucatán, Mexico, recognized regionally, nationally, and internationally.

Objectives

To analyze university student's perceptions of the contextual conditions related to the teaching-learning process and their relationship with academic achievement.

Specific objectives

To describe student's general perception of contextual conditions to identify strengths and opportunities.

To determine if there are statistically significant differences among faculties regarding the perceptions of the institutional context.

To identify the significant relationships between the evaluated dimensions of the institutional context.

To identify latent factors underlying the dimensions of the institutional context through exploratory factor analysis.

To assess the relationship between the dimensions of the institutional context and the student's academic achievement.

To examine the differentiated influence of the dimensions of the institutional context on academic achievement in each faculty.

To identify elements of the institutional context that students regard as relevant for the quality of teaching and learning.

Brief description of the university and the context of teaching assessment

The university has five campuses in Mérida and one in Tizimín, a city located in the East of the state of Yucatán. The UADY also includes the Dr. Hideyo Noguchi Regional Research Center, with two Research Units: Biomedical Sciences and Social Sciences. The Architecture, Habitat, Art and Design Campus is located at the "Mejorada Park" in the historic center of Mérida. The Biology and Agricultural Sciences Campus is located near the Xmatkuil hacienda. The Health Sciences Campus is on the west side of Mérida. The Social, Economic-Administrative Sciences and Humanities Campus is on the highway to Motul, northeast of Mérida. The Campus of Exact Sciences and Engineering is located on the outskirts of the Northern Beltway of Mérida; The Multidisciplinary Campus is the city of Tizimín, in the east of the State. There are four academic programs in Tizimín: Education, Nursing, Computer Science, and Accounting (Universidad Autónoma de Yucatán, 2018). In addition, the university runs three high schools.

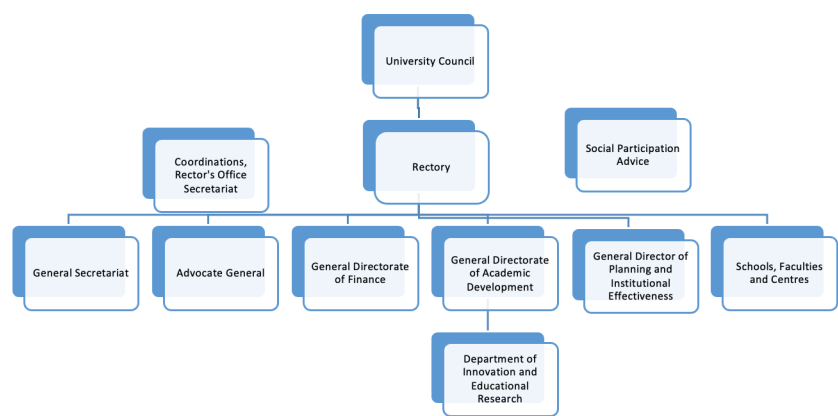
The university offers 45 undergraduate degree programs, 17 diploma programs, and 28 specialization programs. In addition, there are 27 master's degree programs and four doctoral programs in the following fields: Biological and Agricultural Sciences; Exact Sciences and Engineering; Health Sciences; Social, Economic-Administrative Sciences and Humanities; and Architecture, Habitat, Art, and Design. The enrollment is 9,533, both undergraduate and graduate students.

According to the Rector's report, in 2007, the university (Universidad Autónoma de Yucatán, 2014) had 706 full-time professors, 198 of them held doctoral degrees, 322 with master's degrees, 84 with specialty diplomas, and 102 with bachelor's degrees. In 2013, full-time professors increased to 777.

Regarding the organizational structure, there are three university authorities at the UADY: the University Council, the Rector, and the directors of faculties, schools, institutes, and Departments. The University Council is the highest authority of the university, and its purpose is to set the regulations and oversee the development of academic life within the institution through its three permanent commissions: academic, legis-

lative, and budget. This council includes the Rector, the directors of schools and faculties, one representative of the teaching staff and one of the students for each school and faculties, the directors of institutes and research centers, the Secretary General of the university, and the directors of the departments. The Rector is appointed by the University Council for a term of four years, and can be re-appointed once.

Figure 2
Organizational chart of the Autonomous University of Yucatan



The General Directorate of Academic Development has a Department of Innovation and Educational Research (DIEE). The DIEE staff collaborates with the high school and bachelor's degree coordinators for teacher training and evaluation.

Methods

This paper shows the results of the descriptive part of the study, which was conducted through a survey. This type of research provides information about the opinions, attitudes, and other characteristics of the participants, as McMillan and Schumacher (2006) point out as key elements of descriptive studies.

Participants

Nine hundred seventy higher-level students from four different faculties participated in the study. Most of the participants were women, as shown in Table 1, they had chosen the program as their first choice, and they are regular students at various stages of their studies. A minority of them speak an indigenous language, one in three are employed, and most of those who are employed work for 20 hours a week or more. Finally, the average grade of the participants was 84.55 points, with a standard deviation of 6.20 points. The descriptions for each faculty can also be seen in Appendix A.

Table 1
Description of the characteristics of the sample

Variable	N	%
Faculty		
Education	303	31.2
Law	203	20.9
Mathematics	161	16.6
Nursing	303	31.2
Sex		
Female	692	71.3
Male	278	28.7
First-choice Academic Program	708	73.1
Type of student		
Regular	634	95.3
Irregular	31	4.7
Stage of studies		
Initial	303	31.3
Intermediate	315	32.6
Final	349	36.1
Speaking Indigenous language	45	4.6
Currently employed	331	34.1
Hours of work per week		
Less than 5 hours	65	24.0
5 to 10 hours	50	18.5
From 11 a.m. to 3 p.m.	16	5.9
From 4 pm to 8 pm	33	12.2
More than 20 hours	107	39.5

Instrument

The instrument used for this study was designed as part of the project “Evaluation and Training for the Improvement of the Quality of Teaching”. This project was funded by the Autonomous University of Baja California and coordinated by Dr. Edna Luna Serrano and Adela O. Rosales of the Institute of Educational Research and Development. The instrument “Assessment of context variables in the opinion of students”,

aims to know the perception of the conditions of the institutional context that impact the permanence and graduation of students. The instrument was designed to meet quality standards and has been validated and administered in various Ibero-American countries.

It has the following sections:

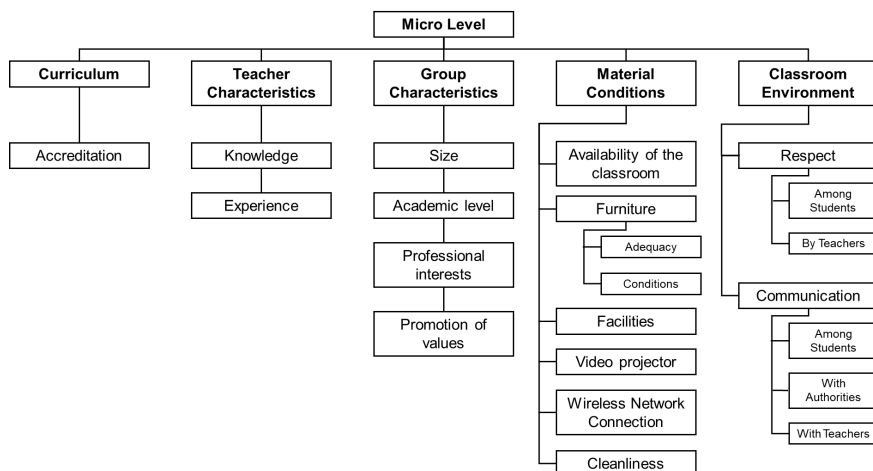
1. The first section contains the introduction and purpose of the study, as well as confidentiality in handling the information to be collected.
2. The second section includes questions where participants are asked to provide general information about the degree they are studying, the duration of their participation in the program, and their average grade. In addition, it asks whether they are speakers of an indigenous language and if they are employed.
3. In the third section, students are asked to indicate their level of agreement or disagreement with the statements presented to them using a five-point Likert scale. On this scale, 1 indicates "strongly agree," 2 means "agree," 3 signifies "undecided," 4 stands for "disagree," and 5 represents "strongly disagree." The instrument consists of 104 statements divided into 13 sections with a varied number of items in each one (see Table 2).

Table 2
Distribution and number of statements in each section of the instrument

Section	Items	Numbering
Tutoring Program	18	(01-18)
Educational and psycho-pedagogical counseling program	5	(19-23)
Scholarship Program	7	(24-30)
Academic Advising Program	2	(31-32)
Student Exchange Program	5	(33-37)
Research, cultural and sports activities	7	(38-44)
Promoting the learning of a foreign language	2	(45-46)
Vocational training and outreach	8	(47-54)
Library Services	10	(55-64)
Computer and equipment service	3	(65-67)
Computer and equipment service: in the computer rooms	6	(68-73)
Laboratories	11	(74-84)
Elements that impact the teaching-learning process	20	(85-104)

It is important to note that the first 12 elements of the instrument are focused on assessing variables identified by Luna and Rosales (2014) at the meso level for analyzing the institutional context. The last section, which is about the elements of the teaching-learning process, is aimed at aspects associated with the micro level (See Figure 3).

Figure 3
Elements of the micro



Note. Taken from “Identification of the context variables that promote the quality of teaching in higher education”, by E. Luna Serrano & O.T. Rosales Rodríguez, 2014, *Revista Argentina de Educación Superior*, 6(9)

Procedure

First, the survey was answered online through Google Forms, coordinating with the selected schools. The links were sent to the school coordinators, who shared them with the students so they could answer the survey. Subsequently, focus groups with students from the four faculties were conducted to explore other possible contextual elements and their influence on teaching.

For the analysis of the information, descriptive statistics were first generated to describe the general evaluations assigned by the students to each section of the instrument. After that, a one-way ANOVA was performed to determine if there were significant statistical differences in perceptions of the institutional context across faculties. This type of analysis was chosen considering the four groups and the normal distribution of the model's residuals.

In addition, the relationships between the different dimensions of the scale were examined using Pearson's product-moment correlation. This analysis served as a basis for the subsequent exploratory factor analysis to identify underlying latent factors in the dimensions of the institutional context. The extraction of residual minimums method was used to identify the number of factors to be retained by parallel analysis and applying an oblique rotation, as it was assumed that the factors could be correlated with each other.

Lastly, a multiple linear regression was performed to analyze the associations between student achievement and the dimensions of the perceived institutional context. This analysis allowed us to control other factors that could influence performance, such as the student's gender, the stage of their studies, whether they are employed, or if they are an irregular student. The analyses were performed both in general and by faculty.

All quantitative analyses were performed using Jamovi software (version 2.3 for Windows), considering a significance level of .05 for inferential analyses.

On the other hand, the information obtained through the focus groups was analyzed through an inductive content analysis, identifying only the manifest content and common themes in the students’ responses.

Findings

The answers for each item were analyzed to identify possible capture errors, missing values, and, in general, the response pattern. Only a maximum of two missing values were found in each item. Most of the response options were selected (See Appendix B).

Table 2
Internal consistency of dimensions

Dimension	Items	Numbering	α
Tutoring Program	18	1-18	.966
Educational and psycho-pedagogical counseling program	5	19-23	.883
Scholarship Program	7	24-30	.892
Academic Advising Program	2	31-32	.468
Student Exchange Program	5	33-37	.856
Research, Cultural and Sports Activities	7	38-44	.875
Promoting the learning of a foreign language	2	45-46	.421
Vocational training and outreach	8	47-54	.924
Library Services	10	55-64	.897
Computer and equipment service	9	65-73	.917
Laboratories	11	74-84	.973
Elements that affect the teaching-learning process	20	85-104	.928

Subsequently, the reliability indices of each dimension were analyzed using Cronbach’s alpha. As shown in Table 2, all dimensions, except those formed by only two items, exhibited “good” to “very good” internal consistency values. Next, the scores for each dimension were described. As shown in Table 3, the dimensions, promotion of learning a foreign language, and professional training and outreach obtained the highest scores. On the other hand, the dimensions, tutoring program, as well as research, cultural, and sports activities scored the lowest.

Table 3
Descriptive of dimension scores

Dimension	Average	D.T.
Tutoring Program	3.65	1.05
Educational and psycho-pedagogical counseling program	3.89	.94
Scholarship Program	3.72	.98
Academic Advising Program	3.78	.93
Student Exchange Program	3.67	.98
Research, Cultural and Sports Activities	3.66	.90
Promoting of learning a foreign language	4.32	.82
Vocational training and outreach	4.47	.71
Library Services	3.99	.80
Computer and equipment service	3.93	.89
Laboratories	3.82	1.17
Elements that affect the teaching-learning process	4.10	.69

The descriptives by faculty were also presented, as shown in Table 4. In general, the faculties of education and nursing had a more positive perception of the context than law or mathematics.

Table 4
Description of the dimensions of the context by faculties

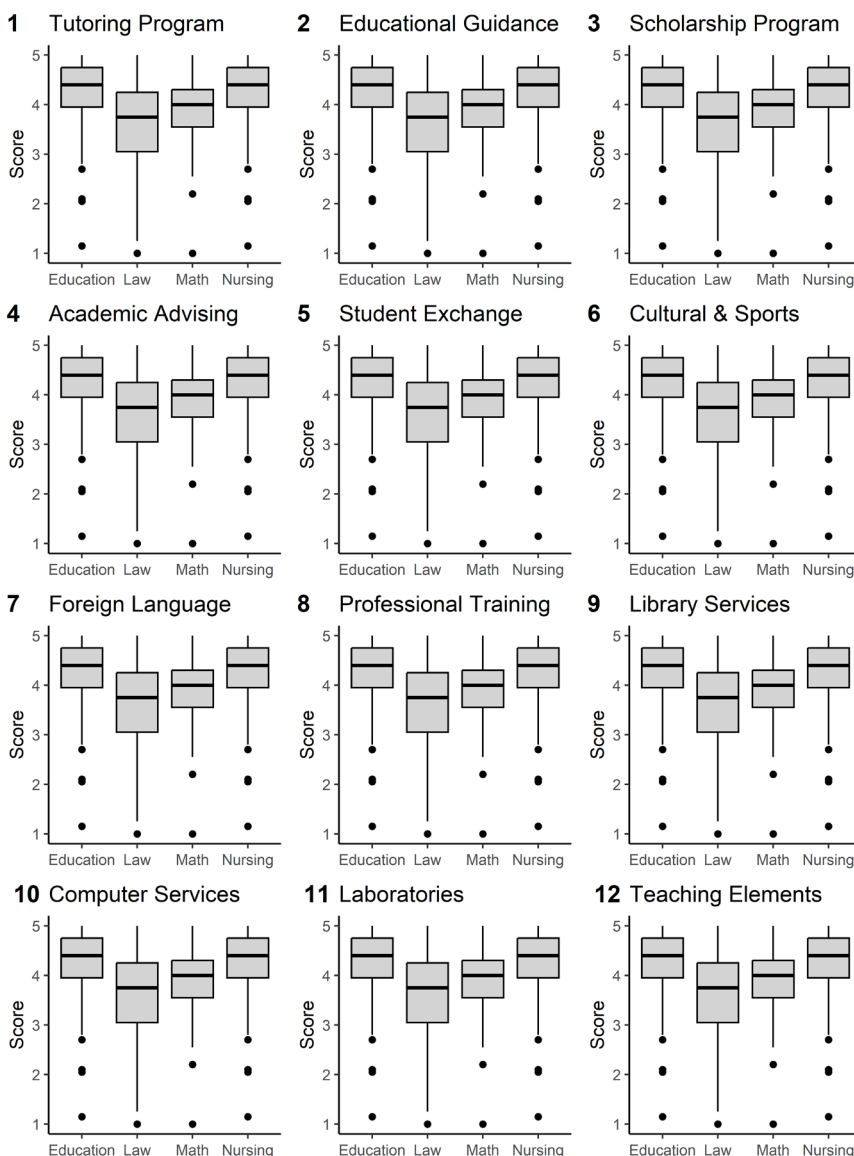
Dimension	Education		Law		Math		Nursing	
	Average	D.T.	Average	D.T.	Average	D.T.	Average	D.T.
Tutoring Program	4.11	.75	2.91	1.13	2.85	.87	4.11	.75
Educational and psycho-pedagogical counseling program	4.26	.70	3.15	1.08	3.45	.75	4.26	.70
Scholarship Program	3.89	.94	3.36	1.09	3.53	.81	3.89	.94
Academic Advising Program	3.77	.89	3.57	1.06	4.07	.81	3.77	.89
Student Exchange Program	3.95	.90	3.24	.95	3.14	.86	3.95	.90

Dimension	Education		Law		Math		Nursing	
	Average	D.T.	Average	D.T.	Average	D.T.	Average	D.T.
Research, Cultural and Sports Activities	3.91	.82	3.34	.90	3.08	.78	3.91	.82
Promoting of learning a foreign language	4.39	.76	4.08	.92	4.33	.83	4.39	.76
Vocational training and outreach	4.69	.51	4.25	.86	3.89	.75	4.69	.51
Library Services	4.14	.75	3.56	.86	3.97	.70	4.14	.75
Computer and equipment service	4.08	.80	3.39	1.05	4.01	.71	4.08	.80
Laboratories	4.10	1.14	3.33	1.22	3.40	.80	4.10	1.14
Elements that affect the teaching-learning process	4.30	.58	3.64	.79	3.92	.61	4.30	.58

Scores were also compared across faculties using a one-way ANOVA. All dimensions showed statistically significant differences, with F values ranging from 7.3 to 152.0. In all cases, the significance level was less than 0.001. The differences are shown in Figure 4.

Figure 4

Contrast of the scores obtained in each faculty



Correlations between the 12 dimensions were also explored, and all the dimensions presented statistically significant correlations, considering an alpha of .001 (Table 5). A strong, directly proportional correlation was found between the tutoring program and the educational guidance and educational psycho-pedagogy program ($r = .663$). On the other hand, the weakest correlation was found between the promotion of teaching a foreign language and the use of laboratories, indicating a significant but weak proportional relationship, ($r = .207$).

Table 5
Correlation between the dimensions of the instrument

	1	2	3	4	5	6	7	8	9	10	11	12
1	1	.659	.441	.309	.527	.544	.226	.446	.398	.339	.356	.558
2		1	.413	.350	.545	.545	.311	.474	.426	.452	.324	.552
3			1	.457	.511	.536	.354	.386	.452	.362	.368	.462
4				1	.408	.425	.335	.264	.372	.322	.222	.358
5					1	.614	.391	.447	.442	.380	.401	.484
6						1	.351	.471	.467	.360	.368	.515
7							1	.415	.411	.350	.196	.370
8								1	.406	.355	.352	.535
9									1	.608	.472	.603
10										1	.389	.554
11											1	.454
12												1

Note. * $p < .05$; ** $p < .01$; $p < .001$

Given the above correlations, it was deemed important to investigate the presence of second-order latent factors where the 12 dimensions were grouped. Therefore, an exploratory factor analysis (EFA) was performed. An analysis of the adequacy of the evidence was first considered. Bartlett's sphericity test was rejected ($\chi^2 = 3505$, $df = 66$; $p < .001$). This means that the null hypothesis stating that the correlation matrix is the identity matrix can be rejected, so, the conclusion is that there are second-order explanatory factors of the variance. Likewise, the Kaiser-Meyer-Olkin test of sample adequacy was relatively close to 1 (.923). This indicates the adequacy of the sample size. Subsequently, the EFA was performed following the most recent recommendations of the EFA (Lloret et al., 2014), that is: the extraction was performed using non-weighted least squares (specifically the minimal residual technique), with oblique rotation (oblimin), and retaining those factors using the parallel analysis technique.

As shown in Table 6, a three-factor model was obtained that explains up to 52.4% of the variance. Regarding the first factor, the "Academic Programs", consist of six dimensions of complementary programs. Factor two comprises four items. Such items assess the underlying construct "Services and equipment", as it includes the dimensions that evaluate aspects related to infrastructure and services of the faculties and the university. Factor three is composed of two dimensions regarding "Student support", including the Tutoring Program and the Educational and psycho-pedagogical counseling program. Similarly, all the values of the internal consistency values of Cronbach's alpha and McDonald's omega are reported as "good", since all were greater than .70.

Table 6
Exploratory factor analysis of the original 12 dimensions

Original dimensions	Second-level factor		
	Academic Programs	Services and equipment	Student Support
Sections			
Tutoring Program			.748
Educational and Psycho-pedagogical Counseling Program			.531
Scholarship Program	.648		
Academic Advising Program	.581		
Student Exchange Program	.678		
Research, Cultural and Sports Activities	.662		
Promoting the Learning of a Foreign Language	.512		
Vocational training and outreach	.345		
Library Services		.754	
Computer and equipment service		.785	
Laboratories		.408	
Elements that have an impact on the teaching-learning process		.622	
Variance explained			
Self-Value	5.18	.45	.29
Explained variance (%)	21.4	19.1	11.9
Cumulative variance (%)	21.4	40.5	52.4
Internal consistency			
Cronbach's alpha	.794	.814	.790
McDonald's Omega	.797	.816	.818

Once the exploratory factor analysis stage was concluded, the next step was to analyze the main dimensions or factors that could affect the scores obtained by one of the key variables: academic performance, which is the average of the grades obtained by the participants during their studies. A multiple linear regression model was conducted for that purpose. The variable was the participants' grades, and the predictor variables were the 12 dimensions evaluated by the educational measurement instrument. Other control variables, such as sex, faculty, job, regular vs. irregular students, and study stage, were included to eliminate their effect as covariates.

Initially, it was confirmed that the assumptions of normality and homoscedasticity of the residuals were met. Once this was confirmed, the Variance Inflation Factor (VIF) was used to explore whether there is no multicollinearity between the model's variables. All FIV values were below 5 indicating no multicollinearity, which confirms that the model interpretation was appropriate.

The resulting model was statistically significant ($F_{20,924} = 21.6$; $p < .001$). Indicating that at least one factor explains 31.8% of the variability in grades. Initially, we examined the covariates, all of which were found to be significant except for employment. In other words, having a job does not significantly affect their grades. Concerning the other covariates. Because all of them were significant, it confirms the adequacy of including these variables in the model since it eliminates the effect of variables such as sex, faculty, regular vs. irregular students, and the study stage (See Table 7).

Table 7
Model of factors associated with academic performance

Predictor	beta	B _z	95% CI	
			Inf.	Sup.
Intercept	79.20			
<i>Student Support</i>				
Tutoring Program	.18	.03	-.05	.10
Educational and psycho-pedagogical counseling program	.05	.01	-.08	.09
<i>Academic Programs</i>				
Scholarship Program	.94	.15	.08	.20
Academic Advising Program	-.37	-.06	-.12	.01
Student Exchange Program	.27	.04	-.03	.09
Research, Cultural and Sports Activities	-.45	-.06	-.14	.01
Promoting the learning of a foreign language	.19	.03	-.04	.10
Vocational training and outreach	1.06	.12	.05	.32
<i>Services and equipment</i>				
Library Services	.00	-.00	-.08	.07
Computer and equipment service	-.33	-.05	-.12	.01
Laboratories	-1.06	-.20	-.27	-.02
Elements that affect the teaching-learning process	-.13	-.01	-.10	.08
Being a man	.10	.01	-.05	.07
Being irregular	-5.72	-.18	-.24	-.79

Predictor	beta	B _z	95% CI	
			Inf.	Sup.
Study Stage (Initial stage.)				
Intermediate stage	2.01	.27	.15	.49
Final stage	3.12	.24	.16	.63
Employment	.46	.09	-.06	.20
Faculty (Education)				
Law	-7.29	-1.23	-1.46	-.89
Mathematics	-4.43	-.67	-.88	-.48
Nursing	.09	.01	-.12	.13

Note. * $p < .05$; ** $p < .01$; $p < .001$

The statistically significant factors are scholarship programs, professional training and outreach, and laboratories. The first two factors are directly proportional to the grades. This means a better perception of the scholarship program and more effective professional training and outreach lead to higher average grades. On the other hand, laboratories were inversely related to the grades. That is, the lower the perception of the use and equipment of the laboratories, the higher the average grades of the participants.

Finally, the same model was applied for each faculty, indicating that there are different relevant factors across faculties. Thus, as shown in Table 8, the scholarship program and laboratories were significant for the faculty of education, while the academic advising program was regarded for mathematics. Additionally, the scholarship program was significant for the nursing faculty, but there was no significant contextual factor for the law faculty except the covariate "sex."

Table 8

Models by faculty

Predictor	Education	Law	Mathematics	Nursing
Intercept	80.02	83.75	73.76	84.23
<i>Student Support</i>				
Tutoring Program	.25	.50	.04	.07
Educational and psycho-pedagogical counseling program	.47	-1.04	1.42	.14
<i>Academic Programs</i>				
Scholarship Program	.96**	.65	.98	.71*
Academic Advising Program	-.35	-.06	-2.20*	-.41
Student Exchange Program	-.03	.11	1.66	.29
Research, Cultural and Sports Activities	-.37	-.06	-1.76	-.18

Predictor	Education	Law	Mathematics	Nursing
Promoting learning a foreign language	.36	-.03	-.08	.35
Vocational training and outreach	.98	-.15	1.77	.59
<i>Services and equipment</i>				
Library Services	-.57	1.07	2.16	-.55
Computer and equipment service	-.07	-.38	-1.56	-.24
Laboratories	-1.17	-.31	.64	-.13
Elements that affect the teaching-learning process	.49	-.54	-1.43	-.23
Being a Man	-1.49**	-2.16*	.30	4.55
Being irregular	-4.22**	--	-6.51	-3.58**
<i>Stage (Initial):</i>				
Intermediate	2.17	3.97	2.34	1.99
Final	3.97	-1.06	2.20	4.52
Employment	.56	.36	-.90	-.23
Explained variance (R^2)	31.2%	7.0%	22.8%	38.2%

Note. * $p < .05$; ** $p < .01$; $p < .001$

On the other hand, the results of the focus groups indicate that students view various contextual elements as significant and impactful on the quality of teaching and learning. These elements related to the curriculum are teacher behavior, administrative services, and infrastructure.

Concerning the implementation of the curriculum, the students indicated that, although the learning of a foreign language is important, how the institution promotes it is insufficient:

Teachers do not use English materials to support our learning. We take courses in English, but they are not related to what we learn in the classroom.

Other students added:

They do not encourage the use of second language learning skills, such as submitting assignments in English or writing in that language, however, it is compulsory to pass a level of English on a standardized test. The language teachers do not have the level of English that they want us to achieve.

The students also reported several problems with the teacher's behavior. One of these problems was showing favoritism:

Some teachers have favorites; they make exceptions for homework and other activities, but not for everyone.

In one of the focus groups, the students commented that this favoritism is for the benefit of the students of one of the two programs offered by the faculty:

Teachers generally favor the students from the first program offered by the faculty, and they do not treat us equally or grant us the same attention and dedication. We believe it is because they have the same degree as their students. Favoritism is quite evident in everything.

The way teachers organize collaborative activities in the classroom is another problem. As one student noted:

students deemed to have "high intellectual ability" refuse to work with other students thought to have "low intellectual ability", and teachers permit that behavior. This leads to an individualistic environment in the classrooms

The participants also indicated the need to improve teacher training not only in the disciplinary area but also in the humanistic area:

Professors must, not only master the content they teach, but also, they must enjoy teaching and own a relevant postgraduate degree related to the field they teach.

Other students added:

Some people feel like they are above the rest. Some teachers think they are untouchable and that they can step on us. Such attitude, as a teacher, is rather grave.

Students from one of the faculties said that teachers need to be trained as tutors;

One area in which teachers need to improve is tutoring. In our faculty, tutoring is practically non-existent.

They also stressed that the curriculum is not adapted for people with special needs:

Neither the curriculum nor the lesson plans consider the differences among students, especially those with different auditory, visual, or learning needs.

The students also added that teachers require training in the educational model:

Some teachers spend a lot of time criticizing the educational model. Teachers have no agreement on how the model should be carried out.

Some teachers do not understand the model; one says one thing, and the other contradicts it. They only confound us.

In one of the focus groups, students also mentioned that some teacher's behavior outside the classroom is inappropriate and could be considered harassment.

There is one teacher who makes romantic advances to students on Facebook. This is not right. More professionalism should be demanded from teachers in matters of civics and ethics. Their profiles on social networks are careless, they use inappropriate language and make comments unsuitable for university professors.

Regarding administrative services, students from the four faculties highlighted the problems with the Departments of Admissions, Information Technology, and the cafeteria. Regarding the Department of Admissions, they commented:

When we go to the Department of Admissions, they do not answer our questions; the staff always seems to be in a bad mood

Concerning the information technology department, they stated that:

The staff need training in their field and in dealing with students' questions. The current working schedules are unsuitable, closing early and lacking availability for afternoon shift students.

As for the cafeteria service, the participants of one of the faculties complained about its quality and cost:

The cafeteria closes very early, but we have classes until 8 pm. Class schedules and cafeteria schedules are different. We have to leave before the end of class to find something to eat, even if it is not allowed. The worst thing about the cafeteria is that it is expensive and offers low-quality food.

All students agree that a serious problem affecting their studies is transportation.

We do not have a shuttle service on campus. Sometimes, when we arrive late, some teachers do not let us enter the classroom, even though the delay is not our fault. It is because the bus service is inefficient and limited.

Other students commented:

To go to school, we must take more than one bus, and the service is inefficient. Now that the student population on campus is increasing because a new faculty is incorporated, the problem is getting worse.

Likewise, all students indicated that internet service is insufficient and limited, so it needs to be improved. They also commented on the problem of student mobility within the campus.

There is a lack of communication between the faculties; they seem to be isolated from each other. If you want to take a course at one of the faculties, they do not communicate your grades directly. We must carry out the process ourselves, and sometimes the dates do not match, and the procedures are not explained clearly. Administrative procedures are obsolete and impede mobility.

Regarding classroom infrastructure, the students stressed the need to improve ventilation in classrooms because it affects their learning:

There is no air conditioning, and due to the high temperatures, we cannot concentrate, and we start to perform poorly.

Other students added:

Chairs in good condition are not enough; the furniture is insufficient for the number of students in the classroom. There is also a need for better cleaning in the classrooms. There are not enough multimedia projectors, and many others are not working.

Students also stressed that the institution does not provide adequate access to students with special needs:

The building does not have enough ramps and requires technological resources to support students with mobility, hearing, and visual problems.

Discussion

Concerning the assessment of the different areas, it was found that what the students value the most are professional training and outreach, the promotion of learning a foreign language, and the elements that impact the teaching-learning process. For the first two aspects, it may be because the university strongly encourages learning English and its relationship with industry and the public and private sectors. For the importance of the elements that have an impact on the teaching-learning process of a foreign language, the findings are consistent with the studies of Elizalde, Olvera, and Bezies (2017) where they comment that in the evaluation of teaching, one of the strengths of foreign language teaching at the university is found in the attributes of the dimensions of teaching competencies and the personal characteristics for teaching. Although there is a contrast, other studies need to evaluate this aspect in greater detail to understand which factors may influence this process. Perhaps conducting focus groups with students and other participants can help gather their opinions.

It is important to note that none of the dimensions obtained a value lower than 2.5, which can be considered a theoretical midpoint on a 1 to 5 scale. Therefore, in general, it can be said that students have a positive view of all the dimensions evaluated by the scale.

On the other hand, individual differences were found depending on the faculty being evaluated. For instance, faculties like Mathematics view the Academic Advising Program and the support provided by their professors very positively. This feedback is likely beneficial for students studying exact sciences. These results align with the findings of Sgreccia, Cirelli, and Vital (2023), who emphasize in their study the characteristics of effective teachers and the attributes that students consider when evaluating teaching in university settings.

Another example is the Tutoring program, which is positively valued in faculties such as Education or Nursing. Undoubtedly, the above highlights that it is essential to consider the specific adaptations of the evaluated programs and dimensions that include the unique characteristics of each faculty. This evaluation is invaluable for identifying areas of opportunity that can be addressed within each faculty. The results described above coincide with the research by Martínez Clares et al. (2020) and Aguaded and Monescillo (2013). They comment on the importance of tutoring at the higher education level, emphasizing its benefits for student's academic, personal, and professional development.

Concerning the factor organization found in the dimensions, the results are interesting because the grouping makes sense. Those programs or services that support the student were grouped into one dimension; including services and equipment; and those academic programs implemented by the University. Therefore, the structure can be useful for the interpretation of the results.

Regarding the factors associated with students' achievement (grades), two things must be considered: the importance of other factors that have an impact on it and that are independent of the university and those that directly depend on the actions implemented in the university. For the former, neither gender nor employment were determining factors affecting the student's achievement since students without jobs are not different from those with jobs. Despite differences among the faculty types, this may be due to their unique characteristics.

Finally, concerning those significant factors evaluated by the instrument, whether they are associated with the student's performance, the following must be considered: none of the student support programs was found significant. While this observation is noteworthy, it may be because participation in these programs is voluntary. Those who choose to attend might use these services to ensure their performance levels are comparable to those who do not require such assistance. The above results are contrasted with the findings in the specialized literature by Obispo-Salazar et al. (2022), who highlight the importance of university support and well-being programs in the student's academic performance. Two academic programs that proved to be significant were the scholarship program and professional training and outreach. About the first one, research indicates that students from environments with limited resources often experience reduced performance. Therefore, affirmative actions for these vulnerable groups, such as scholarships, are positively associated with improved student outcomes. Many of these scholarship programs require students to maintain a certain level of academic performance. This analysis aligns with the findings in the studies by Lara Reyna (2023) and Arias and Lastra (2019). They note that good university practices enhance student admission and retention. These practices are important to motivate students to improve their performance and continue their higher education.

Conversely, professional training and outreach programs can positively impact performance. These programs promote the development of skills in students, which is reflected in their evaluations, as the university emphasizes the assessment of acquired competencies. These points are attributes that coincide with other studies found in the specialized literature (Díoses Lescano et al., 2021). The majority of students express high satisfaction with their professional training, enabling them to effectively develop both their attitudinal and academic skills.

In terms of services and equipment related to performance, only laboratories showed a negative correlation. This result is unexpected, indicating that lowest laboratory use leads to better performance. In contrast, these results are compared with the specialized literature (Flores Mejía et al., 2022; Rocha Gamez & Granados Guzmán, 2021) who say that the use of laboratories addresses a fundamental need during students' educational experiences. Laboratories facilitate the development of practical skills, promote self-directed learning, enhance competencies, and reinforce knowledge gained through theoretical study.

The differences observed in the results compared to the specialized literature may be attributed to the fact that the evaluation of laboratory activities is generally more rigorous than that of traditional classes. However, this is only a hypothesis and should be

explored in greater detail. Additionally, this factor was only significant in the Faculty of Education when a similar model was applied across different faculties.

In general, it can be concluded that each faculty has a unique context that must be addressed when implementing internal educational policies tailored to the needs of its students.

Finally, about the instrument, it was found that, in general, the results indicate that the reliability obtained by each subdimension is relatively good, with values above .70 on most scales. Only those scales of two items or less have low-reliability values. This may be because the items are few or because the items are not sufficiently correlated, so their results should be analyzed with caution.

Conclusions

The results of this study highlight that students' perceptions of contextual conditions vary significantly among the faculties evaluated, underscoring the importance of considering these differences when implementing internal educational policies. Strengths were identified in programs such as vocational training and promotion of learning a foreign language, while areas such as tutoring and using laboratories are opportunities for improvement. Furthermore, the factor structure obtained confirms the organization of the dimensions into academic programs, services and equipment, and student support, enhancing the clarity of the results.

Conversely, factors influencing academic performance indicate that scholarship programs and professional training have a positive impact. Additionally, a low perception of laboratory usage is linked to better performance, raising questions about the specific evaluation conditions related to these activities. In general, the findings confirm that contextual conditions are decisive for improving teaching practice and must be adapted to the characteristics of each faculty to maximize its effectiveness in supporting student learning.

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Conflict of Interest

The authors state that they have no conflicts of interest.

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