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Linear correlation of teaching evaluations: TESVB case

Correlación lineal de las evaluaciones docentes: Caso TESVB

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Abstract

The evaluation of teachers in higher education is a systematic and continuous process that aims to assess the performance of the teachers in the fulfillment of their functions. Applied the non-experimental quantitative method of cross-section. The sample was 11 teachers, an approximate population of 190 students who evaluated and finally the departmental evaluation by a division leader, the analyzed part corresponds in all cases of teaching. The correlation between the self-assessment and the evaluation of the students is negative and low -0.211555719, the departmental evaluation carried out by the Head of Division is the one that most correlates with the evaluation of the students and tends to make high 0.499215118, although not so significant, for a good correlation, which passes from 0.6 and store A (+) (-) 1.0, and last correlation between the teacher and the departmental evaluation is positive but lowers 0.171939862.

Evaluation, Correlation, Assessment

Resumen

La evaluación de docentes en educación superior es un proceso sistemático y continuo que tiene como objetivo valorar el desempeño de los profesores en el cumplimiento de sus funciones. aplicó el método cuantitativo no experimental de corte transversal. La muestra fue de 11 docentes, una población aproximada de 190 alumnos que evaluaron y por último la evaluación departamental por un jefe de división, la parte analizada corresponde en todos los casos de docencia. La correlación entre la autoevaluación y la evaluación de los estudiantes es negativa y baja -0.211555719, la evaluación departamental que la realiza el jefe de división es la que más se correlaciona con la evaluación de los estudiantes y tiende hacer alta 0.499215118, aunque no tan significativa, para una buena correlación, que pase de 0.6 y tienda a (+) (-) 1.0, y por ultima correlación entre la evaluación docente y la departamental es positiva pero baja 0.171939862.

Evaluación, Correlación, Valoración

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Introduction

The evaluation of teachers in higher education is a systematic and continuous process that aims to assess the performance of teachers in the fulfillment of their duties. This process is important to guarantee the quality of higher education, as well as to promote the professional development of teachers.

García and Torres (2020), investigated the evaluation systems of Higher Education, which are a set of organizations, government strategies, programs and instruments to monitor the substantive and adjective functions of Higher Education Institutions under principles of efficiency, effectiveness, transparency and accountability to society.

Iglesias *et al*. (2021), generated in their research an innovative model of teaching evaluation, which complies with principles and characteristics that identify it, puts the teacher at the center of the process, revalues their teaching practice, contextualizes it in an institution and is oriented to continuous improvement.

Pacheco *et al*. (2018), comment that it is essential to define the profile of a good teacher in an institutional context, that is, the knowledge, skills and attitudes that a teacher would ideally have to master must be defined.

Murrieta (2021), identified in their research the characteristics of higher education professors that show teaching effectiveness.

Cipagauta-Moyano (2019), state that teaching evaluation is an issue that concerns the academic community in general, whose results are used to improve processes in teaching, learning and content design, mainly.

Gómez and Valdés (2019), comment on teaching evaluation that, in general, institutions state evaluation purposes that usually do not coincide with what is evaluated and with the use made of the results.

Elstad *et al*. (2023), compared the quality of some aspects of teacher training in the Nordic countries. Scandinavian countries employ national-level surveys in higher education that provide essential information for educational authorities in each country.

These measures are used in public sector discussions about teacher education and in individual teacher education settings. The results of these measurements can be used for benchmarking.

Dong (2023), investigated the monitoring and evaluation of the quality of teaching in higher education based on big data analysis. First of all, monitoring the quality of teaching in higher education was carried out in five directions: teaching level of teachers, academic status of students, effectiveness of course learning, competence of students and employment status of teachers students.

Sudrajat (2023), comments in his research that teachers' materials, honesty, enthusiasm and IT support are factors that determine the quality of education. This study uses multiple linear regression with root mean square error (RMSE) as the dependent variable.

Gong and Wang (2023), used comprehensive fuzzy analysis to address this problem from the perspective of big data mining. In particular, it proposes a data-driven intelligent evaluation framework for teaching effect based on fuzzy comprehensive analysis. First of all, business data is timely collected from online courses as a basis, including teachers' performance, teaching contents, students' feedback.

Santiago (2023), investigated that principal leadership behaviors and teacher evaluations have been shown to influence teachers' levels of self-efficacy. However, the relationships with collective teaching efficacy (CTE) still need to be explored.

The teacher evaluation process in higher education must be fair, transparent and reliable. To do this, it is important that the process is based on clear and objective criteria. Additionally, it is important that teachers have the opportunity to participate in the evaluation process and receive feedback on their performance. In recent years, interest in the evaluation of teachers in higher education has increased. This is because the quality of teaching is recognized as a key factor in ensuring the quality of higher education.

The evaluation of teachers in higher education can have different purposes, such as:

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– Ensure the quality of higher education: Teacher evaluation can help identify teachers who are not meeting the quality standards established by the institution. This allows corrective measures to be taken to improve the quality of teaching.

– Promote professional development of teachers: Teacher evaluation can provide valuable information about teachers' strengths and weaknesses. This information can be used to provide support and guidance to teachers to improve their practice.

– Administrative decision making: Teacher evaluation can be used to make administrative decisions, such as hiring, promoting, or promoting teachers.

The criteria used to evaluate teachers in higher education may vary by institution. However, some of the most common criteria include:

– Mastery of the subject: The teacher must have in-depth knowledge of the subject he teaches.

– Pedagogical skills: The teacher must be able to design and execute effective classes.

– Ability to motivate students: The teacher must be able to motivate students to learn.

– Relationship with students: The teacher must establish a positive relationship with the students.

– Contributions to the institution: The teacher must contribute to the development of the institution.

Methodology

The non-experimental quantitative cross-sectional method was applied. The total population, the sample of 11 teachers, an approximate population of 190 students who evaluated and finally the departmental evaluation by a division head, the analyzed part corresponds to all teaching cases.

Since it is the area in which all The teachers of the Architecture program of the Tecnológico de Estudios Superiores de Valle de Bravo (TESVB) are immersed, the statistical study of the results obtained in the instruments was carried out, the data was provided by the head of the Architecture Division, for the purposes of Research and due to data privacy policies, no names are mentioned.

The data on the averages of the teacher's evaluations correspond to validated instruments, they are carried out every semester, they are found in institutional systems, only the student system contains a questionnaire that is validated by the National Technology of Mexico, the self-assessment system and the departmental one does not contain a questionnaire instrument, it is referenced to the teacher's activities according to the type of contract, subject teacher, associate professor "A", associate professor "B", associate professor "C" and full professor "A".

The statistical data were treated using Pearson's linear correlation, to infer whether there is any relationship between the different types of teacher evaluations, by students, self-evaluation and division leadership.

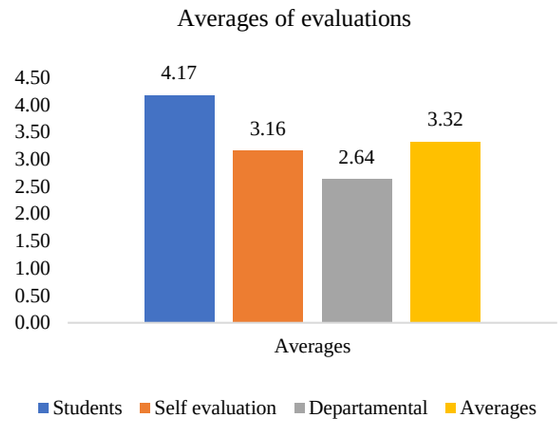
Results

As can be seen in Table 1, the student evaluation, only one decent student is below 4.00, in the self-evaluation there are three teachers who are above 4.00 and in the departmental evaluation no teacher obtains a grade of 4.00 which indicates that those who best rate the teacher are the students, followed by them in the self-evaluation and finally the division head. The rating of 4.00 is considered good. The scale of 5.0 is the maximum that a teacher can obtain in the three evaluations.

Teacher	Students	Self evaluation	Departamental	Averages
1	4.24	3.00	2.50	3.25
2	4.22	3.25	3.50	3.66
3	4.20	2.75	2.75	3.23
4	4.33	2.00	3.50	3.28
5	4.07	4.25	2.25	3.52
6	4.33	3.50	2.00	3.28
7	3.75	2.75	1.50	2.67
8	4.12	2.00	1.50	2.54
9	4.43	2.75	3.25	3.48
10	4.16	4.50	3.25	3.97
11	4.07	4.00	3.00	3.69
Averages	4.17	3.16	2.64	3.32

Table 1 Averages of the evaluation data, carried out by students, self-assessment teachers and departmental division head
Source: Self Made

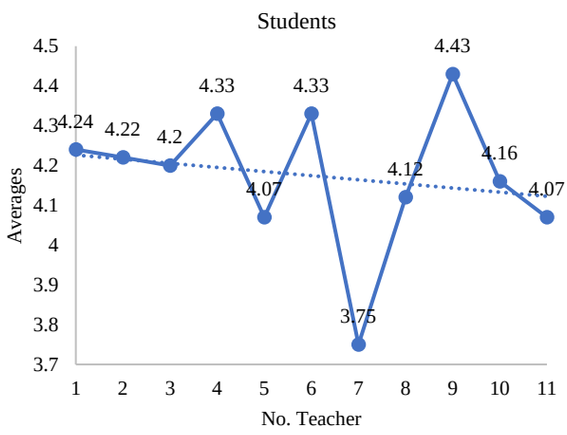
Graph 1 shows the behavior of the averages of the teaching evaluation of the three types: 1) prepared by the students, 2) self-evaluation and 3) departmental, the data are obtained per semester, from the eleven teachers analyzed.



Graph 1 Graph of the averages of the evaluations
Source: Self Made

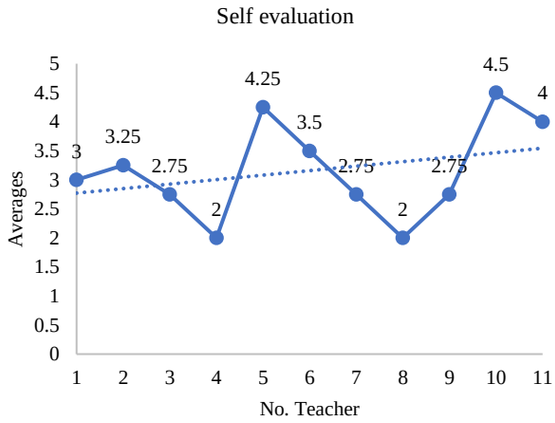
With the general averages, the students' evaluation is the highest with a value of 4.17, followed by the teacher's self-evaluation 3.16, and the lowest is that of the department head 2.64. The general average of the eleven teachers, of the three evaluations, is a value of 3.32, considered from average to good, which implies increasing 1.68 to reach the maximum level of 5.00.

Graph 2 shows the average of the students' evaluations of the teacher, resulting in 10 teachers being evaluated with a value greater than or equal to 4 points, which is equivalent to 91% of the teachers and only one teacher is below 4 points, being 9% of the total teachers.



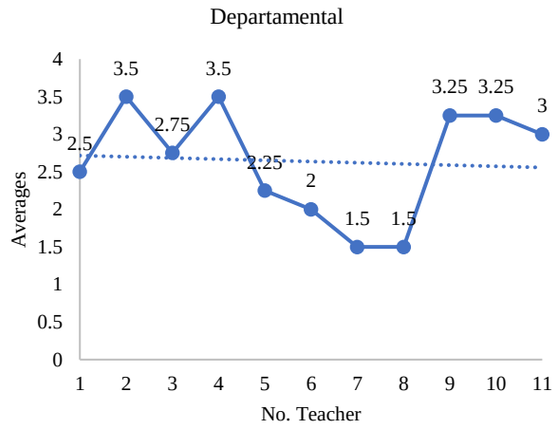
Graph 2 Graph of averages of student evaluations
Source: Self Made

Graph 3 shows the average of the teacher's self-evaluations, resulting in 3 teachers being evaluated with a value greater than or equal to 4 points, which is equivalent to 27% of the teachers, only 3 teachers obtained a higher value or equal to 3 points, being 27% of the total and 5 teachers are below 3 points, being 45% of the total teachers.



Graph 3 Graph of averages of teacher evaluations (self-evaluation)
Source: Self Made

Graph 4 shows the average of the self-evaluations of the head of vision (departmental), resulting in 5 teachers being evaluated with a value greater than or equal to 3 points, which is equivalent to 45% of the teachers and only 4 Teachers obtained a value greater than or equal to 2 points, making up 36% of the total and two teachers are below 3 points, making up 18% of the total teachers.



Graph 4 Graph of the averages of the departmental evaluations
Source: Self Made

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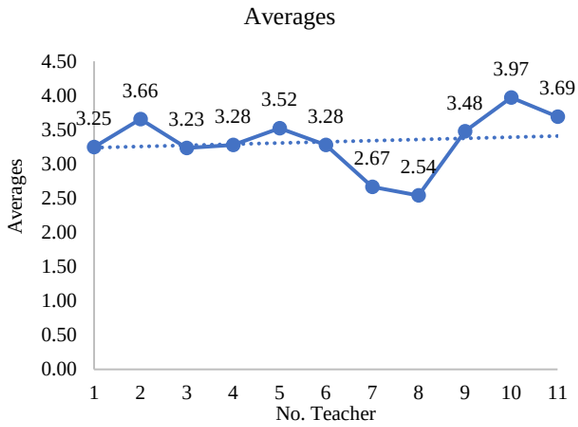
Graph 5 shows the average of the three evaluations, resulting in 9 teachers obtaining an average with a value greater than or equal to 3 points, which is equivalent to 82% of the teachers and only 2 teachers obtained an average value greater than or equal to 2 points, being 18% of the total and two teachers.



Graph 5 Graph of the averages of the three evaluations
Source: Self Made

It can be seen in Table 2 that the correlation between self-assessment and student evaluation is negative and low -0.211555719, the departmental evaluation carried out by the division head is the one that most correlates with the student evaluation and tends to make high 0.499215118, although not so significant, for a good correlation, which goes from 0.6 and tends to (+) (-) 1.0, and finally correlation between the teaching evaluation and the departamental evaluation is positive but low 0.171939862. With these results it is assumed that only the departmental evaluation, carried out by the division head, has a relationship with the evaluation of the students, tending to be significant, if one increases the other decreases.

	Students	Self evaluation	Departamental
Students	1		
Self evaluation	(-)0.21155	1	
Departamental	0.49921	0.17193	1

Table 2 Linear correlation of the evaluation averages
Source: Self Made

Conclusions

In the context of national educational policy and the quality of services offered by HEIs, a key element is the role played by teachers, hence the interest in evaluating their activity. The commitment of Higher Education Institutions (HEIs) consists of fulfilling with quality the functions that society has entrusted to them.

In Mexico, the push for evaluation occurred at the end of the eighties and beginning of the nineties, so HEIs have had the challenge of achieving relevance and equity through the analysis and evaluation of their dependencies and its members; It is then that, from that moment on, evaluation was established as a strategic action and as a means to improve the quality of education.

Recognition of the complexity of teaching is essential when trying to venture into its evaluation, since assessment implies a precise idea of what it is to teach and learn in a given context. If we consider the various situations in which teaching and learning are carried out (class, seminar, laboratory, field practices, etc.), it is difficult to think of accepting the same way of evaluating what happens in each of them.

The evaluation of the effectiveness of teaching is an aspect that is considered fundamental in almost all HEIs; Determining the quality with which various teaching functions are carried out is essential to making the variety of academic and administrative recommendations and decisions. It also provides feedback to teachers, which can have a direct influence on their self-image and professional satisfaction. This allows establishing a climate that provides information about the institutional commitment to professional improvement and the confidence that each member of the teaching staff can make a valuable contribution to the achievement of shared goals.

Educational quality, with an obsolete, teaching evaluation, are values (numbers), to which a qualitative part of excellent, good, average, lacking to achieve competence, of the rubric is assigned. In the decentralized technological HEIs, there are no educational research centers, in their organization chart, much less, teacher pedagogical training, in the professional part, little is updated for the teacher, with courses that do not last more than a week, of 30 hours, with trained instructors, there is no short, medium and long-term training plan and program.

Teachers lacking any pedagogical training, teaching skills, only with intersemester courses, and self-taught, are trained in the discipline of teaching, so important in the teaching-learning process.

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A training plan and program must be generated with teaching competencies, so that the evaluations with the appropriate instruments for each context are as accurate and close to the reality of each teacher.

On the other hand, the students are the ones who best evaluate the teacher, since they are the ones who are in a continuous learning process with the teacher. The next best evaluated are the teachers in their self-evaluation, carried out with a critical sense, not reaching a range and very good percentage and finally the head of division in the departmental evaluation is the one who evaluates the teacher, in the strictest sense and adherence to institutional regulations, which results, he is the one who evaluates the most low grades, which leads to think that it is not there, in continuous communication and accompaniment of the teacher.

From the above mentioned, a comprehensive teaching evaluation is needed, which includes all the quantitative and qualitative variables, to generate a more general approximation of teaching competencies, including all participants in this very valuable process, since, like the Students, division heads and teachers are human beings.

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