

Academic Standards and Educational Quality of Teachers at a Public University

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Abstract

The practical improvement of educational processes, including higher level ones, has as an important precedent critical reflection and the establishment of solid academic norms with scientific bases. The present investigation was raised as a general objective: To determine the effects of academic standards and their relationship with teaching quality at the Micaela Bastidas de Apurímac National University. For which a questionnaire was applied to a total of 256 professors, with the objective of verifying the degree of knowledge of the professors about the academic norms that affect the characteristics of the curricular quality of the University. In addition, a consultation was carried out with experts that was processed with the Entropy method. The main results found were that there is an average level of knowledge of teachers regarding academic standards, represented by 44.1%. Teachers have a direct participation in the normative technical process in 70.3%. As conclusions, the degree of knowledge of the academic norms was determined, that significantly affect the characteristics of curricular quality. It was identified that the use of academic standards significantly affects the technical conditions of academic quality.

Keywords: *academic standards, teacher quality, principles of didactic quality, Entropy.*

INTRODUCTION

Universities have two main missions: to be a place that delivers knowledge and teaches students how to tackle real-life professional problems, and to deliver graduates who are well-suited for modern industry. With these missions in mind, the student is the raw material that becomes a product, and the real customer is the society in which the product is delivered (Quimi Franco, 2019). The search for quality in teacher education has become a topic of interest, because it is recognized that excellent instruction is not possible without teachers who are also of high quality; Therefore, improving their training is essential to face today's educational challenges (Peña, 2020).

In this way, the assumption is that, in the face of a teaching staff prepared under standards of excellence, the better the performance in their professional work will be and in

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addition the quality of education in general. At the international level, there is a growing concern to strengthen teacher training and ensure the quality of teachers entering the profession (Gabalán-Coello & Vásquez-Rizo, 2019). For its part, the United Nations (UN) proposes as two of its Sustainable Development Goals the quality of education and decent work and economic growth, setting as a goal to increase the number of professionals trained to perform in the world of work; as well as providing education with qualified teaching personnel capable of providing students with the knowledge, attitudes and skills to function in society (Mendoza, 2022).

The main function of the university is academic activity, therefore the organizational structure and internal processes must be designed to facilitate and privilege this activity, guaranteeing administrative efficiency and effectiveness (Ramos Castro et al., 2020). Reflective pedagogical practice is the most appropriate alternative to achieve this purpose, since it enables the training of autonomous, critical, reflective teachers who are aware of their responsibility in the comprehensive training of the students they serve in the country's regular basic education educational institutions. It is a powerful tool to encourage critical reflection on and on pedagogical practices, conceptions about them and education itself, as well as the characteristics of the social reality that shapes the educational environment (Moraga, Félix, & Díaz, 2020).

Under the title of norm, it is called any law or rule that is established to be fulfilled by a specific subject in a specific space and place. Norms are the patterns of social ordering that are established in a human community to organize the environment. behaviour, attitudes and different ways of acting in such a way as not to hinder the common good (Quintero, 2020). The Academic Standards of Higher Education are the instrument that regulates the development of the academic activity of this level of national education, under a dynamic conception of the formative processes (Gabalán-Coello & Vásquez-Rizo, 2019). Hence, educational reforms are a crucial factor in current teaching practice due to the introduction of rules that regulate the university experience (Sánchez García, Inga Arias, Auria Burgos, Triana Palma & Estupiñan Loor, 2022).

Efforts to establish common international parameters for the management of educational organizations took on a new lease of life in 2014, when the Technical Committee of the International Organization for Standardization ISO/PC 288 began to develop an ISO standard aimed at implementing specific management systems for educational organizations. The International Organization for Standardization itself states that the development of this standard contributes to the achievement of the following objectives of the 2030 Agenda:

- Ensure inclusive, equitable and quality education, and promote lifelong learning opportunities for all.
- Reduce inequality within and between countries.
- Making cities and human settlements inclusive, safe, resilient and sustainable (Guerra Breña, Ramos Azcuy, & Roque González, 2020).

Espínola and Silva (2009), cited by (Yacsahuanca et al., 2022), indicate that: "The quality of education is managing resources according to the needs and characteristics of the institutions, which positively affects educational management practices, teaching-learning processes and the sense of belonging of the entire educational community, generating identity, commitment and responsibility with the learning processes and with the goals of student achievement".

The quality of education is an essential element for the development of society, and institutions have a social responsibility to ensure it. In addition to academic training, institutions can contribute through social projects, research and university extension, which allows them to have a positive influence on society (Brittany, Azcuy, & González, 2020). Educational quality is therefore a key element in ensuring a quality education that

has a positive impact on students' personal and social development. Continuous improvement of the quality of education is not only important for educational institutions, but also for society at large, as it can influence the future of communities and the country as a whole (García & Castro, 2023).

The objectives of this research were: To determine the effects of academic norms and their relationship with teaching quality at the Universidad Nacional Micaela Bastidas de Apurímac. The following specific objectives were proposed: to verify the degree of knowledge of the teachers about the academic standards that affect the characteristics of the curricular quality of the Universidad Nacional Micaela Bastidas de Apurímac. To analyze the level of participation of teachers in the technical process of the academic standards that affect the principles of didactic quality of the Universidad Nacional Micaela Bastidas de Apurímac.

MATERIALS AND METHODS.

The research design is non-experimental with an explanatory, cross-sectional design. The present study met the characteristics in the type of explanatory research; to be able to manage it in relation to the study variables: Academic Standards and Teaching Quality at the Micaela Bastidas National University of Apurimac (UNAMBA).

Theoretical methods: The method of analysis and synthesis was used for the documentary review, using it to detail the necessary information about the phenomenon studied. The inductive-deductive method allowed the authors to establish and make contributions, carrying out a logical analysis of the academic norms and their impact on the quality of the professors of the University under study.

Population and sample: The universe of the study population is made up of the total number of teachers who provide services at UNAMBA, both appointed and contracted. The sample is representative, with a figure of 256 people to whom the survey was applied.

The following formula was used to calculate the sample:

$$n = \frac{N^* Z_{\alpha}^2 p^* q}{d^2 * (N-1) + Z_{\alpha}^2 p^* q} \quad (1)$$

Calculation of the optimal sample size: the estimation of proportions was performed under the assumption that $p=q=50\%$.

Maximum Allowed Margin of Error: 5.0%

Population Size: 761

Size for 95% confidence level 256

Techniques and instruments:

The Survey: is one of the most widely used techniques in educational research, it is composed of a series of specific techniques aimed at collecting, processing and analysing information about the objectives of the research. The defining feature of the survey is the use of a questionnaire to collect the required data. The characteristics it describes and measures are properties known as variables.

Elaboration of the Questionnaire: the questionnaire that was applied was used with the intention of knowing the degree of knowledge of the teachers about the academic standards. In addition, the technique of Entropy was used.

Entropy Method: This method was proposed by Zeleny in 1982. It assumes that the relative importance of a criterion must be proportional to the amount of information intrinsically provided by all the alternatives to that criterion. The greater the diversity in

the evaluations (values) of the alternatives, the greater the importance of this criterion in the final decision, since it has the greater the power to discriminate between the alternatives. The method measures the diversity of a criterion, through entropy. The calculated entropy is all the greater the more similar the evaluations of the alternatives considered (Bernal Romero & Niño Sanabria, 2018; Chérrez Troya, Martínez Gómez, Peralta Zurita, & Llanes Cedeño, 2018; Vaca, Martínez, & Leguísamo, 2020).

A commitment weighting can lead to comprehensive decision-making: it allows the aggregation of a decision-maker's subjective preferences and objective weights, calculated from the information intrinsically provided by the data. A criterion loses its discriminatory power when the evaluations of the alternatives to it are very similar. This method makes it possible to assess this loss of discrimination and to define the objective weighting of the criteria. The entropy method does not support evaluations with values less than or equal to zero (Bernal Romero & Niño Sanabria, 2018; Chérrez Troya et al., 2018; Vaca et al., 2020). For this article, the following algorithm is proposed:

1. Creation of the Decision Matrix
2. Normalize the values of each of the criteria by the sum

The goal of normalization is to obtain dimensionless values from different criteria in order to make comparisons between them. Equation 2 is used for the calculation of the normalized decision matrix P_{ij} .

$$P_{ij} = \frac{X_{ij}}{\sum_{i=1}^m X_{ij}} \quad (2)$$

3. Calculation of the Entropy of each criterion with the use of the following equations:

$$E_{ij} = -k \left(\sum_{i=1}^m p_{ij} \ln(p_{ij}) \right) \quad (3)$$

$$k = \frac{1}{\log(m)} \quad (4)$$

Where k = is a constant that guarantees $0 < E_{ij} < 1$ and m is the number of alternatives.

4. Calculation of the diversity of each criterion using the equation:

$$D_j = 1 - E_j \quad (5)$$

5. Calculation of the normalized weight of each criterion W_j using the equation:

$$W_j = \frac{D_j}{\sum_{i=1}^m D_j} \quad (6)$$

Questionnaire for teachers:

1. Are you aware of the academic rules (Statute, Institutional Strategic Plan and internal regulations) by which your University is governed?
2. What is their level of involvement in the technical normative process?
3. How often do you make use of academic and administrative standards?
4. Are UNAMBA's managers broadly aware of academic and administrative standards?

5. What is your level of participation in the University's technical regulatory process?
6. Is the University's curriculum and content updated in line with the Institutional Strategic Plan and technological changes?
7. Are the principles of didactic quality complied with in the teaching-learning process?
8. Do you consider the use of academic standards for educational teaching quality to be satisfactory?

RESULTS.

The collection of information is also called fieldwork, which consists of applying the survey to the selected sample. The most important recommendation is to establish a positive initial relationship with the people to be questioned in writing, through a friendly presentation of the content of the survey and the importance of knowing the opinions of the interviewees. The results of this survey are set out in tables below:

Table 1. Teachers' level of knowledge about academic standards.

Category	Frequency	%
Nothing	8	3.1%
Little	83	32.4%
Middle	113	44.1%
A lot	10	3.9%
Totally	42	16.4%
TOTAL	256	100.0%

Source: Survey of teachers. Note: Authors' own elaboration.

The results show that the majority of UNAMBA teachers are regularly (44.1%) aware or little (32.4%) about academic standards and the lowest number of teachers expressed that they are aware (3.9%) and fully aware (16.4%) regarding the standards. In other words, there is a lack of greater dissemination of the norms that govern the destiny of the university.

Table 2. Level of participation in the technical normative process.

Category	Frequency	%
No	12	4.7%
Innuendo	64	25.0%
Direct	180	70.3%
TOTAL	256	100.0%

Source: Survey of teachers. Note: Authors' own elaboration.

The majority of professors say they have a level of direct participation (70.3%) in the university's technical regulatory process. Meanwhile, a quarter of the faculty who provide

services to the university participate indirectly and only 4.7% of the faculty participate neither directly nor indirectly in UNAMBA's normative process. It is necessary for all university stakeholders to participate in the approval of the Institutional Strategic Plan, in the approval of the Institutional Operational Plan, in the approval of the new Institutional PDI and in the plan for the implementation and operation of the Technical Cooperation. Likewise, they must participate in the approval of rules for austerity, rationality and transparency in spending, the approval of the Draft Budget for presentation to the Ministry of Economy and Finance, in the permanent design of the actions and strategies framed in the Institutional Educational Project for the achievement of the objectives set and in the systematization of actions leading to strategic alliances.

Table 3. Frequency of use of academic and administrative standards.

Category	Frequency	%
Never	3	1.2%
Occasionally	10	3.9%
Periodically	38	14.8%
Often	77	30.1%
Permanent	128	50.0%
TOTAL	256	100.0%

Source: Survey of teachers. Note: Authors' own elaboration.

The results show that half of the teachers make use of the academic and administrative standards permanently, that is, they are already applying these standards; In addition, 30% of teachers apply academic standards frequently. Although there are teachers who make use of the standards periodically, occasionally and almost never; Therefore, it is suggested that the senior management of the University disseminate the standards at all levels of the organization, making use of all internal means of communication, in order to raise the level of academic quality and services, which will allow it to greatly strengthen institutional development and growth in the medium and long term. to achieve its consolidation and permanence over time.

Table 4. Level of knowledge of academic standards on the part of those responsible for management at the university.

Category	Frequency	%
Definitely not	31	12.1%
Probably not	43	16.8%
Undecided	19	7.4%
Probably yes	125	48.8%
Definitely yes	38	14.8%
TOTAL	256	100.0%

Source: Survey of teachers. Note: Authors' own elaboration

According to the results of the fieldwork, the opinions of the professors have been collected, where it can be seen that those responsible for the management of the university probably do (48.8%) know the academic and administrative rules, while 14.8% (definitely do) know it extensively. However, a considerable proportion of professors express that the administrators are not very informed, while others doubt whether the university has academic and administrative standards. According to the results, it is suggested that both academic and administrative norms should be disseminated and widely known by all instances or areas of the university, in order to raise the level of services and quality, to acquire greater competitiveness in this stage of the liberalization of markets and the globalization of knowledge. which will allow it to consolidate its institutions.

Table 5. Level of participation in the technical normative process.

Category	Frequency	%
No	12	4.7%
Innuendo	64	25.0%
Direct	180	70.3%
TOTAL	256	100.0%

Source: Survey of teachers. Note: Authors' own elaboration.

The majority of professors say they have a level of direct participation (70.3%) in the university's technical regulatory process. Meanwhile, a quarter of the faculty who provide services to the university participate indirectly and only 4.7% of the faculty participate neither directly nor indirectly in UNAMBA's normative process. It is necessary for all university stakeholders to participate in the approval of the Institutional Strategic Plan, in the approval of the Institutional Operational Plan, in the approval of the new Institutional PDI and in the plan for the implementation and operation of the Technical Cooperation. Likewise, they must participate in the approval of rules for austerity, rationality and transparency in spending, the approval of the Draft Budget for presentation to the Ministry of Economy and Finance, in the permanent design of the actions and strategies framed in the Institutional Educational Project for the achievement of the objectives set and in the systematization of actions leading to strategic alliances.

Table 6. Updating of the curriculum and contents according to the Institutional Strategic Plan and technological changes.

Category	Frequency	%
Definitely not	75	29.3%
Probably not	25	9.8%
Undecided	48	18.8%
Probably yes	73	28.5%
Definitely yes	35	13.7%
TOTAL	256	100.0%

Source: Survey of teachers. Note: Authors' own elaboration.

The field results show that UNAMBA does not update the curricula and contents according to the speed at which changes occur, that is, they definitely do not (29.3%) update it, while others categorically state that they probably do (28.5%) and definitely if (13.7%) they update it according to the institutional strategic plan and according to technological changes. As already mentioned, curricula must be flexible to change, to ensure the quality of the curriculum design, the quality of the output-results, the quality of the process-function, and the quality of the organizational process. The flexibility of the curricula will allow for content in line with the national and international reality, which will allow the training of highly competitive professionals at a global level, capable of adapting to any reality or circumstance, not only nationally but internationally.

Table 7. Compliance with the principles of didactic quality in the teaching-learning process.

Categories	Frequency	%
Doesn't comply	76	29.7%
If you meet	180	70.3%
TOTAL	256	100.0%

Source: Survey of teachers. Note: Authors' own elaboration.

Didactic resources as elements that can contribute to providing students with information, techniques and motivation that facilitate their learning processes. The didactic strategy with which the teacher intends to facilitate student learning, made up of a series of activities that contemplate the interaction of students with certain contents. The didactic strategy must provide students with motivation, information and guidance to carry out their learning (Gabalán-Coello & Vásquez-Rizo, 2020).

The results show that UNAMBA complies (70.3%) with the principles of didactic quality in the teaching-learning process, while 29.7% do not. That is to say, the student (who must learn) must not behave as a spectator, he must be active and striving, doing and experimenting, reflecting and making mistakes, learning from others and with others.

Table 8. Feasibility of the application of academic standards and their impact on the quality of teaching education at the University.

Category	Frequency	%
Very satisfactory	128	50.0%
Satisfactory	90	35.2%
More or less satisfactory	21	8.2%
Unsatisfactory	12	4.7%
Very unsatisfactory	5	2.0%
TOTAL	256	100.0%

Source: Survey of teachers. Note: Authors' own elaboration.

The results show that the application of academic standards has a positive impact on the quality of teaching at the University, they were more or less satisfactory in 8.2%, satisfactory in 35.2%, and very satisfactory in 50.0%, which confirms that the application of the academic standards to which reference has been made is very useful for the teaching quality of the University.

In addition, an expert consultation was carried out, through a brainstorming session for each target group, to which the multi-criteria decision method Entropy was applied. From the brainstorming, the following aspects related to academic standards in the quality of teacher education were identified:

1. They develop greater capacity for discipline, punctual and regular assistance.
2. They ensure optimal hygiene and health conditions.
3. They promote respectful treatment of students and teachers.
4. Respect the dignity and rights and duties of any person within schools.
5. They guarantee an inclusive, equitable and quality education, where people's rights to education, at any stage of their lives, are respected.
6. They make it possible to reduce inequality within and between countries. Putting into practice basic bioethical principles.
7. They demand better teacher preparation to carry out quality teaching and learning processes.
8. They raise the quality of the University, favouring the adaptation and better application of new and modern information technologies adapted to the needs of students.

For the processing of the method, the following auxiliary data will be used:

- Number of experts=8, $\log 8=0.90309$
- To work with a 95% confidence level, the parameters are: $P=0.02$ $K=3.8416$ $I=0.01$ $k=1.1073093$

Table 9. Entropy method. Weighted Matrix

	P1	P2	P3	P4	P5	P6	P7	P8
A1	0.101	0.118	0.142	0.154	0.142	0.137	0.143	0.173
A2	0.116	0.118	0.148	0.156	0.123	0.161	0.156	0.143
A3	0.083	0.073	0.102	0.108	0.095	0.130	0.090	0.119
A4	0.107	0.099	0.112	0.121	0.113	0.130	0.118	0.131
A5	0.095	0.154	0.174	0.174	0.179	0.196	0.188	0.196
A6	0.136	0.142	0.150	0.171	0.167	0.154	0.180	0.208
A7	0.107	0.096	0.088	0.097	0.117	0.117	0.111	0.103
A8	0.153	0.128	0.156	0.154	0.144	0.172	0.178	0.168

Total	516	586	501	455	486	454	467	428
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Source: expert consultation. Note: Authors' own elaboration.

Table 10. Entropy method. Calculation of E.g.

	P1	P2	P3	P4	P5	P6	P7	P8
A1	-0.100	-0.109	-0.120	-0.125	-0.120	-0.118	-0.121	-0.132
A2	-0.109	-0.109	-0.123	-0.126	-0.112	-0.128	-0.126	-0.121
A3	-0.090	-0.083	-0.101	-0.104	-0.097	-0.115	-0.094	-0.110
A4	-0.104	-0.099	-0.106	-0.111	-0.107	-0.115	-0.109	-0.116
A5	-0.097	-0.125	-0.132	-0.132	-0.134	-0.139	-0.137	-0.139
A6	-0.118	-0.120	-0.123	-0.131	-0.130	-0.125	-0.134	-0.142
A7	-0.104	-0.097	-0.093	-0.098	-0.109	-0.109	-0.106	-0.102
A8	-0.125	-0.114	-0.126	-0.125	-0.121	-0.131	-0.133	-0.130
Ex	-0.937	-0.950	-1.024	-1.055	-1.030	-1.085	-1.064	-1.097

Source: expert consultation. Note: Authors' own elaboration.

Table 11. Entropy method. Calculation of weights.

Ex.	Dj	Wj
1.005	-0.005	0.020
0.956	0.044	-0.170
0.996	0.004	-0.017
1.042	-0.042	0.163
1.034	-0.034	0.131
1.075	-0.075	0.292
1.061	-0.061	0.238

1.089	-0.089	0.344
	-0.258	

Fountain: Consult experts. Note: Authors' own elaboration.

After the application and analysis of the Entropy method, it was obtained as a result of greater significance that the use of academic standards has a high value for the quality of education and teaching and the University. They promote respect for the dignity and rights and duties of any person within schools. In addition, they raise the quality of the University, favouring the adaptation and better application of new and modern information technologies adapted to the needs of students. For this reason, the following is proposed: to achieve a greater integration of teachers in the processes related to the improvement in terms of knowledge of academic standards and their correct application. Having as its main premise the quality of the future professionals who are being trained at UNAMBA.

DISCUSSION.

- Research shows that when the system of academic standards is properly used in the teaching and learning processes, the level of student learning achievement is raised.
- The work serves to demonstrate that the system of academic standards has an impact on teaching quality; Professors say that the dissemination of academic standards occurs throughout the institution on a frequent basis.
- Regarding educational training, it is the training and specialization of teachers through the framework of education, science and culture, achieving educational quality and training university students with solid information through learning and teaching.
- University education faces multiple challenges today, one of them is to respond and have a positive attitude to profound social, cultural and academic changes; This is being done through the use of updates to the curriculum and content in accordance with the institutional strategic plan and technological changes, taking into account that the employment status of the teacher is that of appointment. Therefore, it has a better quality in teaching conditions, complying with the principles of didactic quality in the learning-teaching process; applying the academic and administrative regulations of the Universidad Nacional Micaela Bastida de Apurímac.
- The level of participation in the technical normative process expresses a high percentage, since teachers express their direct participation in achieving the objectives set and in the systematization of actions leading to achieving strategic alliances.

CONCLUSIONS.

After reviewing the bibliographic data and the results of the survey, it is concluded that academic standards have a significant relationship in the improvement of teaching quality at the Micaela Bastidas National University of Apurimac. It was determined that academic standards influence the achievement of the quality of students' professional education. In the same way, they influence the permanent improvement of the comprehensive curriculum that leads to a global education.

The degree of knowledge of academic standards, which have a significant impact on the characteristics of curricular quality, was verified. Because it allows the academic system

to be applied effectively, improving the logistical control of all its human, material and financial resources, in the execution of the academic quality of the university.

The level of participation in the technical process of academic standards significantly influences the principles of didactic quality of teachers. This is evidenced in the surveys that show a good level of the profile of the graduates, of the professional schools, of the Micaela Bastidas University, which express the special characteristics that satisfy the demands of the labor market translated into skills, abilities, personality traits and level of academic training.

In the same way, it was identified that the use of academic standards has a significant impact on the technical conditions of academic quality. The continuous improvement of quality depends on the levels of decisions and the demands to create favorable conditions, pedagogical facts, scientific research, social projection and a great understanding of the university phenomenon, an institution committed to society.

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