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Perception of educational quality in university students. Lessons for post-COVID educational scenarios

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Abstract

In this research, a study of the perception of educational quality was carried out in fourteen Public Licensed Universities in the northern, southern, central and eastern zones of

Peru in Social Sciences, Health Sciences and Engineering. The motivations for this study arose from the need to answer questions such as: does the perception of quality that students have of the university to which they belong depend on the program of study they belong? , does it depend on the program of study to which they belong? and, above all, how is the perception of educational quality formed in students? Data collection was carried out through the application of an instrument made up of 46 questions, divided into three main pillars: research, teaching performance and infrastructure. Our results showed that students in Health Sciences programs reported on average a higher perception of quality while Engineering students were the most critical. The physical infrastructure of the institution to which they belong is among the aspects least valued by students when getting an idea of educational quality, while the most valued aspects are related to teaching pedagogy, continuous evaluation and research orientation.

Keywords

Educational quality, teaching innovation, student perception, COVID-19.

Introduction

What is happening in Higher Education today? Since the World Health Organization announced on March 11, 2020 that the COVID-19 disease would become a pandemic, the world practically came to a standstill. There were major changes in people's lives, in health, in the economy and certainly also in education. The educational sphere was affected at all levels and higher education was not exempt from that. As a result of COVID-19, universities face the important challenge of finding themselves and rethinking their processes according to the changes occurring in society.

Educational systems around the world needed to accommodate the teaching and learning process to current educational trends. This is the way to be able to provide an effective and timely response in the training of high-quality professionals, as demanded by society (Torres et al., 2021). "In times of crisis, social isolation and confinement, moving from face-to-face education to virtuality has meant a new challenge for most higher education institutions" (Reyes & Quiróz, 2020). With the unexpected suspension of face-to-face classes, it became clear that the magnitude of the new challenge exceeded the available resources, both physical, technological and human (Velázquez, 2020).

More than two years after the beginning of COVID-19, it is interesting to reflect on the organizational and pedagogical modifications that have been implemented in educational institutions. In higher education, many of these modifications have been implemented in a rapid and improvised manner in response to the need to guarantee the continuity of studies. A great concern arises then about the effect that this complex scenario may have on the quality of education, especially in societies where the digital divide creates marginality among students with fewer resources. The lack of pedagogical tools and competencies in

teachers who were not trained for e-learning environments is another point of attention worldwide (Gil, Lominchar, & Pucha, 2021).

What can be done to deliver quality education despite the situation imposed by COVID-19? Several experts agree on the fact that motivating students to find a logic in what they do and why they do it, will allow us to increase satisfaction with the quality of the process, despite the lack of face-to-face interaction between teacher and students. Medina (2015) assures that it is not only influencing motivation, but also emotions, feelings and improving students' self-esteem. For his part, Echeita (2020) argues that the above is closely linked to the meaning given by students to the interactions that occur in the educational context.

In the current context, students value as Educational Quality aspects such as: the increased demand in the online modality and the rigor of the evaluations (Gil et al., 2021). Cañadas (2020) found that applying a formative evaluation has great acceptance, because the qualification based on obtaining greater learning and the awarding of a grade as the end of the process are banished. The educational process is strengthened if there is job satisfaction among teachers, knowledge transfer is more effective (Pedraza Melo, 2020). "Moving from the face-to-face to the virtual implies deploying good practices in virtual learning environments. To this end, the planning of curricular activities must be meaningful for students, inviting student involvement, the treatment of diversity and the collaborative and cooperative participation of all" (Reyes & Quiróz, 2020).

Students recognize the value of internal or external institutional evaluation processes as a way to improve educational quality at the university. "University service is the responsibility and commitment of all its actors, however, it is the strategic level of the institution that is called to make decisions and take timely actions to work on the development of a service culture, through specific policies that motivate a service of excellence, to minimize the gap that some students manifest between the expected service and the perceived service" (Orna & Martínez, 2020).

Despite, the guidelines that some academics have already taken the initiative to make, in a scenario of uncertainty and in some cases of improvisation, it is necessary to have a scientific approach to the problem of educational quality. Studies of students' perception of educational quality are presented as a plausible alternative to guide decision making in a changing environment. However, quality is a difficult variable to measure, because it implies the manifestation of people's subjectivity, since they are the authorities in determining the degree of satisfaction felt or achieved when consuming a certain good or service (Montenegro Ordoñez, 2020).

The present work revolves around a study of the perception of educational quality in Peruvian universities. The motivations for this study arose from the need to answer questions such as: does the perception of quality that students have of the university to which they belong depend on the program of study to which they belong? does it depend on the program of study to which they belong? and, above

all, how is the perception of educational quality formed in students? Our results have multiple practical applications and we are sure that they will serve as a guide to decision makers not only in the short term, but above all to establish post-COVID-19 strategies and rethink the Peruvian university.

Methodology

Study design

The research was conducted in 14 Public Licensed Universities in the northern, southern, central and eastern zones of Peru. The research was descriptive with a non-experimental quantitative approach.

The study population consisted of students in the IX and X cycles of Social Sciences, Health Sciences and Engineering of the universities mentioned above. The sample was determined by the non-probabilistic method of convenience, using as a selection method the possibility of access to the student. In this way, the sample was composed of 1288 students.

Data collection instrument

The data collection instrument used consisted of 46 questions, divided into three main pillars: research, 12 questions; teaching performance, 22 questions; infrastructure, 12 questions. Each participant responded to the 46 questions according to a perception scale that measures the frequency with which the statements of the questions are verified in the educational institution:

- 4 – Always
- 3 – Frequently
- 2 – Sometimes
- 1 – Never

The wording of the 46 questions is available in the supplementary material accompanying this publication.

Statistical analysis

The data collected through the instrument designed for this purpose were tabulated and analyzed using the statistical software IBP SPSS v25. In order to facilitate the analysis of the data, a variable called 'Educational quality' was created in which the sum of the values assigned by each participant to each of the 46 questions was collected. To verify whether the perception of educational quality varies according to the higher education institution to which the students belong, the non-parametric Kruskal Wallis test was used to compare the ranges of the values of 'Educational quality' and the variable 'University' was used as a factor. The same statistical analysis was performed to check whether the type of study program the students take influences their perception of the educational quality of the institution to which they belong.

RESULTS

Impact of the educational institution on students' perception of quality

Our results showed that there are significant differences in students' perception of educational quality among the different universities (p-value = 0.000 for the Kruskall Wallis test). Figure 1 shows the distribution of the values of the variable 'Educational_quality' among the different institutions.

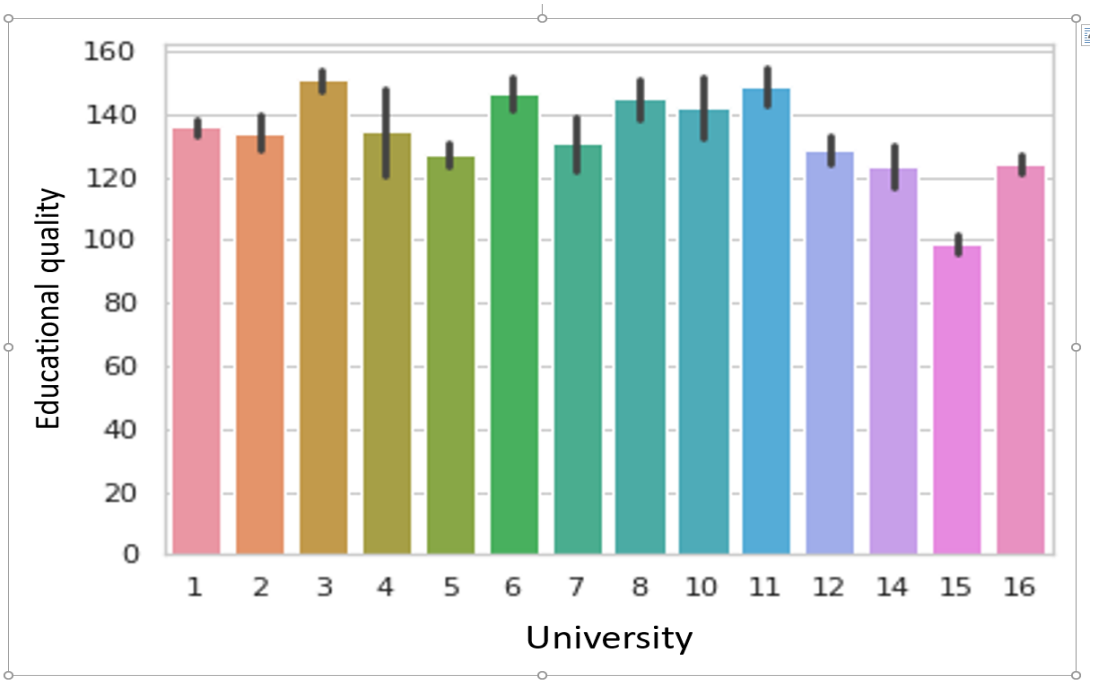

Figure 1. Distribution of the total perception of educational quality according to the university to which the students belong

The values of the variable 'Educational_quality' are shown, which corresponds to the sum of the values assigned by each participant to each of the 46 questions. Each bar corresponds to the mean value of the responses of all students belonging to the same university. The standard deviation of the values of the variable 'Educational_Quality' is shown.

Influence of the type of study program on students' perception of educational quality

Figure 2 shows the relationship detected between the type of study program taken by the respondents and their perception of educational quality at the institution to which they belong. Statistical analysis of the data shown in Figure 2 will yield a significant influence of the program of study on the perception of educational quality (p-value = 0.000 for the Kruskall Wallis test). Students in Health Sciences programs reported on average a higher perception of quality while Engineering students were the most critical.

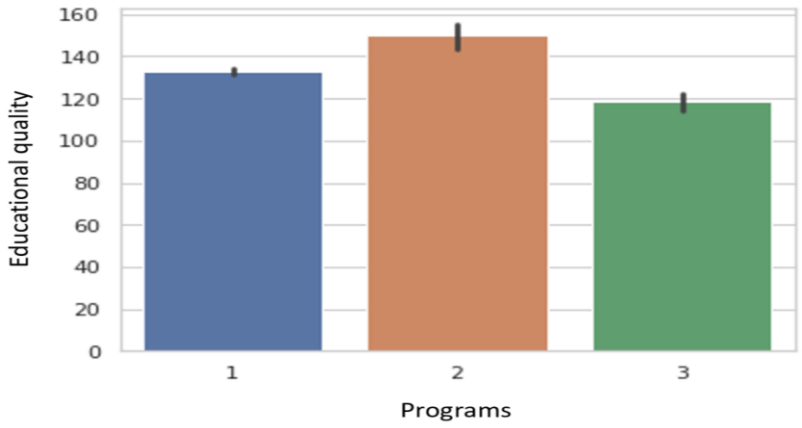

Figure 2. Influence of the program of study on the perception of educational quality in students from different universities.

The study programs considered were: 1 - Social Sciences; 2 - Health Sciences; 3 - Engineering. The standard deviation of the values of the variable 'Educational_quality' is shown.

Once we verified that both the institution to which they belong and the program of study they study influence the students' perception of educational quality, we focused on seeing which are the factors most and least valued by the students when it comes to forming this perception.

Correlation between student responses

Figure 3 shows the correlation matrix between the responses to the 46 questions and with the summary variable 'Educational quality'.

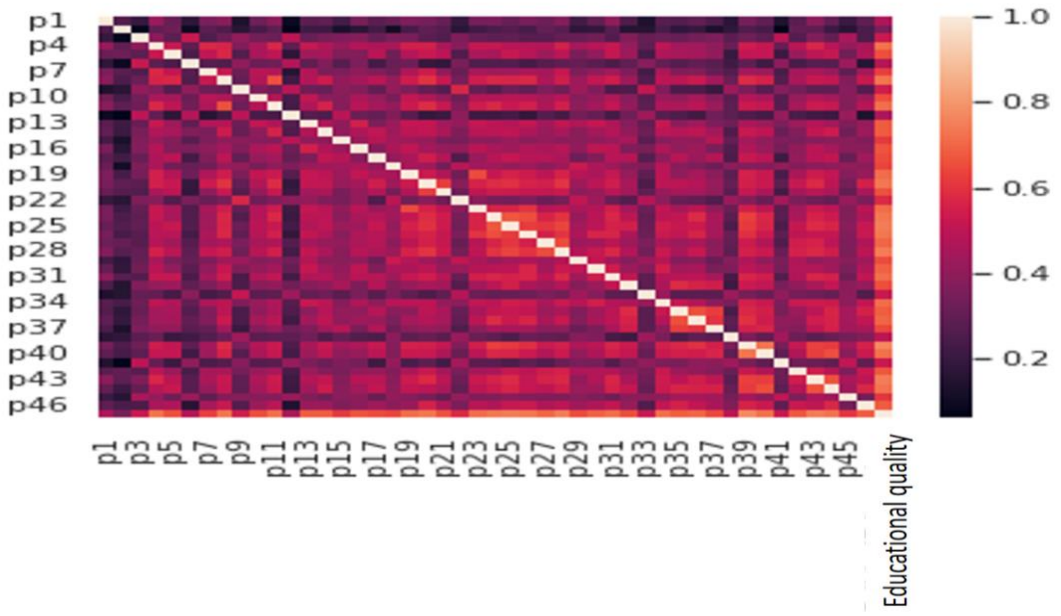

Figure 3. Correlation between the responses to the 46 questions and the summary variable 'Educational quality'.

The analysis of the values of the column on the far right of Figure 2 allows us to easily detect which aspects are least valued by students when they form a perception of the quality of education in the institution where they are studying. When we refer to the aspects least valued by the students, we are referring to the questions in the questionnaire whose answers have the lowest correlation values with the variable 'Educational_quality'. The wording of these questions appears in Table 1.

Table 1. Questions related to the aspects least valued by the students when forming a perception of the educational quality in the institution to which they belong.

Question	Statement
2	Teachers generate a cognitive conflict based on problematic questions.
6	The University's environments have adequate lighting for class sessions.
12	The physical facilities of the University are visually attractive.
33	All classrooms at the University have multimedia equipment.
38	Wifi is available in all areas of the university.
41	The restrooms are sufficient for the attention of the entire university community.
45	There is an adequate and implemented environment for the food service of the university community.

It is evident from the analysis of Table 1 that several aspects related to the physical infrastructure of the institution to which they belong are among the least valued by students when getting an idea of educational quality.

Table 2 shows the statements of the questions whose answers are the most correlated with the students' perception of the quality of education in the institution to which they belong.

Table 2. Questions related to the aspects most valued by students when forming a perception of the quality of education in the institution to which they belong.

Question	Statement
5	Teachers develop strategies for gathering prior knowledge.
24	Teachers demonstrate a high degree of professional knowledge.
25	Teachers deepen and broaden the contents developed.
28	Teachers expand the information by promoting research.
34	Teachers are available to help with thesis advising.
39	Teachers show enthusiasm in the development of the learning sessions.
43	Teachers permanently evaluate the students' learning.

When analyzing the contents of Table 2, we can see that aspects related to teaching pedagogy, continuous evaluation and research orientation are among the aspects most highly valued by students. Special attention deserves question 34, which is highly related to the perception of quality according to our study.

DISCUSSION

Students from different programs within a higher education institution do not have the same perceptions about educational quality. In our research, we observed that on average, students of programs in health sciences give a higher evaluation of their institutions compared to the evaluation given by students of programs in other areas of knowledge within the same institution. Our results coincide with those reported by Murguía-Trinidad et al. (2020) who found that health sciences students give great weight to the academic dimension of educational quality. For the health sciences students surveyed by Murguía-Trinidad et al. (2020), the acquisition of professional skills and competencies is fundamental, as is the school atmosphere that brings together the infrastructure and, according to them, impacts their identification with the institution.

In this regard, Contreras et al. (2019) argue that "the educational environment encompasses everything that happens in an educational institution and influences motivation, behavior and the acquisition of competencies. There is therefore an association between the perception of the educational climate and the outcomes of the educational process". The formative scenario in the training and improvement of health professionals is a priority for decision makers, with the purpose of providing a better health service, based on achieving a professional who integrates management, teaching and research skills (Sánchez Rodríguez & Labrador Rodríguez, 2019). However, our results show a detachment of students with issues related to the physical infrastructure and the services it can provide. Their concerns focus on the preparation of teachers and the use of tools that facilitate learning and research.

The search for excellence in Peruvian students with respect to the purely academic dimension of educational quality could be explained by an internalization in students of a situation of reduced quality in general. Huayanay-Espinoza et al. (2019) refer that there is a stagnation in the competitiveness index, motivated by deficiencies in the preparation of teachers and low scientific production, which are generally present in Peruvian universities. They emphasize that in spite of improving budget execution in Peruvian universities, there are deficiencies in administrative capacities. One example is that although there are informatics offices in all higher education institutions, the automation of university management processes is minimal in most cases.

Our results also showed a low student appreciation of problem-based learning. It is known that this is an innovative method in which the teacher stimulates learning by solving complex problems. Marra et al. (2014) point out that it is "a type of active, student-centered teaching methodology characterized by

producing student learning in the context of solving an authentic problem". The use of active learning methodologies is a necessity (Luy-Montejo, 2019), when the student enters the university he faces a learning process where autonomy predominates and for which he is not prepared (Lino Carmona, 2016). Upon entering higher education it becomes imminent that the student assumes an active position in the process of his own training (Bueno, 2018). Problem-based learning constitutes a proposal of great value to improve the educational teaching process in higher education, since it creates a learning environment conducive to developing skills such as critical thinking. However, this process cannot be left to chance and needs the intentionality of teachers, their planning, otherwise there will be no success (Bueno, 2018). We believe that the low valuation of the surveyed students regarding this active methodology brings to light problems with its pedagogical implementation by teachers.

In line with the low valuation given by students to problem-based learning we have the fact that in general students are very concerned about teaching pedagogy, continuous evaluation and research orientation. These elements are of vital importance in the management of the teaching-learning process because of their incidence on the significance of the contents and the need to generate in the student the interest to appropriate the new content and turn it into knowledge. It should be emphasized that it has always been considered that acquiring knowledge is the source of knowing the truth and approaching the reality that underlies the development environment of the person.

Another aspect of interest is the orientation towards research and counseling by teachers. The perception of students, according to Artavia-Aguilar and Campos-Hernández (2020), is that research skills should be developed by any type of professional. The success of the orientation lies in being able to mitigate the weaknesses, which are still present in the research dimension of the formative process in universities. These weaknesses include the lack of objectivity in the analyses carried out, contradictions between teachers and research teams and difficulties in scientific writing, as well as the scarce time teachers must follow up on the research process.

In our analysis of perceptions, it was observed that engineering students are more acute in their criticisms. The programs of these careers favor the development of reflective, deep and scientifically oriented thinking. Zepeda-Hurtado, Cardoso-Espinosa, and Rey-Benguría (2019) when referring to the development of complex thinking skills (analysis, synthesis and criticism) in engineering education, point out that this is only achieved with a good combination of the teaching-learning process and the contents, which bring the student closer to the development of ideas and products of great creativity, novelty and useful for society. Corredor-Martínez and De La Hoz-Del (2018) assure that critical learning environments in engineering lead students to question themselves and their peers, as a basis for the revision and rethinking of new ideas. The confrontation of real problems of everyday life leads them to

explore the problem and consider solutions based on familiarity with the existing situation. In this case, I could consider that educational quality is a problem of their environment and, as engineers are characterized by being curious and like to know how things work, they form perceptions on how the process of their training in the institution can be improved.

Finally, this reflection on the perception of educational quality among university students shows that institutions should not give greater priority to some programs and neglect others. This situation has repercussions, often irreparable, in the perception that is formed in the student community. University professors must develop skills that allow them to detect the emotions and perceptions that are formed in students in order to improve the training process. The pandemic produced by COVID-19 has marked a before and after in universities in all processes, especially in educational quality. There have been changes in academic spaces, in the ways of learning, in teacher-student relationships and among students themselves. This whole situation has considerably affected the students' perception of educational quality, which poses a challenge to university management in reorienting all management processes.

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