

# A Perception of Teachers of the Potentialities and Fragilities in the Teaching Process Learning through Self-Assessment

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**Abstract**—This research aims to analyze from the perception of teachers of a higher education institution of Tocantins the quality of education offered by this institution, through the analysis of the results of the institutional self-assessment applied by means of a questionnaire composed of common perceptions of the surveyed subject. Among the findings of the research, it is noted that teachers consider the methodology of lessons and the integration of disciplines as positive points, as well as the reformulations of the pedagogical political project of the course, but there is a need for improvements in the practical teaching activities and the use of new technologies. It is noted that this study brought, through the teaching segment, a perspective of the actual situation of higher courses in respect of teaching and it was verified that the Institute is well evaluated, with a good concept, as statistical data

**Index Terms**—higher education, self-assessment, federal institute, higher education quality

## I. INTRODUCTION

The study of Higher Education Institutions – (IES) has high relevance in the current days and one of the reasons for such an event is the fact that higher education in Brazil is reaching all social levels, according to data from the Ministry of Education and Culture - (MEC) [1]. This fact reflects the focus on social programs in recent years, with the inclusion of families who hitherto had no financial conditions to have their children in a university [2].

The extensive access to graduation in Brazil brings with the development of higher education, and from that, there has been the need to improve the quality of education, and one of the contributing factors is the assessment of the development of the actions carried out in this context, the Law No. 10.861/2004, which implemented the National System for the Evaluation of Higher Education (SINAES), and the evaluation became

obligatory in all higher education institutions in the country [3].

Any Institution of Higher Education (IES) should, according to the Ministry of Education and Culture- (MEC), undertake evaluation of its courses, faculty, infrastructure, among other aspects deemed relevant for improving the quality of education [4].

According to the National Institute for Educational Studies and Research Antônio Teixeira – (INEP/MEC), the Institutional Evaluation is one of the components of the National System for Evaluation of Higher Education (SINAES) and is related to improving the quality of higher education; The orientation of the expansion of its offer as well as the permanent increase of its institutional effectiveness and academic and social efficacy and the deepening of the commitments and social responsibilities of Higher Education Institutions (IES), through the appreciation of its public mission, promoting democratic values, respect for differences and diversity, affirmation of autonomy and institutional identity [5].

Higher education institutions (IES) must undertake an self-assessment, seeking to achieve excellence in the services offered. According to Ref. [6], institutional self-assessment is established as a mechanism that will be used by the high management of the institution in decision-making.

The evaluation of an IES is somewhat complex, as stated Ref. [6] In addition to being informed of its institutional mission, objectives and purposes, the evaluators need to know all the evaluation policies adopted by the management in which the institution is inserted, so that the study has the impact expected to the agents involved in this process [2].

As stated Ref. [7], the self-assessment of a higher education institution, which comprises undergraduate, technological and postgraduate programs is beyond assigning notes and concepts, infrastructure and extension, we need to deal with diverse, dynamic situations, the diversity of its components as well as the different ways

of thinking. Thus, self-assessment exercises a fundamental role, approaching its diverse audiences, reaching the integrator and aggregator character. Thus, the institutional evaluation becomes a management instrument, enabling the potential, strengths and weaknesses, i.e. enabling the academic community to better know the institutional reality by seeking continuous improvement as well as academic and administrative excellence.

The SINAES is formed by three groups of evaluation actions: Assessment of Undergraduate Courses (ACG), National survey of Student's performance (ENADE) and Evaluation of Higher Education Institutions (AVALIES) [8], [9].

The institutional evaluation is considered as the highest responsibility of the Self Assessment Committee (CPA), and it is responsible for the whole internal evaluation process of the institution. [10]. Sinaes is linked to the CPA, which has developed its work in an articulated manner, aiming at continuous improvement of education, acting independently, being its purpose, according to Art. 10 of the internal rules of the CPA of IES, the implementation of the self-assessment process of the Federal Institute, the systematization and the provision of the information requested by the National Commission for Evaluation of Higher Education (CONAES) [11], [12].

The IES, the study object of this survey, has the ability to meet more than four thousand students, being a reference in quality education in the youngest capital of the country and region. Offer postgraduate courses, Superior, technicians integrated to high school, subsequent technician, technician in distance Education (EAD), National Basic Education Integration Program With Vocational Education at Youth and Adult Education Modality (PROEJA), Initial and Continuing Formation.

At binomial 2015 – 2016, this IES attended 1750 (one thousand, seven hundred and fifty) students in Higher Education courses, including Technology, bachelors and possesses in its professional framework, 212 (two hundred and twelve) professors.

This research aims to analyze the results of institutional self-assessment applied to teachers in IES in the years of 2015 and 2016, for the purpose of recognizing in the view of teachers, a quality education, ascertaining the relevance of the information obtained, as well as the possible impacts of these assessments in academic management.

## II. RESEARCH METHODOLOGY

This work adopted a transversal, descriptive study with a quantitative-qualitative approach, conducted in a Federal Institution of Higher Education. The target audience of the survey were the teachers of the higher undergraduate courses, which sum up a total of 212 (two hundred and twelve) servers of which 91 (Ninety one) responded to the questionnaire, totaling 43% of teachers.

According to Ref. [13], a case study is an empirical investigation that investigates a contemporary phenomenon within its real-life context, especially when

the boundaries between the phenomenon and the context are not clearly defined.

The research was based on Law No. 10.861/2004 where the Self Assessment Committee (CPA) periodically proceeds to institutional self-assessment.

Research seeks to verify the degree of satisfaction of teaching in the academic management in the years of 2015-2016, evaluating if it is satisfactory, through the application of the results obtained with the questionnaires applied to teachers through the sending of institutional e-mail, forwarded by the education direction with broad call in the course of the month of March 2016. Faced with the research model adopted, aiming at the attainment of the proposed goals and considering that the study is quantitative-qualitative, the instrument used for collecting data was composed of electronic questionnaires. The study in question worked with closed questions, directed to the public involved.

Participation in the research of the faculty was given through a computational system for collecting data, Google Forms, used as a tool for collecting data, containing closed questionnaires with multiple choice questions, in the same format as the printed questionnaire created by MEC, containing the questions that represent the analyzed dimensions.

For each dimension the interviewee's satisfaction level was defined as Excellent, Good, Regular, Bad, Very Bad, Do not Know, Not applicable.

The issues were grouped into three affinity defined classes to generate graphs in histogram formats. The following are the dimensions analyzed in this work:

In relation to teaching, you consider:

1. The Process of Reformulations/Pedagogical Political Updates of the Course – (PRAPPC);
2. The Integration of Disciplines in the Course – (IDC);
3. The Curricular Internship Activities of the Course – (AECC);
4. The Scientific and Cultural Contents of the Course – (CCeCC);
5. The Practical Activities of the Course – (APC);
6. The Classroom Methodology – (MA);
7. The Use of New Technologies in Teaching – (UNTE);
8. The Commitment of the Faculty with the Course – (CCDC);
9. The Qualification Policy and Updating of the Faculty – (PQACD).

Fig. 1 illustrates conceptually the self-assessment of the teaching-learning process being obtained through the application of questionnaires.

For the analysis of the data was employed statistical descriptive by the distribution of percentages, average, standard and technical deviation of the Cronbach's Alpha, in which the data were analyzed through the IBM SPSS Statistics V. 23 and BioEstat 5.3, generating also tables to classify and subsequently tabulate on spreadsheets which enabled better understanding of the results presented.

Cronbach's Alpha technique is a statistical tool that measures the reliability of multiple-item scales, aiming to

construct validation, in which the variables or items that it comprise are strongly correlated [14].

According to Ref. [15], [16], the research fits as descriptive, since, according to the aforementioned authors, it has well defined goals and formal procedures, is well structured and directed towards solving problems or evaluating alternatives of course of action. In its diverse shapes, it works with data or facts collected from reality itself.

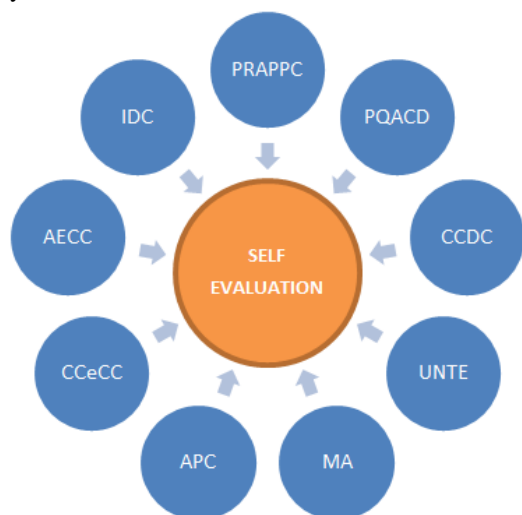


Figure 1. Ratio of dimensions with teacher self-assessment. Source: Research data.

### III. RESULTS AND DISCUSSIONS

The results presented were obtained from the information of the electronic questionnaire carried out with the teachers. Of these, of a total of 212 teachers, 91 answered the questionnaire.

In the figures below are presented the data in percentage terms of the survey carried out.

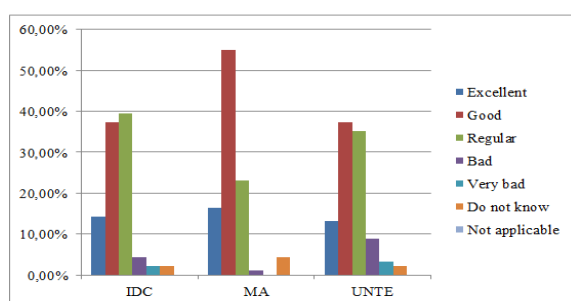


Figure 2. Percentage of responses to the dimensions of the didactic-pedagogical process.

#### A. The Classroom Methodology - MA

The teachers of the institution, most of them responded positively as the methodology of the classes, so measured by the survey participants: 71% chose between Excellent and Good, 23% Regular, 1% Bad and Very Bad and 4% considered Not to Know and That it did not apply.

In this context, active methodologies are strategies used with positive results in the teaching-learning process and in the development of the learning process and utilize

real or simulated experiences, aiming to resolve the challenges posed by different scenarios.

In this perspective, the teacher will act as facilitator or advisor and the student is encouraged to research, reflect and take decisions to attain the previously established goals [17]. Thus, in this teaching method, the learning happens from real problems and situations that will be the same that the students will experience in the professional life [18].

#### B. The Use of New Technologies in Teaching - UNTE

According to Fig. 2, the teachers may be noted that mostly, with 51% are satisfied and responded Excellent and Good, in contrast, 35% of respondents consider how to regulate this dimension, with 12% for Very Bad and Bad and 2% assessed how it does not apply and did not know.

Digital Information and Communication Technologies (TDIC) ensure rapid access to the contents and information available in the virtual electronic media. The student will learn to have autonomy and responsibilities in the control and planning of the time being dispensed with the access and reception of the contents, besides the moments with tutors/teachers and groups for reflection, analysis and elaboration of synthesis [19].

#### C. The Integration of Disciplines in the Course - IDC

As to the Integration of Disciplines in the Course, according to Fig. 2, it can be verified that 51% of the surveyed considers this dimension as Excellent and Good, 40% evaluated as Regular, 7% believe it is Bad and Very Bad and 2% responded that it does Not Apply.

Thus the IDC must be based together with the pupil, which is the subject of learning, having the teacher as mediator and facilitator of the teaching-learning process.

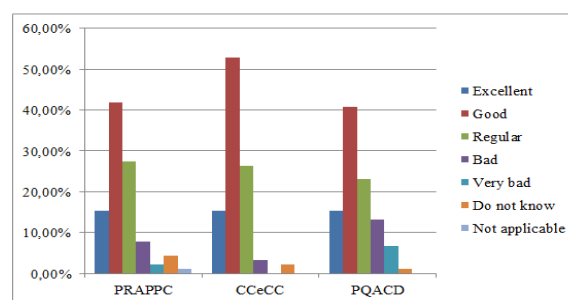


Figure 3. Percentage of responses to the political-pedagogical dimensions

#### D. The Process of Reformulations/Pedagogical Political Updates of the Course - PRAPPC

In the pedagogical political project, Fig. 3, it can be noted that, 57% responded that they consider it Excellent and Good, 27% claim to be the Regular PRAPPC, about 10% consider it Bad and Very Bad and 6% answered Not Knowing and that it did not apply.

In this context, although teachers affirm that they are satisfied as to the PRAPPC, adopting active methodologies has been a major challenge in the restructuring of pedagogical political projects, a task that

several professionals are facing from the National Curricular Guidelines (DCNs) [20].

#### E. The Scientific and Cultural Contents of the Course - CCeCC

According to the analysis of Fig. 3 It was noted that 68% of respondents consider as Excellent and Good and 26% Regular. Only 3% consider it Bad and Very Bad and 2% selected the option Do not know and Does not apply.

In the face of the foregoing, the institutional self-assessment modality implies checking the performance of the institution in dimensions, or indicators, related to the following topics: Mission and institutional development Plan; Scientific, cultural and educational background content and perspective: politics, norms and stimuli for teaching, research and extension; Social responsibility of IES; Communication with society; Personnel policies, careers, improvement.[21].

#### F. The Qualification Policy and Updating of the Faculty - PQACD

It can be seen through the analysis of Fig. 3, that 56% of respondents pointed out such a dimension as Excellent and Good, 23% Regular, 20% Bad and Very Bad and 1% Did not know.

In the context of public policies for education, government initiatives are observed in establishing targets and actions that provide the citizen development, predicting, in the 1988 Constitution, in the Law of Guidelines and Bases/1996, in the National Education Plan (PNE)/2001 and in the Education Development Plan (PDE)/2007, guidelines for the expansion and improvement of the quality of education [21].

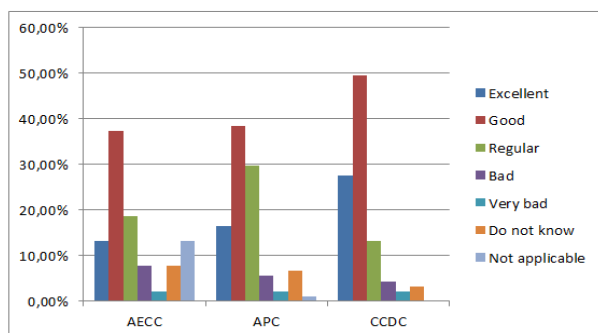


Figure 4. Percentage of responses to the dimensions of pedagogical practice.

#### G. The Curricular Internship Activities of the Course - AECC

It can be noted that the responses are positively, in the teachers' perception. According to Fig. 4, 50% of teachers declare it as Excellent and Good and 19% consider it Regular, 10% of participants consider dissatisfied and 21% of respondents claimed Do not to know and Does not apply the issue in question.

Stage activities to be developed by the differences are often hampered by the lag of laboratories and lack of books that interfere with the negatively in their formation. It also resents a greater optimization of the internship sector, in the sense that it can deepen the relationship of

the institution with the world of work, opening doors so that pupils can have greater access to the internships and jobs.

#### H. The Commitment of the Faculty with the Course - CCDC

It can be noted, as illustrated in Fig. 4 that 76% mentioned being Excellent and Good the commitment of the teaching staff with the course, 13% Regular, 7% Very Bad and Bad and 3% did not know how to opine.

Thus, the faculty's commitment can be analyzed through the Formative Evaluation and thus contribute to the teaching-learning process of the institution. According to Ref. [22], defines the formative evaluation as: covering all activities conducted by teachers and/or their students, who provide information to be used as feedback for teaching-learning activities in which they are involved.

#### I. The Practical Activities of the Course - APC

According to Fig. 4, it can be noted that this dimension was classified by teachers at 55% for Excellent and Good, 30% Regular, 8% Bad and Very Bad and 8% preferred options I do not know and Does not apply.

The practical activities give to graduates a notion of the real situation of teaching work, creating a moment of verification of skills and competences acquired during the course. Thus, future teachers will perceive the school as an interactive environment, in which work and formation are not disconnected activities [23].

In addition to the quanta-qualitative study conducted in the charts, a reliability test was also employed through the Cronbach's Alpha method which indicates the consistency between the items of each question prepared in the questionnaire.

A high value for Cronbach's Alpha indicates good internal consistency of the items on the scale. Cronbach's Alpha coefficient is in intuitive practice because, eventually, the values vary between zero and one.

It is known that the consistency of a questionnaire is greater the closer it is to Table I, although there is discussion about acceptable alpha values, ranging from greater than or equal to 0.7 to less than or equal to 0.5.

TABLE I. CONSISTENCY OF THE DIMENSIONS BY THE VALUE OF CRONBACH'S ALPHA.

Alpha Value	Internal Consistency
0.91 or more	Excellent
0.90 - 0.81	Good
0.81 - 0.71	Acceptable
0.71 - 0.61	Questionable
0.61 - 0.51	Poor
< 0.51	Unacceptable

Source: Ref. [24].

TABLE II. CRONBACH'S ALPHA OF THE SURVEY DIMENSIONS.

Dimensions	Cronbach's Alpha
The Process of Reformulations/Pedagogical Political Updates of the Course;	0.987
The Integration of Disciplines in the Course;	

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The Curricular Internship Activities of the Course;  
 The Scientific and Cultural Contents of the Course;  
 The Practical Activities of the Course;  
 The Classroom Methodology;  
 The Use of New Technologies in Teaching;  
 The Commitment of the Faculty with the Course;  
 The Qualification Policy and Updating of the Faculty.

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According to Table II, it is noted that the Cronbach's Alpha is superior to 0.91 in the dimensions, and can be considered "Excellent", demonstrating that the result is reliable.

The standard deviation is an average of the absolute values of deviations, i.e. describing the dispersion of the variability of the sample distribution values from the average; Thus, a low standard deviation value indicates that the data points tend to be close to the average and are very consistent in their opinions. Otherwise, if the standard deviation value is high, it indicates that the data points are scattered over a wide range of values and there is a lot of variability in the opinions.

The Coefficient of Variation (CV) is a dimensionless measure that normalizes the standard deviation relative to the average. The smaller the value of the variation coefficient, the more homogeneous will be the data, i.e. the smaller the dispersion around the average.

In general, for the coefficient of variation less than or equal to 15% represents a low dispersion meaning that the data are homogeneous. A CV greater than 15% and less than or equal to 30% indicates a medium dispersion in which the data is relatively dispersed and finally when the CV is greater than 30% indicates a high dispersion representing the data are heterogeneous.

TABLE III. QUANTITY OF TEACHERS FOR EACH DEGREE OF SATISFACTION.

Dimension	DEGREE OF SATISFACTION						NA
	Excellent	Good	Regular	Bad	Very Bad	Do not know	
PRAPPC	14	38	25	7	2	4	1
IDC	13	34	36	4	2	2	0
AECC	12	34	17	7	2	7	12
CCeCC	14	48	24	3	0	2	0
APC	15	35	27	5	2	6	1
MA	15	50	21	1	0	4	0
UNTE	12	34	32	8	3	2	0
CCDC	25	45	12	4	2	3	0
PQACD	14	37	21	12	6	1	0
Average	14.89	39.44	23.89	5.67	2.11	3.44	1.56
Standard Deviation	3.95	6.44	7.32	3.24	1.76	2.01	3.94
CV (%)	26.54	16.34	30.65	57.18	83.55	58.27	253.32

Table III describes the average, the standard deviation and the coefficient of variation of the degree of satisfaction of each dimension observed. The sample in study presented an average of 14.89 and standard deviation of 3.95 with CV of 26.54% of teachers who chose the Excellent degree in the dimensions; For the degree of satisfaction Good the average of teachers was of 39.44 and the standard deviation of 6.44, with CV of 16.34%. The degree of satisfaction Regular showed an

average of 23.89, standard deviation of 7.32 with CV of 30.65%. The average for the Bad grade in the dimensions was 5.67, standard deviation of 3.24 with CV of 57.18%. For the Very Bad option the average was 2.11, standard deviation of 1.76 with CV of 83.55%. For the degree of satisfaction Do not know presented an average of 3.44, standard deviation of 2.01 with CV of 58.27%. For the degree of satisfaction Not Applicable the average was 1.56, standard deviation of 3.94 with CV of 253.32%.

It can be concluded with the lowest coefficient of variation of 16.34% that the teachers who chose the degree of satisfaction Good, have a lesser variability than others. Despite the degree of Good satisfaction have a higher standard deviation from most of the degrees of satisfaction, the same has much less variability relative to its average, which demonstrates better consistency in the degree of satisfaction.

As a result of the degree of satisfaction of the higher courses, according to the described dimensions and statistical calculations, we can point out the potentialities and fragilities of the research.

#### J. Potentialities

According to the teachers, the Classroom Methodology and the Integration of the Disciplines are positive points, as well as the reformulations of the PPC's are considered good.

The activities and practices are shown as a positive point in the course.

It is noted that the faculty's commitment to the course as well as the scientific and cultural content of the course are good.

It is excellent the performance of the immediate chief and the commitment of administrative technicians with academic activities.

In the view of teachers, the items of this dimension, in general, have a good concept.

#### K. Fragilities/Aspects that Require Improvements

In the teachers' understanding, there is a need for improvements in practical teaching activities and the use of new technologies. They are fragile curricular internship activities as well as the integration of course disciplines is flawed. It is regulating the use of new technologies in the course, requiring special attention, and is deficit the qualification policy.

### IV. FINAL CONSIDERATIONS

The Internal Institutional Assessment of a teaching institution is part of a series of evaluations of the National Evaluation System of Higher Education. The participation of the teacher is of paramount importance, for responding to punctual and strategic issues, formulated within a constructive critical spirit, a precise diagnosis of the activities developed.

The research conducted in an IES brought, through the teaching segment, a perspective of the situation of higher courses, with regard to teaching and verified that IES is well evaluated with a good concept, according to research data.

The Federal Institute is a set of processes and relationships that are produced in their everyday life, and therefore not a ready and finished reality [25]. An IES is a social institution of essentially pedagogical character, and, to understand it this way, it helps to better perceive the "institutional" dimension of the evaluation [26].

This survey was limiting the lack of greater involvement of teachers in the Institutional Evaluation, to see the numerous invitations made by the management of the Federal Institution, through e-mails and verbal warnings in the Area Coordinates of the Higher Courses.

We evaluate the research as valid and of paramount importance to list responses to the problems, fragilities, and mediate a decision making by the manager in activity, with the intention of guiding improvements in teaching, through a planning directed towards excellence in education.

For future research, a study is suggested on the effectiveness of the institutional evaluation in an IES, aiming to observe the actual changes made in the interstitial of two years made by the elected manager, suggested by the final evaluation report, according to the degree of teacher satisfaction.

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