

The National Courses Examination in Brazil- Some Considerations and a Study of the Performance of a Civil Engineering Course

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Abstract: The National Courses Examination (NCE) of the Ministry of Education of Brazil was introduced in 1995 and its purpose is the evaluation of Brazilian universities courses. The examination is compulsory to all last year students of all courses which are included in the evaluation. The universities are forbidden to supply the graduation certificate to the absent students.

First in a more emphatic way and nowadays in a soft way, this evaluation instrument has received serious criticisms from the universities and from students. Some reasons for the criticisms are the limitation of the examination, which evaluates only the last year students, evaluating the whole course according to the characteristics of a specific group and the geographical generalization, without considering the regional characteristics, leading to a curriculum uniformity.

This paper analyzes the Civil Engineering course at Ponta Grossa University, Paraná State, Brazil (UEPG) and its performance in the NCE in the period 1996-1999, comparing it with the Paraná State averages and with Brazilian averages. This analysis allowed the discovery of the most common mistakes, leading to the course improvement and to the students' best performance in future evaluations of the NCE.

It is also verified the Masters and Doctorate degrees evolution, considering the Civil Engineering Department (DENGE) teachers in the NCE application period (1996 to 1999). This also contributes to the improvement of the teaching process quality, and agrees with the NCE purposes.

The NCE is an evaluation instrument that has a law strength. In our case, the Civil Engineering courses must live together with it, trying to reformulate their contents and to improve the quality of the teaching process, supplying to society better engineers, prepared to face the challenges of the new millennium.

Keywords: teaching, evaluation, Civil Engineering.

1. Introduction

The National Courses Examination (NCE) was introduced in 1995, through the Law n. 9131/95, and its purpose is the evaluation of Brazilian universities courses. Brazilian Government intends to guarantee the qualitative expansion of the courses, demanding some requirements to the authorization, the recognition and the renewal of operation of courses and universities. The NCE intends to provide through the years a sight of the graduation teaching. Another part of the evaluation is a group of inspectors that analyses the course facilities structure, the didactic-pedagogical organization and the teaching staff qualification. Brazilian Government states that most of the badly evaluated courses have corrected their deficiencies, in many cases because of the students' pressure. According to the Ministry of Education of Brazil, the last NCE has showed that the universities are becoming better, specially when we look for the teachers' qualification. It is important to say that the NCE is an evaluation instrument that has a law strength. The examination is compulsory to all last year students of all courses which are included in the evaluation. The universities are forbidden to supply the graduation certificate to the absent students.

2. Purposes

The NCE purposes to the Civil Engineering courses, determined and published by the designated Course Committee by the epoch of its creation are:

- to contribute to the evaluation of the institutions that minister Civil Engineering courses, being one of the defined parameters of success of the teaching-learning process, with the purpose of facilitating actions towards the improvement of the quality of teaching;
- to contribute to evaluate if the basic formation of the last year students helps them on facing problems and on conceiving solutions related to the daily activities and to those ones due to the technological evolution;
- to verify to what extent the engineering teaching that is ministered in those institutions is facilitating the formation of professionals conscious of their role as agents of social transformation.

The delineated profile to the Civil Engineering graduates, equally determined and published by the designated Course Committee by the epoch of the NCE creation are:

- solid basic formation, which is indispensable to the Civil Engineering professional practice, allied to the ability to face and to solve problems related to this area and to look for continuous modernization and improvement;
- extensive formation in the several areas of Civil Engineering: civil construction, geotechnics, transports, hydraulic resources, basic sanitation and structures;
- ability on using computer science as an instrument to the practice of Civil Engineering;
- domain of the basic techniques of management and administration of the human resources and materials used in the practice of the professional career;
- ability on using new alternatives in conceptual fields and in Civil Engineering current practice;
- ability on working in multi-disciplinary teams;
- professional ethical sense, allied to social responsibility;
- extensive formation that propitiates sensibility to the humanistic, social and environmental subjects.

3. Considerations

Some considerations must be made. The NCE is still new. It has been only applied for four years. It must be completely understood, before we criticize it. But it is possible to declare some statements, in a general way, about the positive and negative characteristics of the examination:

- the NCE evaluates the result of five years of study of a specific group. All the course is evaluated according to the characteristics of a single crew. We must consider that it is not possible to obtain the same quality from all classes;
- the examination is unique for all the country, meaning a geographical generalization, without considering the regional characteristics, leading to a curriculum uniformity. Someone can say that this is a positive factor, because the student will be able to work anywhere in the country;
- some specific factors may have interfered in the results, as for example the contrary political posture of some students, which attend to the examination, but give back blank tests, distorting the average results;
- the fifth year students, by the epoch of the examination, are overloaded with another obligations, as for example tests, works and reports of their last subjects, which will lead them to their graduation;
- students do not have faced the NCE as seriously as they should. As a result of this superficial approach, many questions are not even started. The students have many free hours during the whole day and they could study more. But what happens frequently is that they work in professional training activities, which in many cases are not so good to their professional careers;
- press, especially the printing-press, has created a classification ranking of universities, according to their performance in NCE. It is a rough distortion of the targets. The way it was created, it has no scientific bases. What this classification has gotten is to impair the image of most of the universities in the presence of public opinion. There are another evaluation instruments, and this classification considers only the NCE results. But its positive aspect is that it bothers people. After all, there must be a reason to the bad evaluation. We can simply contest it without arguments. It leads to changes on procedures;
- the NCE, the same way as the Brazilian National High School Examination, could be an option and not compulsory. This would decrease pressure over students and teachers;

- the NCE provides information to the universities about their performance, comparing it to other universities, to Paraná State average and to Brazilian average. Even if we consider all its imperfections, it is the only evaluation instrument that exists, so it must be improved;
- the NCE suggests modifications and improvements before punishments are imposed;
- the Civil Engineering courses must live together with the NCE, due to its law strength. If the course is going to be evaluated every year, we are guided to a continuous worry. This way, we must try to reformulate the courses contents and to improve the quality of the teaching process.

4. The Civil Engineering Course at Ponta Grossa University (UEPG) and its averages

The Civil Engineering Course at Ponta Grossa University (UEPG) has been evaluated since the first edition of the NCE, in 1996. The NCE determines five evaluation grades, from A (the best ones) to E (the worst ones), passing through the grades B, C and D. UEPG has been evaluated with the following grades: 1996: C; 1997: B; 1998: C; 1999: C. In the first year (1996), it was a novelty. The students did not know what was coming, or what to expect from the examination. The emphasis was in basic contents, which had been studied in the first college years, far away from the fifth year that all examined students were studying. In the second year (1997) the questions were elaborated in a more professional point of view, with contents that the students had studied a short time ago. And that group of students was specially good, in comparison with the other years. These facts have contributed to the good grade (B). In the third year (1998), the grade came back to C. The group of students was medium-leveled, without any exponent student. The questions were also more difficult than in the preceding year. All these facts were repeated in the fourth year (1999), maintaining the grade in a C level. The questions were more demanding and there was a bit of negligence of some students, due to their another obligations.

The Ministry of Education of Brazil has published a complete analysis of NCE, every year, since 1996. This permits the comparison with Brazilian averages (from 1996 to 1998) and with both Brazilian and Paraná State averages (since 1999). Every NCE is composed of 10 (ten) discursing questions.

In 1996, the UEPG students averages of 3 (three) questions were almost equal to the national averages. When we say *almost equal* we mean a small difference after the decimal point. The averages of another 3 (three) questions were meaningfully smaller than the national ones, and the averages of 4 (four) questions were meaningfully greater than the national ones. It is logical and coherent with the obtained C grade.

In 1997, the UEPG students averages of 1 (one) question was almost equal to the national averages. The averages of another 2 (two) questions were meaningfully smaller than the national ones, and the averages of 7 (seven) questions were meaningfully greater than the national ones. It is logical and coherent with the obtained B grade.

In 1998, the UEPG students averages of 3 (three) questions were almost equal to the national averages. The averages of another 3 (three) questions were meaningfully smaller than the national ones, and the averages of 4 (four) questions were meaningfully greater than the national ones. It is again logical and coherent with the obtained C grade.

In 1999, the UEPG students averages of 6 (six) questions were meaningfully smaller than the national ones, and the averages of 4 (four) questions were meaningfully greater than the national ones. It agrees with C grade again.

In this same year of 1999, NCE has started a comparison with Paraná State Civil Engineering courses. The UEPG students averages of 2 (two) questions were almost equal to the Paraná State averages. The averages of 7 (seven) questions were meaningfully smaller than the Paraná State ones, and the averages of 1 (one) question was meaningfully greater than the Paraná State ones. This explains the UEPG grade (C) and justifies the another Paraná State courses grades, most of them A and B grades.

Another evaluation happens when a group of inspectors visits the universities, in order to verify some conditions. These grades are assigned based on a personal looking. In 1998 UEPG was evaluated as CB (Good Conditions) for all the analyzed items: the didactic-pedagogical organization, the teaching staff qualification and the course facilities structure.

5. The teaching staff qualification at Ponta Grossa University (UEPG)

In the first three years of evaluation (1996-1998), the grades were assigned from A (the best ones) to E (the worst ones), passing through the grades B, C and D. This evaluation was based on written reports which were sent to the Ministry of Education. Ponta Grossa University (UEPG) was assigned: 1996: C; 1997:D; 1998: B. It has got better from 1996 to 1998, and the bad grade in 1997 has an explanation. The Course Coordinator at that time forgot to include the lecturers from another Departments that work at the Civil Engineering Course and whose subjects are

part of the graduation table (Mathematics, Physics, Geology etc.). This mistake was corrected in 1998, leading to a better grade.

Since 1999, the teaching staff qualification is evaluated as a percentage grade, and it can be compared with another institutions grades. UEPG percentages in 1999 were: Graduation Degree: 14,6%; Specialist Degree: 39,0%; Master Degree: 36,6%; Doctorate Degree: 9,8%. The next year it will be possible to verify the improvement of the percentages, as some teachers may conclude their post-graduation studies. The work journey by week was registered as: 40 hours: 85,4%; from 20 to 39 hours: 9,8%; from 8 to 19 hours: 4,8%. We can see the most part of the teachers having a 40 hours journey by week, meaning a great amount of time dedicated to the University.

6. Conclusions

The analysis of the average grades on each question, in comparison with the Paraná State and Brazilian averages, allows the discovery of the most common mistakes that students have made and the questions where the mistakes happened, leading to the teaching of the new students who will face the NCE in the next edition, so that they do not make the same kind of mistakes.

The Masters and Doctorate degrees evolution also contributes to the improvement of the teaching process quality, and agrees with NCE purposes. It is necessary, this way, to stimulate the teachers to carry on their careers improvement and to look for post-graduation studies.

The Ministry of Education of Brazil, that has created the NCE, is just watching to the publication of artificial ranking classifications by the printing-press, without talking anything about it. The NCE initial purpose was not a ranking classification, but the Ministry does not do anything to obstruct the damages that this ranking classification is causing.

We must talk too about the effectiveness of the results, because a great part of the universities is going away from their objectives, starting to prepare their students to the NCE, through specific and NCE-guided reinforcement classes, with the purpose of getting a better classification.

All this teaching landscape leads to the need of reformulating the courses contents and to the improvement of the quality of the process, supplying to society better engineers, prepared to face the challenges of the new millennium.