

STATISTICS TEACHING TO ADMINISTRATION DEGREE BY DISTANCE EDUCATION: WORK EXPERIENCE EVALUATION

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Abstract

This article aims to evaluate the academic subject of Introduction to Economic Statistics in the undergraduate program of Business Administration by distance learning at FURG. Textual discourse analysis was used in assessing the data obtained from the answers of students to a questionnaire of open questions, available at the end of the discipline. In this study, it was possible to verify the importance of the video lessons and of the cooperative work among students in the pursuit of activities within such kind of academic subject education. The criticism was more remarkable on the communicative difficulties via platform due to the specificity of language/symbolism required by the subject, and as to the fact that the video lessons should be available at the online platform. The results of the evaluation allowed restructuring the discipline of Economic Statistics to be offered in the following semester.

Keywords: Statistics teaching, Distance Education, Self-evaluation

1. Introduction

This study aimed to evaluate the academic subject of Introduction to Economic Statistics within the undergraduate program of Bachelor's Degree in Business Administration by distance education at the Universidade Federal do Rio Grande – FURG. The evaluation process enabled identifying an unexplored potential and diagnosing the points needing adjustment. According to Cunha (2005, p.212), “the exercise of evaluating requires not only speaking, but also and mainly listening.”¹

In addition, the evaluation of distance education degrees allows obtaining data that helps to identify the progress or difficulties found in developing the course. Within this process, it is of great importance to evaluate the disciplines separately, considering the specificities of each; only thus we can identify the necessary changes and adaptations to offer them through the virtual environment.

Regarding the teaching of Statistics within that context, we find essential to note that it has gained an increasing importance in contemporary society. With technological development, the labor market has demanded on professionals the ability of making decisions based on available information. The more the volume of information increases, the more that prevents an analysis based on full information. Therefore, knowledge of statistical concepts is a key to those who have the responsibility of making decisions from the results obtained by statistical analysis.

Similarly, advances in digital technology has brought new possibilities to the process of teaching and learning, thus facilitating the interaction between teachers and students, and enabling greater communication among them; such a fact alters the perspective of time and space given so far. Consequently, the way the teaching is seen has been recasted, and this allows the emergence of other forms of education, better adapted to changes in society, which knowledge is continuously and rapidly updated.

Perhaps, this is one of the great challenges of teaching in the XXI century: finding the best way to use digital technology in the teaching and learning in accordance with the requirements of the new times. Such a fact would allow the reconfiguration of the role of the teacher and the student within

this new scenario, providing them a more adequate training to the current reality.

Advances in digital technology, the volume of information, and the need for continuous knowledge updating have contributed to the increasing supply of degrees by distance education in recent years.

The undergraduate programs carried out by this education mode require a pedagogical and managerial structure that is different from face-to-face teaching/learning. The feeling of isolation of students, the logistics of meetings, the production of material, and teacher/tutor interaction with the student require an entire preparation and organization much before the beginning of activities. All actions must be planned; however, as everything is new, we learn from experience. As Moran (2004) claims, we are "learning by doing."

Hereafter, the following topics will be contextualized: first, the degree in Business Administration, offered by distance education; secondly, the methodology used in data analysis and discussion of results; and then, final considerations.

2. Background of the course and its organization

The degree in Business Administration by distance education is part of the Project entitled *Universidade Aberta do Brasil* [Open University of Brazil] (UAB). The Universidade Federal do Rio Grande took part of that public announcement, offering two undergraduate programs: bachelor's degree in Business Administration and teaching degree in Pedagogy. The discipline of Statistics is offered to Business Administration, which began in August 2007. This course is offered in five poles of Rio Grande do Sul (Figure 1), each of which received 30 students.

Each semester of the course is divided into two modules of eight weeks, being offered three disciplines in each module. The subject of Introduction to Economic Statistics was offered in the second module of the third semester of the course. The offering of this course is of an experimental nature and there will be no re-supply of discipline or opening of new groups.



Figure 1 – Poles attended by UAB/FURG

3. Methodology

In order to evaluate the discipline of Introduction to Economic Statistics, a questionnaire containing open questions was provided to students at the end of activities. The analysis of the responses of students to this evaluative tool identified the limits and possibilities of such an education mode.

The method of discourse textual analysis was used on the basis of Moraes and Galiazzi (2007) for analyzing the open questions. That method is an exercise to go beyond a superficial reading, allowing the construction of new theories from new meanings and understandings on the phenomenon under investigation.

Discourse textual analysis is constituted of a cycle made of three elements: unitarization, categorization, and reporting. The dynamics of these elements causes the emergence of new understandings. To the authors, the relationship between those units enables the construction of a new order, which represents a new understanding on the investigated phenomena. Communication is the third stage of the cycle, in which the text summarizes the central argument of each of the categories.

In the analysis of the instrument for evaluating the discipline, four categories were identified (Table 1).

Categories emerging from the analysis
Teaching material
Work of the tutors
Evaluation of learning
Face meetings

Table 1 – Categories found in textual discourse analysis.

4. Background of the discipline and its organization

The academic discipline of Introduction to Economic Statistics was carried out in the second half of the third module of the course, from October to December 2008. The content, distributed in six weeks, included the descriptive statistics, the basic concepts of probability, and probability distributions. In the seventh week, there was a content review; and, in the eighth, a presential evaluation.

For the students to meet the two teachers of the discipline, one of which is the first author of this work, it was provided in the moodle platform a short welcoming video to students, and information on the dynamics of the discipline were given. We consider this video to be important because the teachers get on materiality through it, being no longer just an icon in the corner of the page.

Each pole had an online distance tutor, which was responsible for the correction and the inclusion of comments to the evaluated activities posted weekly onto the platform.

5. Discussion of categories

Hereafter, the four categories found from the analytical process are explained and discussed.

5.1 Teaching Material

According to Corrêa (2007), in the development of teaching materials for distance education courses, it is important to identify what are the needs and technological opportunities of each context and the knowledge that the involved students have of these tools. That promotes a process of incorporation and use of the technology, which meets the needs of teaching within such perspective. Taking that into account, the material of the course was produced by the teachers and researchers, and made available on the moodle platform. Of the

tools available on the platform, the ones that best fitted the discipline were chosen by considering the skills of the students on technology.

Every week, there were: a video lesson, materials for printing, and an evaluated activity. The feedback of the evaluated activity was released two days after the end of the postings. Though the distance tutors commented on the activities, students considered important that the feedback was released.

According to students, the material was considered of good quality, clearly presented, easy to understand, with a good variety of examples, and exercises solved step by step. They insisted that those factors facilitated the comprehension of contents.

The video lessons also were very well accepted by students: the lessons were considered to be extremely effective, as the students could watch them at the most convenient time when they were focused in their studies. Thus, the distance was decreased and a way to aid in the understanding of the content was promoted, as understanding was becoming difficult with printed material only. The video lessons were around 30 minutes long, in which content concepts were clarified and examples related to those were resolved.

Only in two poles, the students were used to promote meetings and study groups, which occurred at the poles. In the others, student moved to the pole just for face meetings. Therefore, some students requested that all the course material was available on the platform or delivered to the pole at the beginning of module.

The size of files generated by video lessons made them impossible to be available on the platform. Thus, the videos were sent to the pole on DVD. However, that practice complicated the access to the material for the students not living in the city of the pole. This highlights the need for dynamic and flexible solutions that facilitate the process of teaching and learning by distance, especially in subjects that involve mathematical language, as not all the tools for interaction and discussion on the moodle platform are adapted to this reality.

5.2 Work of the tutors

During the course, we could see that the habit of students to attend the pole was also associated with the role of the tutor. Despite not being trained in the area of the course, some presential tutors promoted aggregating activities

that encouraged students to develop a cooperative work, highlighting the importance of the performance of this role in the pedagogical process. Students considered the group activities to be very important in order to understand the content of the discipline.

As Correa (2007) states, the cooperative work makes possible: the experience exchange, the exercising of argument capacity, the confrontation of ideas, and the socialization of solutions. These practices take the student out of isolation and transmit them more self-assurance, which motivates them to keep on the journey.

To Litwin (2001), if the tutor is trained in the field of practice, he or she will be able to understand, improve, enrich and deepen the educational proposal offered by the teaching material. However, in the evaluation, some demonstrations stood up against the fact that the tutor was not trained in Business Administration, and thus had no knowledge on the course field.

In the selection of presential tutors for the course of Business Administration, tutors were selected from other fields because, according to the RESOLUTION/FNDE/CD/Paragraph N° 044², they should be teachers of the state or municipal public school system of the pole City. However, in the public school system of the country, there are no teachers trained in such academic field.

To support students, each pole had an online tutor by distance. In general, these tutors used instant messaging tools that were external to the platform. That fact hindered the monitoring of the questions and the development of students by the inability to record the process. The tutor by distance corrected the evaluated activities of the pole students and accompanied the teacher in the face meetings.

Students also identified the need for greater clarity in the language used in messages and on-line conversation. Particularly, they requested to avoid the use of abbreviations and symbols, which many students are not familiar with. As the tutors used instant messaging tools, external to the platform, this problem was highlighted just in the evaluation process of the discipline.

5.3 Evaluation of learning

The evaluated activities allowed us to monitor the development of students throughout the course, to detect the problems and needs of learning found by them, and to identify the type of tutoring needed to assist students in understanding the contents under study (CORRÉA, 2007).

Although it was possible that the virtual evaluated activities were done and posted in groups of up to three students, some of them found difficulties because they were demanded weekly. Furthermore, some students described the activities as long and difficult ones, which led some of them to require shorter works or more time to perform them.

One student commented that the evaluated activities “were good, but it could be better if not all of them were evaluated, or if the content was given and a task was performed to hand out, having the student performance considered before its final evaluation.”³ The opportunity to solve the exercises and submit them for correction, with return in time to conduct the activity under consideration, was made possible through additional exercises. The resolution of these exercises would allow discussing the contents with the tutor by distance and the teachers. However, most students did not use this feature, claiming the lack of time. According to Kenski (2003, p.114), “the alleged lack of time to study indicates the redistribution of individual time to meet other needs considered to be prior ones at that time.”⁴

Concerning the presential evaluation, students asked to have two instead of one of it. The UAB/FURG adopts a single presential evaluation, due to the cost and time of displacement of the tutors and teachers to the pole. In order to remedy this difficulty a bit, currently, the presential evaluation is applied by the distance tutor.

5.4 Face meetings

As the presential evaluation is now carried out by the distance tutor, whenever possible, the teacher and the distance tutor had two face meetings. In these meetings, the following topics were discussed: the plan of education, the form of organization and availability of teaching materials, the evaluation process, and the difficulties experienced by students across the discipline.

Although students were aware of the fact that the course is offered by distance, they requested more face meetings. They claim that two presential

lessons are insufficient to figure out their concerns. One way of trying to overcome this difficulty would be encouraging virtual dialogues, which would enable everyone to know each other better, promoting collaborative work in the web.

6. Considerations

The contribution of students over the discipline and the evaluation process conducted at the end of it allowed reevaluating and proposing some changes, in addition to providing the restructuring of the discipline of Economic Statistics to be offered in the following semester.

In this study, we observed that the perception of students regarding the teaching material, as of clear presentation and easy comprehension, helped in understanding the contents. According to them, in particular the video lessons are essential in disciplines involving calculations and formulas. We also realized the importance of cooperative work among students and the importance of participation of the presence tutor in the promotion of such cooperation, since the sense of accompanying and belonging to a group are essential for the student in this mode of education.

Considering the need of the discipline to use symbols and formulas, communication between teachers/tutors and students was one of the difficulties encountered. We found out the need to adapt the platform for disciplines of this type, as well as the need to find alternative media to provide the video lessons for the students.

Concluding, the importance of continuous and ongoing evaluation has shown to be as undeniable. Experiencing, evaluating, and again experiencing is the best way to identify the necessary changes and potential not yet explored that may assist in (re) planning and improving the subjects offered by distance education.

¹ Our translation.

² RESOLUTION/FNDE/CD/Nº 44, December 29, 2006, establishing guidelines for scholarship and research grants to participants of courses and programs of higher education within UAB.

³ Our translation.

⁴ Our translation.

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Referências

BRASIL. **RESOLUÇÃO/ FNDE/CD/ Nº 044**, de 29 de dezembro de 2006. ftp://ftp.fnde.gov.br/web/resolucoes_2006/res044_29122006.pdf, Fevereiro, 2008.

CUNHA, Maria Isabel da (Org.). **Formatos avaliativos e Concepção de Docência**. Campinas, SP: Autores Associados, 2005.

CORRÊA, Juliana. **Educação a Distância: orientações metodológicas**. Porto Alegre: Artmed, 2007.

KENSKI, Vani Moreira. **Tecnologias e Ensino Presencial e a Distância**. Campinas, SP: Papirus, 2003.

LITWIN, Edith. (Org.). **Educação a distância: temas para o debate de uma nova agenda educativa**. Tradução Fátima Murad. Porto Alegre: Artmed Editora, 2001.

MORAES, R. GALIAZZI, M. C. **Análise Textual Discursiva**. Ijuí: Ed. Unijuí, 2007.

MORAN, José Manuel. **Perspectivas (virtuais) para a educação**. Texto publicado no Mundo Virtual. Cadernos Adenauer IV, nº 6. Rio de Janeiro, Fundação Konrad Adenauer, abril, 2004, p. 31-45.