APPLICATION OF ICTS TO TEACHING STATISTICS TO NON STATISTICIANS

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Abstract

The expansion of the university system coupled with the changes introduced by the new information and communication technologies (NICT), have a direct effect on the traditional methods of education. In fact, ICTS have significantly increased the available information, altering the methodology of statistical treatment. These transformations are progressively being incorporated into the university education, which should take up the challenge of training individuals prepared to efficiently developed its activity in the field of the new information society. This work assesses the experiences in the application of new technologies to the teaching of statistics, describing the role of the software used for practical work and analyzing the possibilities of the Internet in a dual perspective: as a supplement to classroom teaching and as a support for a virtual classroom based on the foregoing of a methodological proposal that tries to adapt the use of technology to different curricular proposals belonging to private and public universities, in different educational establishments, and in situations of marked difference in the amount of students in charge of each professor.

METHODOLOGIES APPLIED TO TEACHING STATISTICS

This research will focus on implementation experience with strong methods using new technologies in the teaching of statistics, and able to establish a flexible method for creating blended learning programs for which it is essential that students have comprehensive knowledge and applied to interpret and resolve situations. For this, two key elements are: communication and cognition. It has built a structured into five aspects related to: context, teaching methods, materials, technological environment and evaluation methods

I. CONTEXT

Statistics, the subject, is taught at degree careers in International Trade, Lic In Commercialization, Engineering and Bachelor in Business Administration and Statistics I and Statistics II are held at the Public Accountant School of Business at the American Open University and the University of the Latin American Educational Center in the city of Rosario, Argentina. They are all quarterly and cover subjects descriptive topics, probability and inference for quantitative and qualitative variables.

Statistical Methods is taught in the School of Public Accountant and Statistics for Administration at Degree in Management, as well as Statistics Methods I at Bachelor in Statistics at the Faculty of Economics of the Rosario's National University.

II. TEACHING METHODS

Some differences were observed in the different colleges and careers.

In business careers at UCEL and at UAI classes are of no more than 30 students watch you work four hours weekly on-campus class to dictate some theoretical and practical issues in the classroom and others in cabinet computer. Exercise is performed from a guide to practical work.

in the descriptive part of besides using software such as Excel and SPSS Statgraphic teaches the use of graphing calculators.

At the UNR we work almost permanently at the computer cabinet for classes of Statistics career, not so, in the Public Accountant and Management Accountant.

III. MATERIALS

In all careers they have study material and guidance of practical work, both print as well as the literature reference, permanently complemented with activities, self-assessments and slides that are incorporated into the educational platform.

IV. TECHNOLOGICAL ENVIRONMENT

All Universities have computer cabinets available to students, specialized software and virtual classroom; however the use of these means is different.

In the UNR in careers Public Accountant and Management Accountant, becomes complex using computing cabinet because of the number of students in each class, not so in Statistics career where the use is permanent, as well as the use of graphing calculators.

In UAI and UCEL we work alternating classroom and computing cabinet.

V. METHODS OF EVALUATION

In the cases studied, the different types of assessments can be summarized as follows:

• Activities required of resolving and presenting to teachers, for correction and subsequent return. His approval granted in the course regularly and enables access to the final exam

• Group activities that give teachers be submitted for correction and give credit to achieve for promotion exam.

• Partial evaluations, usually two sets and an instance recovery.

• Final exam that certifies the subject according to their objectives and criteria

The following table shows the implementation of University assessment methods required to prove the matter.

Evaluation Method	UNR	UAI	UCEL
Required activities		X	X
Grupal activities		X	X
Partial evaluations	X	X	X
Final exam	X	X	X

Based on the dimensions for creating blended learning programs, and using the experience gained in the years of teaching we present a proposal for teaching the subject Statistics in other careers based on these four dimensions:

1) Structure of classroom and technological environments
2) Content and materials
3) Design of educational experiences
4) Development of learning strategies and self-regulation

As dimensions that traverse the entire learning activity, there are 5) cognition and 6) communication. Cognition refers to the construction of knowledge, the demand for participation and preparation by students is important to the subject, requires a different reasoning scheme to other subjects mathematics, communication area is the beginning of interaction with agents and the educational environment, the use of a common language, building critical thinking, are the basis for the development of meaningful learning of the subject.

CONCLUSION

The results of the database management and the use of statistical software and the presentation of the report on the analysis performed, allowing these students of careers where statistics is a tool, develop different reasoning of which they are accustomed to and we believe that we must further progress in the implementation of methodologies for teaching statistics with the critical support of new technologies.