TEACHING STATISTICS IN OTHER CAREERS
IN THE 21TH CENTURY IN ARGENTINA

Mag. Liliana C. Severino*
National University of Rosario, Argentina lilianaseve@gmail.com
lseverin@fcecon.unr.edu.ar

Est Marta M. Ruggieri
Universidad Nacional de Rosario – Argentina mruggieri@express.com.ar

Lic. Maria Belen Allasia
National University of Rosario, Argentina mballasia@gmail.com

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, new technologies 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.

Keywords: teaching statistics; new technologies in teaching

1. Introduction

TEACHING METHODOLOGIES APPLIED TO TEACHING STATISTICS

Educational programs are focused on the dissemination of concepts and tools to try to interpret the available information and its successful implementation will depend on our ability to take advantage of technological improvements in the teaching-learning process.
It is known that the process of educational innovation is essential in university activity, which is key to both student motivation to design quality education tailored to the needs of today's society.
This research will focus on the experience of applying methods with marked use of new technologies in teaching statistics, and succeed in establishing a flexible method for creating blended learning programs for which it is imperative that students have comprehensive knowledge and applied to interpret and resolve situations. For this, two key elements are: communication and cognitive processes
It has built a structured into five aspects related to scheme: context, teaching methods, materials, technological environment and evaluation methods.

I Context
Statistics is dictated in careers like Bachellor. In International Trade, Bachellor in Marketing, and Engineering and bachellor in Business Adminitration and Statistics I and Statistics II, are held at the

careers Public Accountant at the Abierta Interamericana University (UAI) and the University of Latin American Educational Center (UCEL) in the city of Rosario, Argentina. They are all quarterly subjects and covers topics of descriptive statistics, probability and inference for quantitative and qualitative variables.

Statistical Methodology is taught in Public Accountant and Statistics for Administration in the career of Business Administration, all at the Faculty of Economics and Statistics of the University Nacional de Rosario, Argentina

II. Teaching Methods

Some differences in the various colleges and careers are observed.

In business careers UAI and UCEL are classes of no more than 30 students 4 clock hours per week with presence modality in classroom for the issuance of theoretical and practical issues and some other on computer. Practical work is based on a guide for parctical work given to the students, and besides, for descriptive statistics and for Linar Simple Regression an Correlation we use software such as Excel and SPSS Statgraphic.

IIII. Materials

In all careers they have theorical and d a guide for Practical work, both printed, plus bibliography consultation, complemented permanently with activities, self-assessments and slides that are incorporated into the learning platform.

IV. Technological environment

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

At the UNR in the career of Accountant and Bachellor in Business Administration., becomes complex utilization of computers at the cabinet because the number of students per class is so large, not so in the career of Statistics where use is permanent, as well as the use of graphing calculators to School provided to students for use.

At UAI and UCELwe work alternating classroom and cabinet and also used in classroom notebooks for students to learn the use of statistical software.

V. Evaluation Methods

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

• Compulsory activities that must be addressed and submitted to teachers for correction and subsequent return.Its approval granted to be regularly in the course and enables access to the final exam

• Group activities submitted for correction and give credits to achieve an examination of indirect promotion.

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

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

The following table shows the application of assessment methods required by University observed to approve the subject

Evaluation method	UNR	UAI	UCEL
Compulsory activities		X	**X**
Group activities		X	X
Partial evaluations	X	X	X
Final exam	X	X	X

Based on the dimensions for creating mixed learning programs, and using the experience gained in years of teaching a proposal for teaching the subject Statistics presented in other careers is based on these 4 dimensions:

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

As dimensions spanning across 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 the student is important for the subject, requires a scheme different from other subjects of mathematical reasoning Area Communication is the principle 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.

5. Conclusions

The results obtained in the management of database and the use of statistical software with the corresponding report of the data anlysis allows these students of careers;where statistics is a tool for desion making, to develop different reasoning to which they are accustomed and we believe in further progress in the implementation of methodologies for teaching statistics with key support especially computer technology. And nowadays also in smartphones

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