EVALUATION OF COMPUTATIONAL TOOLS
USED IN STATISTICS CLASSES IN LABORATORY

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THE PROBLEM
Graduation courses at the Methodist University of Piracicaba (UNIMEP) mostly offer in the curricular framework the discipline of Statistics, with T (theoretical) or TP (theoretical-practical) perspective, generally with 2 or 4 hours per week and with programmed contents which address all the basic statistics. Amongst these courses, is a Computer Science course whose content offers two disciplines from the area of Statistics with a TP perspective for 4 hours/week, making possible the use of computational resources. We believe that developing the activities of Statistics education in an interactive way, or making it possible for students to develop the ability to manipulate data sets, contributes to a quality professional education. In this context, this research presents an evaluation of three software tools used to develop the practical activities of Basic Statistics disciplines. The evaluations aims were mainly: to assess the adequacy of EXCEL, R and STATGRAPHICS PLUS 5.1 for the teaching of the discipline; to identify the characteristics that constitute positive and negative aspects in each one of them, with relation to the user; and to identify the students’ suggestions for the improvement of the teaching of practical laboratory classes.

METHODOLOGY
This is an exploratory research searching for the perception of learning of practical disciplines, and was completed by the end of June, 2005, marking the end of the learning semester. The voluntary sample was composed of 13 pupils (from a possible universe of 16). The instrument used was a half-structured questionnaire with both closed and open questions, divided in three parts as follows: four questions on the profile, seven questions on the perception of discipline, and 15 questions, in Likert scale, on the characteristics of the available computational tools. The data collection instrument was applied in the last class of the learning period. The data was analyzed in both descriptively and analytically. The internal consistency of the questionnaire was measured by the Cronbach alpha coefficient, that considers low values lesser that 0.70 (Cronbach, 1951), and the test of Friedman that compares the characteristics of the software. The analysis was carried out using SPSS for Windows.

RESULTS
In the student sample, 85% were attending the discipline for the first time. The internal consistency values were 0.60 for the perception of disciplines scale and 0.92 for the evaluation of software. This indicated that the instrument had high consistency. The results also disclosed significant difference between software, relating to the facility of obtaining statistical measures and for analysis of correlation and simple linear regression. However, it was shown, in the opinion of these learners, that EXCEL presents greater facility to insert data (p=0.014), construct tables (p=0.04) and graphs (p=0.02) and consult the aid tool (p=0.04).

FINAL CONSIDERATIONS
These results confirm that EXCEL has been better values as an institutional resource in laboratories of practical Statistics, lesson. Besides offering the basic statistical functions and being flexible to program functions not available, EXCEL has the advantage of being widely known and available in the academic and professional environment, facilitating the access of the students out of the classroom. Moreover, the price difference between EXCEL and other software used in Statistics is an important factor for use with learning.