

Seminário

Grupo de Probabilidades e Estatística

18 de dezembro de 2024 14:00

Reunião Zoom

A problem-based approach to learning statistics in higher education: Exemplification and next steps

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Abstract

This lecture introduces an alternative problem-solving methodology aimed at addressing the students struggle, to identify the most appropriate statistical methods for a given research question or study objective and to effectively present descriptive and inferential results.

Following an introductory module on descriptive and inferential statistics notions, students are introduced to five common research questions frequently encountered in studies (e.g., "Is the difference significant?"). For each research question, a detailed flowchart is provided, outlining relevant statistical tests and corresponding scripts. These scripts are structured into four main components: (1) Problem presentation, (2) Descriptive statistics, (3) Statistical inference, and (4) Results presentation with a step-by-step guidance. Throughout the semester, students apply this methodology by working through the provided scripts.

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This lecture will present selected flowcharts and scripts used in this approach, which have been implemented in several curricular units (CUs): one CU in the Mathematics undergraduate program, two CUs in a Master's program in Medical Statistics (both using R), and one CU in health-related Master's programs (using SPSS). In the final part, a potential experimental design will be proposed to evaluate differences between the traditional teaching methodology and the problem-solving approach presented.

Link Zoom: <https://videoconf-colibri.zoom.us/j/95623374501?pwd=gwvYr8eeRcXOUb21xWLLs4OazN3UYG.1>

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