CONSIDERING STUDENTS' COMPUTER LITERACY IN STATISTICAL CODING COURSES

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When teaching entry-level statistical programming at universities, educators can face the problem of spending valuable time on explaining computer basics, such as dealing with file paths and file management. To better understand the knowledge gaps of current students, we conducted a detailed online survey in an introduction to statistical programming course with social science students at a major German university. We asked students about their usage of different devices, skill level regarding a selection of computer tasks, and patterns of computational thinking as well as their previous experiences with computers and computer science.

Our goal was to explore whether students differ a lot in their computer literacy, whether gaps in knowledge can be specifically addressed during the course, and whether awareness for these predispositions helps running the course. We also consider how the results of the survey relate to the instructors' experience. At the same time, the data collection served as a small-scale test for obtaining this type of information, contemplating how useful it can be for conducting a statistical programming course.

The outcomes suggest that students are not as uniformly skilled in basic computer tasks as might be expected at university level in a highly digitalized society. The growing use of smartphones and tablets, which allow for intuitive use of electronic tasks that once required a computer, may lead to a lack of experience with tasks on an actual computer, especially regarding areas which are typically hidden on mobile devices such as the path structure. Through better understanding the specific needs and skills of the students, the teaching process can be tailored to support their learning and ensure successful course completion.

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