First Year Statistics Units across Three Continents: Similarities and Differences

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Statistical literacy is a key ability expected of citizens in information-laden societies and is a necessary component of adults' numeracy and literacy. Thus, from an educational perspective, it is crucial to enable students to interpret and critically evaluate statistical information, understand data-related arguments, build intuition about data, and make reasoned judgments and decisions. In order to accomplish this goal, many higher education degree programs have since included statistics courses in their curriculums to better prepare their graduates for the work environment, and enable them to deploy evidence based practices in their work.

Unfortunately, statistics is commonly viewed as a difficult and unpleasant topic. Students often perceive statistics courses as a burden and encounter difficulties. Because statistics is a compulsory course in many programs, students sometimes fail to pass the exams and these failing grades may cause students to abandon their academic and professional aspirations. Research focused on improving statistical education may be able to ameliorate all these problems.

To attain this goal it is essential to identify variables that attenuate or accentuate statistical learning and determine the nature of barriers faced by students. Among them, it is important to investigate the approach that students adopt in learning statistics, as well as reasons for students adopting different learning approaches. Culture background, individual characteristics, and course characteristics can be related to different learning approaches. Thus, to investigate these topics a substantive contribution could derive from the networking activity among different universities involved in enhancing statistical learning, and from sharing the same instrument to investigate the learning approaches.

In the present paper, the similarities and differences of first year statistics student cohorts (enrolled in different degree as engineer, psychology, economics, agriculture) from Europe, South-America, and Australia universities were investigated using a questionnaire-based survey. These represents a preliminary step to then investigate similarities and difference in students' learning approaches using different language versions of the Approaches and Study Skills Inventory for Students (ASSIST).

Key Words: Statistics education; Statistics learning approaches; cross-country survey; university students.