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# Crynoldebau / abstracts

Evaluating On-line Assessment

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Within IBERS, statistics is taught to all second year students as an on-line course providing basic statistical theory and its practical application in SPSS. Both components are supported by formative and summative quizzes in QMP. Part of the assessment is an open-book, on-line exam in QMP. Analysis of the results of the exam provides insight into the effectiveness of this method of teaching and provides a means of identifying key concepts that have either been misconstrued or not fully understood. The 39 questions were grouped according to type, specifically: descriptive statistics, understanding the experimental scenario, understanding the SPSS output, interpreting the SPSS output and experimental design Overall, performance in examination was good with an average mark of 72% and a failure rate of only 3%. Analysis of results by statistical test showed a high level of consistency, however, analysis by type of question showed up larger differences. It was found that a high proportion of students were confident in answering questions relating to an understanding of the experimental scenario presented (89% correct) and understanding the SPSS output (80% correct). However, interpretation of the statistical analyses was less well understood (38% correct) as was the section dealing with the choice of statistical test in a given investigative scenario (52% correct). There were specific key concepts that were poorly answered overall indicating a widespread lack of understanding. These were identified as i) the meaning of, and relationship between, the Correlation Coefficient (r) and the Coefficient of Determination (r2), ii) the choice of an appropriate P value when reporting results and iii) the use of superscripts again when reporting results. Based on this analysis, the teaching material will be modified in order to aid understanding of these key concepts.