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# Multiple Choice Test: a comparison on three different faculties

## INTRODUCTION

In Italian Universities, *multiple choice tests*, an examination methodology particularly popular in the United States, is becoming not only an admission or vocational guidance tool, but also a form of examination within the course itself.

University of Verona has for long been developing and utilizing complex methodologies, like item randomization and optical scanning providing automatic score conversion, to process multiple choice tests.

## OBJECTIVE

Aim of this article is to verify similar performances on the same *Business Management* multiple choice test, taken by three groups of students from different faculties: law, training science, and computer science.

This work is one of our efforts to control the quality of the assessment services offered to the students by the Docimological Center.

## METHOD

A proper subsample has been selected to guarantee enough uniform experimental conditions across the three groups. A Chi Square test has been performed to verify that there were no significant performance differences in terms of examination failures. The Kuder-Richardson Formula 20 has been used to measure the *dichotomous* items' reliability (zero for incorrect answers and one for correct answers).

## RESULTS

### Performance differences

- Assuming a predetermined alpha level of significance equal to 0.05, no significant differences were observed through a Chi Square test with 2 degrees of freedom. It means that the performances in terms of percentages of passed/failed examinations are independent from the particular faculty. The contingency table is showed below. Items reliability has been measured by mean of the KR-20 formula. Indexes range from 0.84 to 0.95, meaning that the items show good internal consistency reliability.

### Open issues and next steps

- We are aware of the current early stage status of this research, so we plan to continue it in order to keep making sure that the multiple choice tests being developed are eligible to be considered reliable ones.

	Education Science	Computer Science	Law	Total
pass	319 (60 %)	255 (67%)	95 (60 %)	669 (63%)
failed	204 (40%)	124 (33%)	62 (40%)	390 (37%)
Total	523	379	157	1059

## DISCUSSION

The number of relevant performance-related variables is potentially huge. However, that has not discouraged us and has led us to investigate further variables by mean of new extra student questionnaires, which probably will enlighten us for future results that will be preferably obtained by mean of a multivariate statistics approach.



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