RETENTION OF SUBJECT-MATTER IN PHYSICAL SCIENCE SURVEY COURSES

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Recently there has been initiated at Oklahoma A. and M. College a policy of requiring comprehensive examinations in certain specified courses. These comprehensive examinations are given at the end of the second semester and cover the entire year's work. One of the courses in which a comprehensive examination is required is the physical science survey course. The students in this course are largely from the School of Arts and Science, School of Education, and the School of Commerce.

Last spring at the time of giving the comprehensive examination, the instructors in the physical science survey course decided that in order to cover the first semester's work they would repeat verbatim the test given the first semester. This test consisted of 125 items of the multiple-choice type.

This investigation involves a study of the scores of the students who took the test on January 16 as a final examination, and the scores of the same students who took the same test on May 25, a semester later, as a part of the comprehensive examination covering the entire year's work.

Statistical study of both tests indicate the following results: The total number of cases was 251. The range of scores was from 62 to 116 the first semester and from 54 to 116 the second semester. The high score of 116 each semester was made by the same individual. Forty-six students made a higher score the second time than they did the first time, while 13 made the same score on each test. The first test papers were not available to the students nor did they know that the test would be repeated. Probably material presented the second semester reenforced that presented the second semester. The greatest gain was by an individual who made 91 on the first test and 104 on the second test. The greatest loss was by an individual who made 100 on the first test and 66 on the second test.

The calculated mean for the first test was 89.29 and for the second test 84.15. Calculations shows that the total test scores of the second test were 83 per cent of the total of the first test scores. This loss is not as great as one would ordinarily have expected.

The coefficient of correlation between the two sets of scores was +.7130. This is a quite high correlation for this type of testing and means that a duplication of the tests would probably give similar results for the groups as a whole, but would have no predictive value for individual scores.

The standard deviation for the first test was 11.5179 and for the second test was 12.4416. This indicates wider variation in the second test scores than in the first test scores, although the first test scores had a higher mean. These standard deviation scores indicate that 68.26 per cent of the cases should have scores on the first test that range between 77.77 and 100.81 and on the second test between 71.71 and 96.59. This also indicates that there should be no score below 54.74 nor above 123.84 on the first test. Actual low and high scores were 62 and 116. For the second test no scores should have been below 46.83 nor above 121.47. The actual low and high scores were 54 and 116.

A calculation of the probable error adds a second confirmation as there were no scores below or above 4.5 P.E.

The calculated critical ratio of 4.80 means that a repetition of the above tests would give the same results in more than 999 cases out of 1,000.