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A Study of the Intelligence of University Students in Egypt

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Results are reported for intelligence assessed with the Standard Progressive Matrices of a sample of students at Ain-Shams University in Cairo ($N = 2147$). The sample obtained a British IQ of 81. Men students obtained a higher average IQ than women students 0.87 IQ points. Science students obtained a higher mean score than arts students by 11.5 IQ points. Men students had greater variability than the women students.

Key Words: Intelligence; Standard Progressive Matrices; Egypt; Gender differences.

Introduction

In 1988 the first author published a study of the intelligence of 452 university students in Egypt (Abdel-Khalek, 1988). The students were recruited from the arts faculty of the University of Alexandria, and from the Higher Institute of Social Work in Alexandria, Egypt. Intelligence was measured by the Standard Progressive Matrices. The men students obtained an average score of 44.2, equivalent to the 10th percentile on the 1992 British standardization sample given in Raven, Raven and Court (1998, p.73) and a British IQ of 81. The women students obtained an average score of 40.8, equivalent to the 7th percentile on the 1992 British standardization sample given in Raven et al.(1998, p.73) and a British IQ of 78.

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These IQs should be raised by 1 IQ point because the Egyptian data were obtained six years before the British standardization data, giving the men students a British IQ of 82 and the women students a British IQ of 79. We report here the results of a more recent study of the intelligence of university students in Egypt with a large sample, in order to ascertain whether scores have increased over time, and whether the higher scores obtained by men is still present.

Method

The sample consisted of under-graduates and post-graduates in the faculty of education at Ain-Shams university in Cairo, Egypt. Ain-Shams is a state university and is widely regarded as the third university in terms of status in Egypt. The sample was tested in the year 2000 and consisted of 586 men and 1561 women with a mean age of 20.5 years, and were tested in small group sessions with the Standard Progressive Matrices (Raven, Raven & Court, 2000). The sample were from all the academic years and from science (22.3 %) and arts (77.7%) specialties (Nour-Eddin, 2002).

Results

The results are shown in Table 1. This gives the scores on the Standard Progressive Matrices for men and women for science and arts students. The right hand columns give the British percentiles of these scores and their British IQ equivalents based on the British 1992 standardization data given by Raven et al. (2000: Table SPM8, p.81).

Table 1. Scores on the Standard Progressive Matrices

Subject	Sex	N	Mean	SD	British Percentile	British IQ
Science	Men	214	49.44	9.72	27	91
	Women	393	49.04	8.50	25	90
Arts	Men	372	42.18	9.96	8	79
	Women	1168	42.69	9.26	8	79
Total	Men	586	44.83	9.87	10	81
	Women	1561	44.28	9.07	10	81

Discussion

The results show four interesting features. First, the British IQ of 81 for the sample is closely similar to the results obtained by the first author in 1988 for students from the faculty of arts at the University of Alexandria and from the Higher Institute of Social Work in Alexandria who obtained a British IQ of 80.5 (Abdel-Khalek, 1988). It may appear therefore that the British IQ of students in the two studies did not increase during the twelve year period 1988-2000. However, it should be noted that the samples in the earlier study and the present study are not strictly comparable. The samples were drawn from different faculties in different universities. The sample in the earlier study consisted of arts and social studies students, whereas the sample in the present study consisted of students in the faculty of education and contained mainly the arts and social studies students together with some science students, who scored higher than the arts and social studies students. In view of these differences, we think that no conclusion can be drawn regarding whether the IQ of university students has changed between the years of the two studies.

Second, the results of the present study confirm those of the earlier study in finding that men students obtained a higher average IQ than women students. In the present study the men students obtained an average score of 44.83 and the women students obtained an average score of 44.28. The difference is 0.55. Dividing this by the standard deviation of 9.47 =.058*d* (standard deviation units) and is equivalent to .87 IQ points. This is smaller than the 3 IQ point advantage obtained by men students in the earlier study but is nevertheless consistent with the higher average IQ obtained by men students in the meta-analysis of 22 studies of sex

differences in university students on the Progressive Matrices in which males obtained a higher mean than females by an average of 4.6 IQ points (Irwing & Lynn, 2005). A possible explanation for the smaller sex difference in the present study is that education attracts a lower quality of men than of women.

A third point of interest in the present study is that science students obtained a higher mean score than arts students by 11.5 IQ points. This replicates a number of studies in other countries. In Britain, science students obtained the higher average IQ by 8.5 IQ points than arts students on the AH5 test (Heim, 1968, p.16), while on the AH6 test science students obtained a higher IQ than arts students by 16.7 IQ points (Heim, Watts & Simmonds, 1983). Higher IQs of science students have also been reported among students at the University of Khartoum in which students studying science (Electrical Engineering, Medicine, Dentistry and Pharmacy, n=349) obtained an average IQ approximately 30 IQ points higher IQs than students studying primary education (n=125) (Khaleefa, Amer & Lynn, 2014). In Libya a study of a sample of 800 students at the University of Omar Al–Mukhtar tested with the Standard Progressive Matrices test found that for both men and women the science students obtained higher average scores than the arts students by approximately 2 IQ points (Al-Shahomee & Lynn). This is a smaller difference than in the other studies but is statistically significant. In the United States, science students obtained higher average IQs than arts students in a study of scores on the analytic test of the Graduate Record Examination (GRE) obtained by over 1 million students applying to graduate schools in the years 1994-1997 (Templer & Arikawa, 2006). The analytic test is a non-verbal reasoning test measuring the same ability as the SPM. In this study students studying Electrical Engineering scored approximately 11 IQ points higher than students of Primary Education.

Fourth, the men students had greater variability than the women students shown by their greater standard deviation of 9.87 compared with 9.07. This confirms the frequent contention that males have greater variability than females that has been made from the early years of the twentieth century, e.g., by Havelock Ellis (1904), Thorndike (1910), Terman (1916) and Eysenck (1981, p. 42).

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