

Gender differences in achievements among students of the Iraqi college of medicine

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Abstract

This study was conducted to test the hypothesis that the duration of time spent by the student inside the examination rooms answering the all kinds of written examination questions has some kind of a positive effect on the final score he will get from that exam. And if there are gender differences in this respect. *Students and methods:*

Data on the final examinations of the autumn quarter was gathered on 892 examinations conducted at the end of this quarter, this included male participants of 566 and females of 326. Examinations were on twenty different subjects, including all of the first five years of the undergraduate students of Iraqi College of Medicine for the academic year 2002 – 2003. The scheduled time of the examinations was 3 hours. A questionnaire for that purpose was constructed by the researchers and filled by the examination supervisors of the examination rooms. The scores we got from the official records of the examination committee of the college. Information gathered included year or stage of the student, subject of examination, gender, duration of time spent by every student inside the examination room and final score on that examination. data were entered into a computer statistical program SPSS 7.5 and statistically analyzed. The results showed

1. The mean duration of stay of students in examination rooms was 125.01 SD=39.32 out of 180 minutes.
2. Females significantly spend more time in the examination rooms ($p=0.008$), but they do not achieve better marks for this.
3. No significant gender difference in mark acquisition although females registered insignificantly better marks.
4. Mark is affected by the duration of time spent in examination rooms significant positive correlation ($p=0.001$).
5. However total duration of stay affected the final mark for males ($p=0.01$), but did not affect that of the females ($p=0.27$)
6. Females significantly spend more time in the examination rooms ($p=0.008$), but they do not achieve better marks for this.
7. Males benefit from time spent in getting significantly better results ($p=0.01$)
8. According to grades or year or stage of the student the longest time spent was significantly more in the first year ($p=0.0001$) but there was no correlation with the year. The highest marks were recorded by the first year students ($p=0.0001$)

but again there was no correlation of the mark with the year of the student. The conclusions showed that The average student will leave the examination rooms, specially and significantly males ($p=0.008$), before the time is up. Total duration of stay affected the final mark for males ($p=0.01$), but did not affect that of the females ($p=0.27$). Females significantly spend more time in the examination rooms ($p=0.008$), but they do not achieve better marks for this. Males benefit from time spent in getting significantly better results ($p=0.01$)

Introduction

The process of education is primarily concerned with the development of cognitive abilities which is different from training which refers to the preparation for specific tasks (1) Criticisms are made of modern teaching because too much emphasis is given to theory, that is to say stressing on cognitive side of educational process. (2) To assess this side is the written examinations conducted on students to test their cognitive abilities. Research work show that there is a gender difference in performance (3). This research is tackling a disputed issue on the conduct of students regarding the duration of time spent on written examination inside examination rooms and if this have any effect on the score they get in that exam, and whether there are some gender differences in this respect. Final written examinations include a scheduled time period of three hours for students to solve the questions and problems they are presented with. Arguments always go on about if duration spent by students might or might not affect their outcome represented by the score they will get, and if there are gender differences in this respect.

Students and methods

Information on a total of 892 written examinations sessions conducted on the students of the years (stages) 1 to 5 years of Iraqi College of Medicine was gathered. This included information on 566 examination sessions of male participants and 326 females. The examinations were the

final written examinations on all the subjects of the curricula of the first five years of the college, twenty different medical subjects in total. The examination sessions was of the final examinations of the autumn course of the academic year 2002 – 2003. The scheduled time of examination session was three hours. Data was collected using a simple questionnaire constructed by the authors which included information on year (stage) of the student, subject, gender and duration of time spent for that particular examination session. Taking all the students into the study excluded the effect of bias. The only possible bias could be the randomized non differential. The final examination score (mark) for a particular session for a particular student was accessed through the official records of the examination committee of the college. Information was entered into an SPSS 7.5 statistical computer program and analyzed using different statistical analysis techniques. Measurements adopted was the calculation of means and comparing them also correlation and regression analysis.

Results

It was found that for all students examined the mean duration of time spent in the examination rooms was 125.01 minute ($SD=\pm 38.25$). (69.45%) out of the total scheduled time of 180 minutes 95% confidence interval of 122.5 to 127.52, the median was 130 minutes. Maximum period spent was 180 minutes and minimum period was

10 minutes. The mean final score (mark) of all the examinations for all the subjects for all the students was 71.09 % (SD=±9.95) 95% confidence interval was 70.3652 to 71.6738 percent marks. The median was 71.1884 minimum 19 degrees maximum 98.30, as shown in Table 1. Distribution of students according to year (stage) of the faculty, mean was = 3.09 (95% C.I. 3.01 to 3.17) SD =±1.274, which means that their distribution was a normal one

Table 1: means of durations of time spent in examination rooms and means of final scores students got. In general and gender wise.

duration	Gender	Number	Mean	95% C.I.	Median	SD	T value	P value
	Female	326	129.51	125.59 to 133.4	132.5	35.94	2.673	0.008
	Male	566	122.42	119 to 125.67	125	39.32		
Total		892	125.01	122.5 to 127.52	130	38.25		
Mark	female	326	71.07	70.04 to 72.11	71.9	9.48	0.131	0.896
	Male	566	70.99	70.14 to 71.83	71	10.22		
Total		892	71.02	70.36 to 71.67	71.3	9.95		

According to gender there was a significant difference between the mean duration the students stay in the examination room between females of 129.51 minutes (SD=35.94), and males the mean of which was 122.42 minutes (SD=39.32), (p=0.008), females seem to spend more time in the examination rooms compared to males. On the other hand there was no significant difference in the mark acquisition between males and females although females registered non significant better marks than males (p=0.896). Data were tested for correlation between mark acquisition and duration of time spent answering examination questions. Duration was taken as the independent factor or variable. The final mark or score as the dependent variable. The result showed a significant correlation of r= 0.114 with a p value of 0.001 even after controlling for different years of study. A bivariate linear regression analysis was done, and Table 2 Shows the results including the regression

equation of predicting the mark for every minute spent in the examination room.

Table 2: bivariate linear regression analysis predicting mark for every minute spent in the examination room. General and gender wise.

Gender	B	Beta	T value	P value	Regression Equation
Female	68.987	0.061	1.103	0.271	Mark=68.987+0.061*duration
Male	66.534	0.140	3.354	0.01	Mark=66.534+0.140*duration
Total	67.311	0.114	3.423	0.001	Mark=67.311+0.114*duration

Generally it was found that the mark is affected significantly by the duration of time the student spend in the examination rooms (p=0.001).

It was found that in case of female duration does not affect the mark significantly (p=0.271), but it does with the males (p=0.01). That means that females spend significantly more time in the examination rooms compared with males but males benefit from the time spent more than the females in getting better results significantly.

Table 3: Duration of time spent in the examination rooms and final scores students got according to year (stage) of students.

Year	Duration		ANOVA		Mark		ANOVA	
	Mean	95% confidence interval	F	significance	Mean	95% confidence interval	F	significance
1	144.36	136.81 to 150.71	28.645	0.0001	71.45	75.24 to 79.66	17.668	0.0001
2	114.42	109.44 to 119.398			70.56	69.199 to 71.926		
3	136.57	131.67 to 141.47			68.56	67.31 to 69.81		
4	105.76	100.37 to 111.15			68.999	67.897 to 70.108		
5	131.68	127.13 to 136.23			73.82	72.334 to 74.72		
Total	125.01	122.5 to 127.52			71.019	70.267 to 71.67		

Regarding the duration it was found that there was a significant difference in the mean of time spent in the examination rooms according to the year or stage (p=0.0001) the longest was in the first year (144.36 minutes) and the shortest in the 4th year (105.76 minutes) from longest to shortest durations the sequence was first year third, fifth, second and fourth, as shown in Table 3.

However when we did the correlation analysis to find if there is any according to years or stage of the student in terms of mean duration of stay in the examination rooms we found r=-0.336, p=0.290 which means that there is no correlation, but in general the duration decreased according to year but

insignificantly. As for the mark as shown in Table 3, it was found that there was a significant difference in the value of mark according to year ($p=0.0001$), that the highest marks were found among students of the first year 77.45%, the lowest was in the third 68.56% and fourth year 68.899%. The order of marks from the highest to the lowest was as follows the first, the fifth, the second, the fourth and the third. However when we did a correlation test between the year or stage of the student and the mean mark for each year we found that there was no significant correlation detected $r=-0.405, p=0.249$, the mark decreased with the year but insignificantly.

Discussions

Gender differences in performance and achievement is an issue long disputed by research work all over the World. This study was embarked on to find some of the outcomes in this disputed area and accordingly it was found that the mean duration of time spent by all the students was less than three quarters of the scheduled time (69.45% out of the 180 minutes), that means that the average student will leave the examination room before the time is up. Females significantly stay more time in the examination rooms than males ($p=0.008$) however there was no significant difference in score acquisition between males and females this means either females are more slow in other words males are more hasty and when males spend more time in the examination room they benefit from it in mark acquisition, or that female may stay longer in response to the stress of the examination because women subjectively experience more stress than males (4). Time was found to be a decisive factor for score acquisition ($p=0.001$) significantly specially for males ($p=0.01$). Which

means that males benefit more from staying longer than females who do not benefit from a longer stay. Females significantly stay longer than males in the examination rooms ($p=0.008$) but they do not benefit from that in achieving better scores. Longest time spent in the examination rooms was by the students of the first year ($p=0.0001$). Highest marks recorded was also that of the first year ($p=0.0001$). There was no correlation of the time spent or mark acquisition with the year of the student.

To a certain degree anxiety can enhance performance by making the person more alert active and motivated. However too much anxiety causes a decrease in performance (5) and females may stay longer in response to the stress of the examination because women subjectively experience more stress than males (4). Students in the examination rooms are under stress and anxiety, and whenever the number of examinations increase the anxiety increase. In this environment the only important factor to be addressed is the time factor and the duration it takes for the examinees to spend in the examination rooms

Conclusions

1. The mean duration of stay of students in examination rooms was 125.01 SD=39.32 out of 180 minutes. Which means that the average student will leave the examination rooms, specially and significantly males ($p=0.008$), before the time is up.
2. Females significantly spend more time ($p=0.008$) in examination rooms than males, which means that females are more slow or males are more hasty in leaving the examination rooms.
3. No significant difference in mark acquisition although females registered insignificantly better

marks. This means that males benefit from time spent in getting better results than females of the time spent.

4. Mark is affected by the duration of time spent in examination rooms significant positive correlation ($p=0.001$) even after controlling for the year. Bivariate regression gave the same results.
5. However total duration of stay affected the final mark for males ($p=0.01$), but did not affect that of the females ($p=0.27$)
6. Females significantly spend more time in the examination rooms ($p=0.008$), but they do not achieve better marks for this.
7. Males benefit from time spent in getting significantly better results ($p=0.01$)
8. According to grades or year or stage of the student the longest time spent was significantly more in the first year ($p=0.0001$) but there was no correlation with the year. The highest marks were recorded by the first year students ($p=0.0001$) but again there was no correlation of the mark with the year of the student.

Recommendations

Written examinations were taken regardless of the type of questions used, if data were to be studied in this respect we recommend further studies

in this respect which addresses this issue.

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تقييم فروقات الاداء بين طلبة الكلية الطبية العراقية

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الخلاصة

اجريت هذه الدراسة للتحقق من الافتراض القائل بأن الفترة الزمنية التي يقضيها الطالب داخل القاعات الامتحانية لغرض الاجابة على كافة انواع الاسئلة الامتحانية التحريرية لها تأثير ايجابي على الدرجة النهائية التي يحصل عليها الطالب من هذه الامتحانات ' وللتحقق ايضا فيما اذا كانت هناك فروقات في هذا المجال بين الجنسين تم جمع وترتيب البيانات المطلوبة لهذه الدراسة خلال الامتحانات النهائية للربع الخريفي للعام الدراسي 2002-2003 وتضمنت 892 امتحانا بمشاركة 566 طالبا و 326 طالبة ' وشملت الدراسة عشرين مادة دراسية مختلفة لطلبة السنوات الخمس الاولى في الكلية الطبية العراقية . كان الوقت المحدد لاداء كافة الامتحانات هو ثلاث ساعات ' وجمعت المعلومات المطلوبة من خلال استبيان اعدت الباحثة لهذا الغرض وملئ من قبل المشرفين على اداء الامتحانات في القاعات الامتحانية . اما الدرجات النهائية للامتحانات فقد تم الحصول عليها رسميا من اللجنة الامتحانية تضمن الاستبيان المعلومات الاتية المرحلة الدراسية للطالب ' مادة الامتحان ' الجنس ' الفترة الزمنية التي يقضيها كل طالب في القاعة الامتحانية واخيرا الدرجة النهائية التي يحصل عليها الطالب في الامتحان . ادخلت المعلومات الى برنامج الحاسوب الاحصائي SPSS

7.5 واجري عليها تحليل احصائي ' وكانت النتائج التي تم الحصول عليها على النحو الاتي :

- 1 . معدل بقاء الطلبة في القاعات الامتحانية هو 125.01 دقيقة (SD =39.32) من اصل 180 دقيقة .
- 2 . كانت فترة بقاء الطالبات في القاعات الامتحانية اطول معنويا (P=0.008) ولكن دون تحقيق درجات امتحانية افضل .
- 3 . لم تظهر فروقات احصائية ذات شأن بين الجنسين من الطلبة في اكتساب الدرجات الامتحانية بالرغم من حصول الطالبات على درجات افضل ولكنها غير ذات شأن احصائي .
- 4 . تأثرت الدرجة الامتحانية ايجابيا بفترة البقاء في القاعات الامتحانية كما تظهره قيمة الارتباط المعنوي الموجب (P=0.01) .
- 5 . الفترة الكلية للبقاء في القاعات الامتحانية كان لها تأثير على الدرجات النهائية بالنسبة للطلبة الذكور (P=0.01) ولكن لم يحصل مثل هذا التأثير بالنسبة للطالبات (P=0.27) .
- 6 . قضت الطالبات فترة زمنية اطول في القاعات الامتحانية (P=0.008) ولكن دون التوصل الى نتائج امتحانية افضل (P=0.01) .
- 7 . استفاد الطلبة الذكور من فترة بقائهم في القاعات الامتحانية للحصول على نتائج امتحانية افضل (P=0.01) .
- 8 . قضى طلبة المرحلة الدراسية الاولى فترة زمنية اطول من غيرهم في القاعات الامتحانية (P=0.0001) وحقق هؤلاء الطلبة درجات امتحانية اعلى (P=0.0001) ولكن مع ذلك لم يتحقق عامل ارتباط للدرجات الامتحانية مع المرحلة الدراسية للطالب .