Academic Achievement of Talented Students at Isfahan University of Medical Sciences

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Abstract

Background. *The necessity of identifying talented students to develop appropriate programs to educate them is well recognized. Special programs for talented students were started in Isfahan University of Medical Sciences in year 2000. This study analyses academic achievement of talented students before attending these programs, and compares them to those who are not considered as talented .*

Methods. *Through a retrospective cohort study students admitted in the university in either 1997 or 1998 were categorized as"talented" and "non-talented" based on the criteria employed by National Organization for Educational Measurement. The two groups were matched according to their courses of study, number of passed units, and the semesters passing the corresponding units. From each student's file, the total average, average of each semester, and the courses of study were extracted.*

Results. *There were 73 talented (36 female and 37 male) and 401 non-talented students. Of talented students, 50 were studying medicine and 23 were studying dentistry. With increment of passed semesters, term averages were decreased. The slope of average decrements among talented students were not significantly different from that of "non-talented" ones.*

Conclusion. *Although term average is not the only criterion for assessment of academic achievement, it seems that current University programs were not effective to improve academic achievement of talented students ,or at least , maintain their status.*

Key words. *Talented, Academic achievement, Isfahan University of Medical Sciences*

Introduction

Nowadays, identification and programming for gifted and talented (GT) students is not only a part of universities curriculum in developed countries (1), but also is accounted as a model of progress for developing countries (2). Although the best time for identification of GT students is at childhood (3), but several investigators have developed methods for identification of GTs before entering colleges (4). Then, they have proposed special measures for those identified, for example, acceleration or compacting the usual curriculum content, training the managers and teachers of GTs about the concept and needs of GTs, and annual evaluation of these programs (5).

In regards to GT education, universities play two roles:

1- Conducting programs to educate GTs from elementary to high school: examples are Colorado University training program for students of elementary and middle schools (GTs go to some classes at the university on Saturday afternoons) (6) and Georgia University program for high school GTs (7). Such programs are also found in other countries such as UK (8).

2- Designing and conducting programs for their own GT students. Examples are Johns Hopkins University program (provision of financial aids, accelerated programs and Early Entrance Program for GTs) (9) and Brazil universities programs (facilities such as special mentors, special lectures, cooperation with conferences and researches, laboratory visits are provided for GT students) (10).

Iranian GT Committee for university students has started to work since 1996. Each year it introduces GTs to Iranian Universities according to several criteria (11). Isfahan Talented Students' Office has started to work since July 2000. And as a preliminary work to evaluate the academic achievement of GTs and as a situational analysis, this study was designed. It will also provide a basis for the evaluation of further interventions.

Methods

This is a retrospective cohort study. National Organization for Educational Measurement defined students who gained scores more than 2.5 standard deviations above the mean score in national university admission test as GTs. GT students who had passed some of the courses in universities other than Isfahan University of Medical Sciences were not included. The comparison group "non- talented" consisted of students who were matched with the GTs according to year of admission and type and date of passed courses. Students entering the university in 1999 were omitted from the study because they had not passed more than one semester at the University.

Grade Point Averages (GPA) and term averages of students were used as indicators of academic achievement. Then the trend of each student's term averages across succeeding semesters was observed .

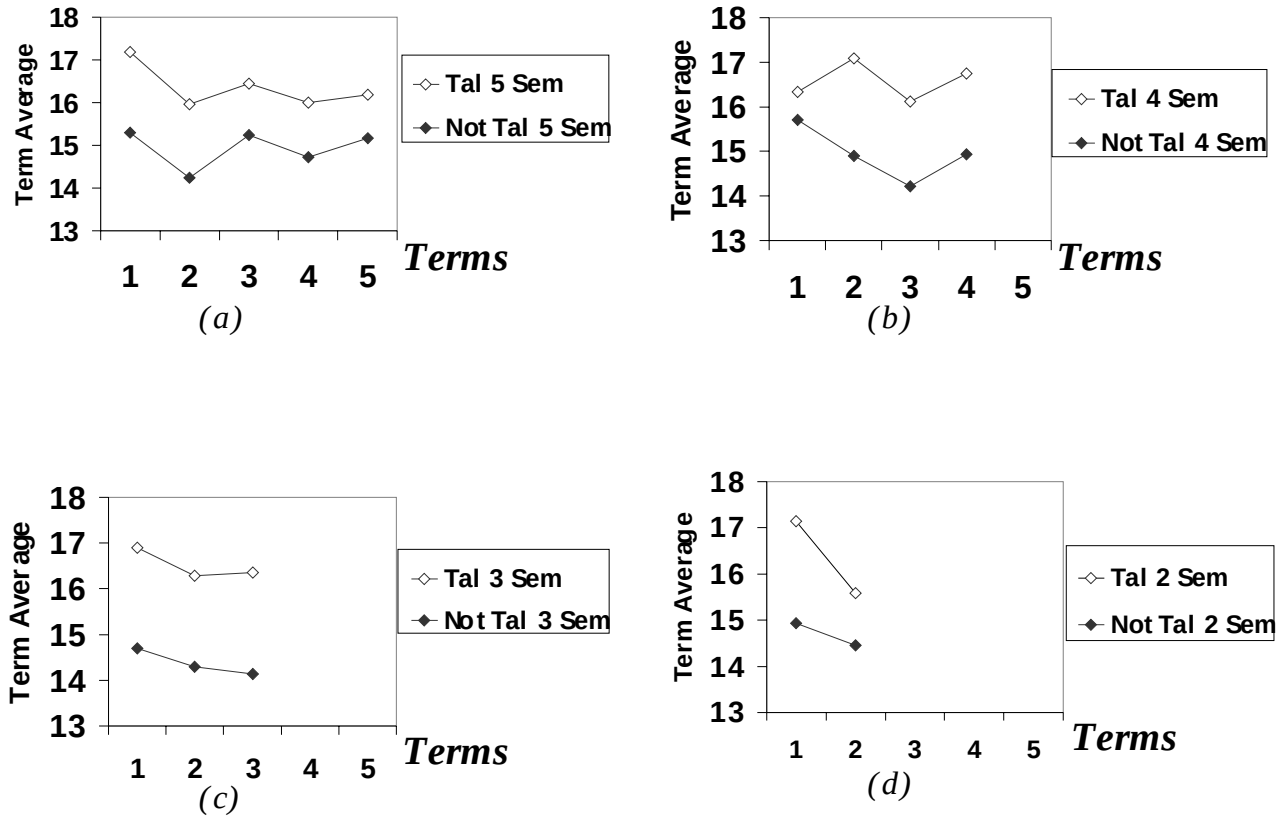
Descriptive statistics was represented as mean±standard error of mean. Factorial (type one) repeated measure analysis of variance was used for analysis. Scheffe post hoc method was used for assessing the difference between groups, and linear trend was used for contrast. Analysis was done with SPSS-10.01 and STATISTICA-2.5. 2-tailed $P<0.05$ was used to reject null hypothesis.

Results

Seventy four GT students were included in this study (37 female and 37 male).Among them, 50 were studying Medicine, 23 Dentistry, and one Pharmacy. Because there was only one

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(a) These are students who have passed 5 semesters . (b) These are students who have passed 4 semesters. (c) These are students who have passed 3 semesters. (d) These are students who have passed 2 semesters. Tal = talented, Sem = semester

Fig. 1. Difference between term averages of talented vs. not-talented students in different terms.

pharmacy student she was omitted from the study. After matching, 401 "non-talented" students were included. Mean of GTs' GPAs was 16.46±0.14 and of "non-talented" was 14.74±0.07 (P<0.001). The changes in term averages of succeeding semesters were determined (figure 1). As is shown term averages of GTs who have passed 5 semesters was not equal in different semesters (P<0.001) and was decreasing linearly from the first semester to the fifth semester (P<0.001). This condition also occurred for "non-talented" students who have passed equal semesters. Of importance, there was no significant difference between GTs vs. "non-talented" students regarding the changes in term averages (P>0.05). In other words, the slope of decrease didn't differ significantly between two groups. Decrement in term averages and lack of significant difference between two groups was also seen among those students who have passed two or three semesters, but not among those students who passed four semesters. This may be due to a very few number of GT students (5 students) who passed only four semesters.

Discussion

The indicator used to assess academic achievement of students was term average. This indicator was used in other researches (12, 13) although other indicators such as failure rate are also employed in such assessments (14). As is seen in figure 1, the highest decrement in term average happens at second semester. This finding is in agreement with other reports (15).

Among the factors that have been postulated for prediction of academic achievement, student score at college admission tests is cited so often (15,16). the results of present study substantiate this suggestion. During all semesters term averages of GTs were significantly higher than "non-talented". This reflects the fact that Renzulli has cited (17): GTs are superior to non-talented in getting above average ability measures so it is conceivable that GTs' term averages are above non-talented. Although term averages of both groups are decreasing, there is no difference between the changes of term averages across semesters between GTs vs. "non-talented". If the difficulty of courses presented at succeeding semesters is accused as the only responsible factor , it seems reasonable to expect a significant difference in the decrement slope between GTs vs. "non-talented". In other words, there would be greater decrease in "non-talented" term averages than GTs'. So it may be inferred that other factors are involved. Several factors have been cited as responsible for low academic achievement. Some of them are rather personal, such as socioeconomic factors, academic self-concept, self-blame, teacher-blame or anxiety concerning peers (18-21). Some researches have cited institutions as responsible. For example Wu has shown that in schools where learning was considered definitely a high priority, where academic achievement was emphasized, and where students were encouraged to enroll in academic classes, there is a lower school dropout rate than schools where opposite is true (22). So, the University might have been deficient in providing an environment for emergence of task commitment and creativity among GTs that has resulted in decrease of their term averages. But this claim requires more precise researches to explore responsible factors for low academic achievement in GTs in comparison with non-talented students.

The similarity of GTs term average slopes with "non-talented" students' may be attributed to the criterion used in this article for identification of GTs.According to Renzulli and Gardner, screening of students by measures to determine their above average ability is sensitive enough to include nearly all GTs (23,24). Therefore, it does not seem that the distribution of psychologically assigned GTs in two groups were the same.

At last, this study provided some evidences for the necessity of establishing Talented Students Office at Isfahan University of Medical

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Sciences and promoting special interventions for GTs in order to prevent problems in their academic achievements.

Acknowledgement

The cooperation of Mr S. Saeidbakhsh in providing term averages of students is greatly appreciated.

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