Investigating the amount of reading and its determinants in the students in Tehran: A comparison in terms of gender and university

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ABSTRACT

The present study means to investigate the amount of reading and its determinants in the students in Tehran with regard to their gender and the type of university. The population of the study consisted of 142063 male and female students. From among the population, a sample of 410 students (229 female and 181 male) was selected as the participants using proportional stratified random sampling. The instruments included 'fixed-interval time diary questionnaire' and the researcher-made 'study determinants questionnaire'. The data was analyzed at both descriptive and inferential levels. The results showed that the students studied for 160.68 minutes per day on average. Of this time, they allocated 148.68 minutes to study their lessons (academic reading) and 12.03 minutes to read leisurely. The mean academic reading time in male and female students was 126.35 and 167.60 minutes per day, respectively. The mean leisure reading time was 14.75 and 11.52 minutes per day in male and female students, respectively. The results revealed a significant difference in reading time between male and female students so that female students spent more time studying their lessons. However, there was no significant difference between male and female students in reading leisurely. The results showed that State University students spent significantly more time (168.48 minutes per day) studying their lessons comparing with Azad University students (129.14 minutes per day). Nevertheless, there was no significant difference between these students in reading leisurely. The data obtained from Study Determinants Questionnaire revealed that the students considered the most significant barriers to academic reading to be watching TV and surfing the Internet, the influence of campus atmosphere and course books, poor prospects of their field of study, high prices of course books and poor library facilities, respectively. Such factors as motivation for academic success, personal interest and parents' influence were found to have a positive effect on the amount of academic reading in students. The factors affecting leisure reading included gaining general knowledge, deriving pleasure from reading, lack of understating of good books and lack of time.

Keywords: academic reading, leisure reading, students
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INTRODUCTION

It is imperative to know more when one wants to live a better life. In order to know more, one needs to increase their knowledge, which results from extensive study for better learning. Learning is an activity that prepares the individual to deal with situations, adapt to the environment and optimally utilize the available resources [16]. The per-capita rate of access to information resources and reading is an index of cultural and scientific productivity in developed societies. In this regard, most countries continue to develop programs to further people's access to

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information. One of these programs is encouraging reading [6]. Regular reading may not only increase the chances of economic and academic success but also mobilize a sense of community and citizenship. Reading is associated with social behavior and personality while poor reading skills correlates more strongly with lower levels of career and economic success [12]. Little research has yet been conducted on the amount of reading in students. Previous studies have mainly focused on the amount of leisure reading (reading for personal interests) and the factors contributing to it. For example, Moradmand (2010) investigated the factors either contributing to or preventing leisure reading based on male and female students' perspective in Teacher Training University of Azerbaijan. The results showed that the students read 30 minutes per day for pleasure on average. The main barriers to leisure reading included high prices of books, lack of access to favorite books, high volume of academic assignments, watching TV, lack of enough time, lack of advertisement on reading, lack of reading habit since childhood, insufficient number of public libraries, disregard for knowledge, pessimism towards future, leisure activities, economic problems and surfing the Internet. The main factors encouraging reading were reported to be a reading habit developed since childhood, having a personal library or access to library, development of study centers as well as encouragements by professors, teachers, parents and friends, teaching study skills and increased family income. Torkian Tabar (2005) investigated the inclination toward leisure, non-academic reading in the students of Islamic Azad University of Doroud branch. The results showed that more than half the research population read non-academic sources for less than an hour every day. The high prices of books were reported to be the main barrier to reading. Azimian (2008) investigated the reading characteristics of the students of Qazvin Medical University. The results showed that 49 percent of the students were interested in reading while 31 percent of them studied 3-6 hours per week. Of this time, 64 percent was allocated to studying course books.

Considering the gender differences in reading patterns, Aftabi Aryani and Batouli (2007) investigated the amount of leisure reading and its determinants in high school students in Aran and Bidgol Township. The results showed that male students did significantly less leisure reading than female students did. Samanian (2005) reported that parents (43 percent), particularly mothers, had the strongest influence on students' inclination toward reading.

As mentioned above, several studies have been conducted in Iran to investigate the per-capita reading of different social groups [14, 5, 20, 3, 2, 25]. A review of these studies showed that all studies, except for Yadollahi and Seif (2010), drew upon direct questions to estimate the reading per capita. However, using direct questions is not an exact method to estimate reading per capita because it allows for a variety of biases such as social desirability bias. People tend to overestimate and underestimate the time they spend on desirable and undesirable social activities, respectively. It is also difficult to recollect and estimate the time spent on a certain activity over a certain period of time. Therefore, the present study drew upon time diary method to estimate the exact reading per capita in students. As this method is a bias-free method, it would help alleviate gut estimations of participants concerning their time allocation to different activities. In this method, there will not be distorted estimations due to the interplay of biases such as social desirability bias because people would have to manipulate their entire daily report in order to present a desirable image of themselves, which is more difficult than providing a distorted response to a direct, general question [24]. Besides, a researcher-made questionnaire was developed to investigate the determinants of reading. A factor distinguishing this questionnaire from similar scales is that it indirectly addresses the factors affecting the amount of reading. In addition to the items addressing the factors affecting the amount of reading, the scale also examines the factors affecting other activities. Thus, the participants are to a great extent blind as to the research objectives which decrease the odds of bias. The importance of research, therefore, lies in the accuracy of instruments and breadth of scope.

Drawing upon appropriate methodology, the present study aimed to address the questions: what is the daily reading per capita in university students? What are its determinants? Is there any difference in the reading per capita between male and female students in State and Azad universities? The study specifically means to examine the amount of reading academically and leisure reading and their determinants in students. This may help illustrate a clear image of the current status of reading in students so that strategies may be developed to improve reading per capita.

MATARIALS AND METHODS

The population of the study consisted of 142063 male and female undergraduate students of humanities, engineering and medicine in the universities in Tehran city (79330 students of Azad universities and 62733 students of State universities) in the 2011-2012 academic year. Considering the Morgan table [13], the sample size was calculated to

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be 387. A number of six universities were selected as the sample from among the universities in Tehran city. Of the State universities, three universities including Shahid Beheshti, Tehran and Shahed were selected on purpose, as they offered undergraduate courses in humanities, engineering and medicine. From among Azad universities, Tehran South, Tehran Center and Tehran Medical branches were selected randomly. Half the participants were selected from Azad University students while the latter half were selected from State university students based on gender, field of study and university type using proportional stratified sampling. Two questionnaires were used to collect the data. As one of the questionnaires contained open-ended items, it was likely that some questionnaires were left incomplete by participants. Thus, the sample size was increased so that the incomplete or inaccurate questionnaires could be discarded. The participants returned a number of 429 administered questionnaires. Following an initial assessment, a number of 19 questionnaires were discarded, as they were incomplete, and, eventually, the data was obtained from a number of 410 questionnaires. Two questionnaires were used in the present study to collect the data as follows:

A) *Fixed-interval full-time diary questionnaire.* This questionnaire was used to measure the exact amount of academic and leisure reading in students. Accordingly, the students were asked to write down their yesterday activities with exact start/stop time in specific time intervals. Time diary may be defined as a tool used for detailed and accurate recording of the subjects' activities in specific time intervals within a specific period (for example, 24 hours or a week). Using this tool, we may obtain information about start/stop time of every activity, background factors and simultaneous activities. A common topic in time diary studies is the frequency and duration of activities. In such studies, subjects are asked to record all their activities within a certain period with start/stop time. In this method, the subjects may not identify the research objectives so that they do not know what activities the researcher is looking for. Therefore, the chances for exaggeration or overstatement are dramatically reduced [17].

Robinson and Godbey (1994) contend that time diary would help understand what an individual has done over, for example, the past 24 hours. Their studies showed that time diary was a more exact criterion than the methods that would directly ask the individual "how many hours have you worked over the last week?" In the latter method, people usually have difficulty remembering the time they have spent on an activity or overestimate it. People tend to overestimate their working time while they underestimate their leisure time. For example, research has shown that Americans estimated their leisure time to be 18 hours per week while Robinson and Godbey (1994) estimated their exact leisure time to be twice this amount using time diary method [] (As cited in Cornish, 1998). In 2003, American Bureau of Labor Statistics began to implement national projects using time diaries, telephone interview and questionnaires. Nowadays, time diaries are the main tool in studying how Americans spend their time [24]. Time diary techniques are selected based on research content and objectives. Time diaries fall in different categories as follows:

1. Recording or description of activities: Unstructured or complete time diary with after-coded approach (whereby the participants record their type of activities) versus simplified or light diary with pre-coded approach (whereby the researcher provides a list of activities that the participants need to check).
2. *Recording time:* Open-recording diary (in which the participant records the start/stop time) versus fixed-intervals (whereby the researcher assigns fixed intervals).
3. *Recording the context of activities*: Direct record versus indirect record [19].

These three methods are considered based on research objectives and the best combination is selected. The suitable time diary method for the present study was selected based on examination of different measurement methods. In this regard, complete (unstructured) time diary method with fixed intervals was selected to measure the amount of academic and leisure reading in the students. In complete time diary, participants are instructed to record all activities they have done, for example, yesterday. This would yield more detailed information on the individual's daily life. In simplified time diary, participants are asked to check their activities from a list, however. In this method, individuals' perception of the activities may affect their choices. In order to prevent such biases, complete time diary method was used in the present study. Fixed-interval approach was adopted in the present study to both increase the accuracy of responses and encourage the subjects to record all their activities during the specified hours. Otherwise, the subjects would have refrained only to record a few general activities and evaded the rest. The time intervals were considered to be every 60 minutes. However, the subjects were instructed to record the start/stop time of every activity even if it took only a few minutes during the specified time intervals. As background information was not required in the present study, the questionnaire did not provide columns to collect such information. The

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questionnaire was developed to collect retrospective data. That is, the participants were asked to record their yesterday activities in the questionnaire. In order to develop the questionnaire, the following steps were taken:

1. The literature and related theories were reviewed to examine the methods used in similar studies in Iran and other countries. In Iran, only have Yadollahi and Seif (2010) used time diary method with open-recording approach. Therefore, using their questionnaire and making necessary modifications, _fixed-interval full-time diary questionnaire_ was developed. The initial draft of the scale was developed with 30 minutes time intervals.
2. In order to check the structure of the scale, it was presented to a few professors.
3. Based on the professors' opinions, modifications were made to the questionnaire. In this regard, the time intervals were enlarged to 60 minutes. Eventually, the final draft was developed.
4. The revised draft was administered to a number of 30 participants in a pilot study. Following the completion of the questionnaires, the students were asked to express their opinions on the scale.
5. Following the application of students' opinions and final revision by professors, the questionnaire was administered to the subjects.

B) _Study determinants questionnaire_. This is a researcher-made questionnaire developed to examine the factors affecting academic and leisure reading indirectly. In order to prevent the disclosure of research objectives, the scale was developed so that the items addressed the factors affecting a variety of activities that students may do. The following steps were taken to develop the questionnaire:

1. The determinants of reading were identified following a review on the factors affecting reading per capita as well as drawing on students' opinions. The students' ideas also helped identify their daily activities.
2. Based on the identified criteria, the questionnaire items were written on a Likert scale.
3. The first draft was presented to a few professors for further review.
4. The questionnaire was revisited based on professors' opinions.
5. The revised questionnaire was administered to a number of 30 students. Following the completion of the questionnaire, the students were asked to express their ideas about the scale, which helped to revise the questionnaire.
6. The final draft of the questionnaire was developed containing 46 items. The scale was then administered to the sample.

The internal consistency of the questionnaire was calculated to be 0.71 using Cronbach alpha formula. Loop method was used to omit the items that decreased the reliability of the questionnaire. The results showed that two items negatively correlated with the total scores obtained on the questionnaire. Thus, they were omitted to increase the reliability of the scale. The final draft of the questionnaire contained 44 items. The determinants of reading that incorporated into the questionnaire included: poor prospects of students' field of study, the influence of campus atmosphere and course books, motivation for academic success, personal interest, parents' influence on reading, lack of interest in the field of study, high prices of books and insufficient library facilities, lack of study skills, watching TV, surfing the Internet, gaining general knowledge, deriving pleasure from reading, lack of understating of good books and lack of time.

Procedure
Following proportional stratified random sampling, both fixed-interval full-time diary questionnaire and study determinants questionnaire were administered to the participants. When the questionnaires were returned, the researchers discarded incomplete or inaccurate questionnaires while the rest were coded. The data was then analyzed using statistical procedures. In this study, the students were asked to accurately record their yesterday activities in retrospection. The subjects, however, were informed that the study aimed to investigate all their daily activities and life style. As part of the study addressed academic reading and it could produce biased or invalid results in at least one month before the final exams, the data was collected before this period (one and a half month before final exams) in the middle of semester. The questionnaires were administered to a number of 429 students. Following the omission of incomplete questionnaires, a number of 410 scales were accepted for analysis.

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RESULTS

In order to answer the question 'what is the amount of academic and leisure reading in students in terms of gender, field of study and type of university?', the students' responses to the questionnaires were coded and the mean scores were obtained in the unit of minute. Table 2 illustrates the results.

Table 2. Descriptive statistics of academic and leisure reading in terms of gender, field of study and university (in minutes)

Variable	University	Field of study	Gender	No.	Mean	SD
Academic reading	Azad	Humanities	Female	78	123.91	119.61
			Male	32	31.70	100.03
			Total	110	108.31	116.40
		Engineering	Female	18	192.50	201.29
			Male	53	131.60	127.30
			Total	71	147.04	150.30
		Medical sciences	Female	11	164.09	144.40
			Male	7	198.57	86.10
			Total	18	177.50	123.210
		Total	Total	199	129.14	131.22
	State	Humanities	Female	71	184.22	149.10
			Male	29	159.82	140.51
			Total	100	177.15	146.40
		Engineering	Female	16	208.12	193.01
			Male	36	135.83	122.01
			Total	52	158.07	149.36
		Medical sciences	Female	35	201.85	178.27
			Male	24	100.00	102.75
			Total	59	160.42	159.26
		Total	Total	211	168.49	148.86
Leisure reading	Azad	Humanities	Female	78	10.38	25.50
			Male	32	13.12	35.69
			Total	110	11.18	28.69
		Engineering	Female	18	5.00	15.43
			Male	53	21.22	58.49
			Total	71	17.11	48.51
		Medical sciences	Female	11	17.11	51.48
			Male	7	4.28	11.33
			Total	18	15.00	43.95
		Total	Total	199	15.22	44.94
	State	Humanities	Female	71	9.29	23.01
			Male	29	14.48	28.48
			Total	100	10.80	24.68
		Engineering	Female	16	11.25	24.18
			Male	36	10.00	30.42
			Total	52	10.38	28.41
		Medical sciences	Female	35	17.14	36.58
			Male	24	0	0
			Total	59	10.16	29.27
		Total	Total	211	10.81	27.67

Table 3 illustrates the results of independent t test in order to answer the question 'is there any significant difference in mean academic reading time between male and female students?'

Table 3. Independent t test results of comparing mean academic reading time between male and female students

Gender	No.	Mean	SD	F	P	T	df	P
Female	229	167.60	154.44	5.49	0.02	2.94	408	0.003
Male	181	126.35	121.88					

Following analysis of the homogeneity of variances, independent t test was run to compare the mean academic reading time between male and female students. As shown in Table 3, the obtained t (2.94) at 408 degree of freedom is larger than the critical t (2.57). Therefore, H_0 is rejected so that it is 99 percent certain that there is a significant difference in the amount of academic reading between male and female students. The female students were found to have higher mean academic reading time than male students.

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Two-sample independent t test was run to answer the question 'is there any significant difference in mean leisure reading time between male and female students?' Table 4 illustrates the results.

Table 4. Independent t test results of comparing mean leisure reading time between male and female students

Gender	No.	Mean	SD	F	P	T	Df	P
Female	229	11.52	28.80	3.68	0.06	-0.87	408	0.38
Male	181	14.75	45.48					

Following analysis of the homogeneity of variances, independent t test was used to compare the mean leisure reading time between male and female students. As shown in Table 4, the obtained t (0.87) at 408 degree of freedom is smaller than the critical t (1.98). Thus, H_0 is supported so that there is 95 percent certainty that there is no significant difference in the amount of leisure reading time between male and female students. In other words, male and female students spent the same time reading for pleasure or personal interests.

Two-sample independent t test was run to answer the question 'is there any significant difference in mean academic reading time between Azad and State university students?' Table 5 illustrates the results.

Table 5. Independent t test results of comparing mean academic reading time between Azad and State university students

Gender	No.	Mean	SD	F	P	T	df	P
Azad	199	129.14	131.22	3.43	0.06	-2.82	408	0.005
State	211	168.49	149.86					

Following analysis of homogeneity of variances, independent t test was run to examine the significance of the difference between the two means. As shown in Table 5, the obtained t (-2.82) at 408 degree of freedom is larger than the critical t (2.57). Therefore, H_0 is rejected so that there is 99 percent certainty that there is a significant difference in mean academic reading time between Azad and State university students. In this regard, State university students were found to have higher mean academic reading time than Azad university students.

Two-sample independent t test was run to answer the question 'is there any significant difference in mean leisure reading time between Azad and State university students?' Table 6 illustrates the results.

Table 6. Independent t test results of comparing mean leisure reading time between Azad and State university students

Gender	No.	Mean	SD	F	P	T	Df	P
Azad	199	15.22	44.94	5.50	0.02	1.20	408	0.22
State	211	10.81	27.67					

Following analysis of homogeneity of variances, independent t test was run to examine the significance of the difference between the two means. As shown in Table 6, the obtained t (1.20) at 408 degree of freedom is smaller than the critical t (1.96). Thus, H_0 is supported so that it is 95 percent certain that there is no significant difference in mean leisure reading time between Azad and State university students.

In order to investigate the effect of different factors on academic reading time, the questionnaire items were categorized based on the determinants of reading time. The items were on a 5-point Likert scale. Table 7 illustrates the factors and associated items. Friedman test was used to prioritize and examine the level of importance of these factors.

Table 7. Descriptive statistics of determinants of academic reading in order of priority

No.	Factor	Item	Range	Mean	Variance	SD
1	Poor prospects of students' field of study	44, 29, 18	4.00	3.3911	0.408	0.63893
2	Influence of campus atmosphere and course books	12, 24	4.00	3.5500	0.560	0.74863
3	Motivation for academic success and personal interest	9, 25, 31, 32, 46	4.00	3.1190	0.32	0.56558
4	Parents' influence on reading	17, 40	4.00	2.9232	0.293	0.54241
5	Lack of interest in the field of study	11, 14, 22	4.00	2.6683	1.048	1.02402
6	High prices of books and poor library facilities	10, 33	4.00	2.7012	0.833	0.91396
7	Lack of study skills	28, 37	4.00	2.807	0.937	0.96804
8	Watching TV and surfing the Internet	29, 36	4.00	3.6134	0.734	0.85712

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The mean score and rank of every factor were calculated and compared for the sample. Table 8 illustrates the rank order of factors. The results of Friedman test (Chi square=628.749, df=7, N=410, Sig=0.00) showed that there was a significant difference in factors' ranks. That is, there was a significant difference in the level of importance among different factors. As shown in Table 8, watching TV and surfing the Internet, the influence of campus atmosphere and course books, poor prospects of students' field of study, motivation for academic success and personal interest assumed the highest importance. However, such factors as parents' influence on reading, lack of study skills, lack of interest in the field of study, high prices of course books and poor library facilities were less important in accounting for the amount and breadth of reading in the students.

Table 8. Rank order of the determinants of academic reading time based on Friedman test

Factor	Mean rank
Watching TV and surfing the Internet	6.01
Influence of campus atmosphere and course books	5.86
Poor prospects of students' field of study	5.43
Motivation for academic success and personal interest	4.48
Parents' influence on reading	3.90
Lack of study skills	3.68
Lack of interest in the field of study	3.36
High prices of books and poor library facilities	3.28

In order to investigate the determinants of leisure reading time (reading for personal interests), the questionnaire items were categorized based on the factors affecting reading time. The items were on a 5-point Likert scale. Then the mean scores were computed. Table 9 illustrates these factors, their associated items and statistics.

Table 9. Descriptive statistics of determinants of leisure reading in order of priority

No.	Factor	Items	Range	Mean	Variance	SD
1	Gaining general knowledge	43	4.00	3.6122	1.162	1.07805
2	Lack of time	8, 42	4.00	2.4927	0.790	0.88864
3	Deriving pleasure from reading	2, 7	4.00	3.3402	0.994	0.99729
4	Lack of understanding of good books	3, 35	4.00	3.1427	0.621	0.78868

Friedman test was run to prioritize these factors. Table 10 illustrates the ranking of these factors. The results of Friedman test (Chi square=198.974, df=3, N=410, Sig=0.00) showed that there was a significant difference in factors' ranks. That is, there was a significant difference in the level of importance among different factors affecting leisure reading in the students. The most important factors affecting leisure reading were found to be gaining general knowledge, deriving pleasure from reading, lack of understanding of good books and lack of time, respectively.

Table 10. Rank order of the determinants of leisure reading time based on Friedman test

Factor	Mean rank
Gaining general knowledge	2.98
Deriving pleasure from reading	2.64
Lack of understanding of good books	2.56
Lack of time	1.81

DISCUSSION

The present study aimed to investigate the amount of academic and leisure reading in the students and to compare the reading time in terms of gender and the type of university. It also meant to examine the factors affecting academic and leisure reading and to recommend procedures to increase reading time per capita in the students. The results obtained from fixed-interval full-time diary questionnaire showed that the mean academic reading time in male and female students was 126.35 and 167.60 minutes per day, respectively. The mean leisure reading time (reading for personal interests) was found to be 14.75 and 11.52 in male and female students, respectively. It is not a significant time investment for a student, whose main task is learn and do research, to study for two hours and a half every day. It should be noted that this amount is allocated to studying lessons, doing assignments and classroom research. Students need to cover more resources than their immediate course books and assignments. Hojati and Dadgar (2005) contend that students may enter higher education with the assumption that teaching is a professor's duty so that there is no need for their participation. They, however, should recognize that professors guide them

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toward facts and knowledge but not present them with ready-made answers to all questions. Therefore, students need to increase the breadth of their reading and participate in the learning process actively. According to drive reduction theory, tension reduction is the main factor contributing to behavior. Thus, when needs are satisfied, tension decreases and homeostasis is restored to the organism, which results in a sense of pleasure. Since curiosity is one of the essential human needs, reading can satisfy this need. As new knowledge is gained through study, the curiosity balance is returned to the reader while the new knowledge serves as a stimulus for further reading. Therefore, encouraging students' sense of curiosity in class can help lead them toward more reading and research [11].The results showed a limited amount of leisure reading (12.03 minutes per day) among the students. Samanian (2005) reported a positive correlation between leisure reading and academic success. Accordingly, lack of reading may exert negative effects on academic achievement and career prospects. Moradmand (2010) showed that the mean leisure reading time was 30-45 minutes per day in the students at Teacher Training University of Azerbaijan. Torkian Tabar (2005) reported that the students of Islamic Azad University of Doroud studied for personal interests less than one hour per day. In an study on the students of Azad University, Amani (2000) reported that 31 percent of the students read for personal interests for 30 minutes per day while 24 percent read for up to one hour per day, and only did 10 percent read for over one hour a day. A research conducted by US Census Bureau (2006) showed that 15-24 year old people read about 7-10 minutes a day on average for personal interests. Tanner et al. (2009) reported that the students studied their lessons for 9.66 hours per week on average. The above-mentioned studies, except for the US Census Bureau (2006), used direct questioning rather than time diary technique to collect the data on reading time. Therefore, they seem to have overestimated the reading time per capita. The present findings also showed a significant difference in academic reading between male and female students so that female students spent more time studying academically (studying their lessons or contents related to their major). Girls tend to study more than boys do. This is why the female students outnumber the male ones in higher education. One of the factors contributing to higher average reading time in girls may be that they tend to learn the exact words in lessons so that they spend more time memorizing their lessons. They should be encouraged to learn and understand rather than memorize, though. Besides, girls are more competitive than boys, which may also account for their longer reading time [4].The results also revealed that there was no significant difference in leisure reading time between male and female students. Research in different countries has shown that women tend to study more than men do. Though this is a rather new phenomenon and an outcome of modern world, a likely explanation may be that women have more free time than men do [10]. Research on the effect of individual differences on study motivation has shown that women tend to have more positive attitudes toward reading (Eccles et al., 1993; as cited in Wigfield & Guthrie, 1997). Seif and Yadollahi (2010) found that there was a difference in leisure reading time between male and female teachers, with male teachers spending more time on reading for personal interests. Male teachers were reported to read newspapers and magazines as their leisure reading material. Moradmand (2010) found that male students spent a significantly more time on leisure reading comparing with female students. However, Aftabi Arani (2007) reported that female students spent more time reading for personal interests. Clark and Akerman's (2006) study on adolescents showed that boys found less pleasure in reading than girls did. This may account for less reading in boys comparing with girls. However, Samanian (2005) showed that boys did not spend less time reading for personal interests comparing with girls. Therefore, the present findings on gender differences in academic reading between male and female students are only consistent with the findings of Samanian (2005). Comparison of the mean academic reading time between Azad and State university students showed that the latter had higher mean reading time. This may relate to individual interests and differences that encourage people to enter either State or Azad universities. In other words, students who are more interested in studying more seriously tend to enter State universities. Therefore, it does not seem that the State University is a factor contributing to students' motivation for reading. The results showed that there was no significant difference in leisure reading time between the students of State and Azad universities. This may suggest that neither university has taken measures to encourage reading in students and to provide a suitable campus environment to further reading. Razavi and Rahimi Doust (2008) compared the amount and breadth of reading in the students before and after admission to the university. The results showed that the amount of reading decreased in the students after their admission. The students also reported that universities had an insignificant role in encouraging reading.

The results obtained from the *Study Determinants Questionnaire* showed that the main factors affecting reading in order of priority included: watching TV and surfing the Internet, influence of campus environment and course books, poor prospects of students' field of study, motivation for academic success and personal interest, parents' influence on reading, lack of study skills and lack of interest in the field of study, high prices of books and poor library facilities. The students reported their main reasons for leisure reading to be gaining general knowledge and deriving pleasure from reading while they reported the barriers to reading to be lack of time and lack of

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understanding of good books. Moradmand (2010) found that the most significant barriers to leisure reading, as viewed by students, included high prices of books, lack of access to favorite books, high volume of university assignments, watching TV, lack of enough time, poor publicity on reading benefits, lack of a reading habit developed since childhood, insufficient number of public libraries and disregard for knowledge, respectively. He also reported that a reading habit developed since childhood, having a personal library and encouragements by professors, teachers and parents may encourage students for reading.

Fazel (2001) contends that lack of interest and motivation are more significant barriers to students' leisure reading. Zarafshan (1993) reported that high volume of school assignments and lack of time were responsible for decreased leisure reading in the students. Rabiee et al. (2002) reported that parents' education and lack of a reading model at home accounted for low reading per capita in the students. Amani (2000) reported that the main barriers to reading included high prices of books, social disregard for knowledge, people's lack of reading habit since childhood, lack of motivation and a busy schedule. There is lack of research on the amount of academic reading (reading lessons related to the major). However, some studies have been conducted on the determinants of leisure reading in school and university students. The previous findings on this topic correspond to the present findings.

The present findings showed that academic reading time was at an average level in the students while their leisure reading was poor. Therefore, university officials are primarily responsible to take measures to increase average reading time in the students. In this regard, universities may decide to develop libraries through landscaping and adding new resources, increase research/scientific journals and provide more resources other than course books, which may encourage students to study and do research. The present findings also revealed that lack of study skills in students was one the barriers to reading. As a solution, universities may offer a course on reading strategies and learning to all students in the first semester. Understanding study skills may both encourage the students for reading and facilitate their academic success.

The students reported that their lack of interest in their major or field of study was a barrier to academic reading. Many students may select a university major without understanding the nature of the major or its contents. When they enter the university, they may find their select major inconsistent with their interests so that they lose their motivation for study. Many of such students may drop out or they continue with complete disinterest and scarcely study to pass the courses. Thus, in order to avoid such problems, it is recommended that universities provide high school students with brochures introducing different university majors and courses so that the students may select their favorite majors with an informed view. This would prevent students' waste of time and disappointment while preserving national capital. It is also recommended that universities give chances to disinterested students to change their major so that they may maximize their learning experience. Non-attractable, outdated and theoretical course books may discourage students from reading. It is recommended that universities allocate annual budgets to buying new, applied books. If the books are in a foreign language, interested and proficient students may be hired to translate the books. This would provide some students with opportunities for paid work in the campus and offer them newly published books. Still, one should not disregard professors' role in encouraging students to read. Introducing ample resources, encouraging reading and research, and introducing Internet resources by professors may increase students' motivation for reading. It is recommended that time diary tool be used in studies that aim to examine time management exactly. Further studies may be conducted to investigate average reading time and the type of reading material in different groups of people such as professors, employees, self-employed people, etc. It may be helpful to investigate the factors that contribute to academic reading in State university students.

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