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The Study of Relationship between Learning Styles and Time Management among Graduate Students

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Abstract
This article is aimed at investigating the relationship between learning styles and time management among graduate students in Bahonar University of Kerman. This research is conducted through a descriptive and correlational method. The statistical population consists of all the graduate students studying at Bahonar University during the second semester of 2013-2014 in Kerman; among whom 110 were selected using cluster sampling procedure. The instruments used in this study were the Kolb's learning style questionnaire (converging, diverging, assimilating, adaptive) and Britton & Tesser time management questionnaire (long-term and short-term planning and time attitudes) whose reliability and validity are then confirmed. In order to analyze the data, multivariate variance analysis and Levin test were used. The results showed that there is no significant relationship between time management and learning styles of students. In addition, no significant relationship between their learning style and time management in terms of demographic variables (their disciplines of study, age and gender) was found. The extent of time management was in better condition among students of mathematics than students of industries.
Keywords: Learning style, Time management, Higher Education, Student.

1. Introduction

The progress and development of every country are dependent upon appropriate and efficient education. Having an education consistent with individual differences and guidance of students will ensure such a claim. The idea that individual differences in learning are only derived from their different intelligence and ability was accepted for a long time but it was changed later. Nowadays, it is clear that individual differences in learning depend to a little extent on their intelligence and ability, therefore other factors such as personality characteristics, assignments difficulty and different learning styles, and others are involved too(Rezaie. K, et al, 2009:45).

So that education, which is the main purpose of universities and of both formal and informal educational systems, be implemented effectively; the personal, environmental, organizational and even universal effective factors should be recognized in the process of teaching and learning and considered during planning, design and implementation of training.

It is clear that individual differences and its importance in teaching people is considerable among these factors. One of these factors is learning style and paying attention to time called time management that should be considered important by planners, educators and learners. Learning style is a method of acquiring, retaining and recalling information by people (Fedler & Henriques, 1995). And also, it is a kind of learning strategy that can be regarded as a tendency to use specific learning strategies in some situations or learning environments. Learning styles has been regarded as preferences and tendencies in some studies and others have related them to the personal strategies of information processing.

As Keefe quoted, learning styles are generally regarded as certain cognitive, emotional and psychological behaviors that serve as relatively stable indicators (of how learners perceive, interact with and respond to the learning environment (David Tawei KU, 2011).

Time management, as well as awareness to science, technology, the art in optimal use of time, knowledge acquisition and skill in this area, conducting effective and on-time affairs should be considered by planners, instructors and learners (Pahlavan, Shariati Niyasar, 2011:36).

2. Review of Literature

Although no case has been observed in Iran on simultaneous investigation of two variables in research which are, numerous studies have been conducted on one each separate variable in Iran and abroad which are mentioned below:

Hossein Lorgani (1998), in a research titled "The comparison of learning styles among male and female undergraduate and graduate students in three humanities, medical and technical-engineering disciplines" concluded that most humanities students had adaptive learning style, medical students had assimilating learning style and technical-engineering students had diverging learning style. Undergraduate students in humanities discipline had more adaptive learning style and graduate students in humanities discipline had more converging learning style.

Yazdi (2009) in a study titled" Investigation and comparison of learning methods and styles among students of different colleges in Al-Zahra university" concluded that students of the art faculty use the concrete experience method and diverging-adaptive styles; students of the technical college use the reflective observation, abstract conceptualization and assimilating style; the students from the faculty of psychology use the methods of active experimentation, abstract conceptualization and converging style and also the students from the faculty of basic sciences use the method of abstract conceptualization and converging style.

Rezai(2010), in a study titled "The relationship between Kolb's learning methods and Honey & Momford learning styles with age and academic performance of the students" concluded that there is a positive and significant relationship between age, abstract conceptualization and active experimentation but it has no relationship with concrete experience and reflective observation.

Gheibi(2010), in a study titled "The relationship between learning styles and self-efficacy among undergraduate students of academic departments(human sciences, technical-engineering and basic sciences) in the Shahid Beheshti University" concluded that there is a significant relationship between learning styles and academic departments; and between self-efficacy and gender too but there is no significant relationship between learning style and gender.

Ruin (2004), in a study titled "Investigation of the relationship between cognitive styles (learning methods with the personality factors of undergraduate students in Tabriz University)" concluded that there is a difference between learning methods according to the gender and academic departments.

Ravari & Alhani et al (2008), in a study titled "How to manage study time among medical science students of Kerman University in 1385" concluded that there was no significant difference between field of study and routine study hours. ANOVA test didn't show any significant difference between different disciplines in terms of time management; and medical students in comparison with the other disciplines managed their study time further and more constantly and no relationship between different fields of study and how to manage time was observed.

Jahanseir & Salehzade et al (2007), in a study titled "The effect of time management on the academic achievement of the Islamic Azad University students in Maragheh" concluded that no significant difference between amount of time management among male and female students was observed in the study.

Trueman & Hartly (1996), in a study titled "The comparison of old and new time management skills among male and female students" came to the conclusion that the female and older students had better performance in time management than the male and younger students.

3. Research questions

- Is there any relationship between the types of learning styles and time management among the students?
- Is there any significant difference between the types of learning styles (adaptive, diverging, assimilating, and converging) with the components of time management (goal setting, prioritizing, planning, commitment and performance evaluation) in terms of age, gender and educational trend?

4. Methodology

This study is descriptive and from the type of bivariate (two variable) correlational and a questionnaire has been used to collect data.

4.1. Statistical population and sample

The statistical population of this study is the number of 3457 graduate students during 2013-2014 second semester at the Bahonar University in Kerman that the single stage cluster sampling method is used to limit statistical population. The sample group includes 110 people that were selected according to the following table:

Faculty of literature and human sciences	educational management trend	13 people
Faculty of mathematics and computer	pure mathematics trend	15 people
Faculty of technical- engineering	industries engineering trend	11 people
Faculty of agricultural engineering	plant protection engineering trend	17 people
Faculty of art	architecture trend	14 people
Faculty of low	jurisprudence and law principles trend	20 people
Faculty of physical education	kinematic behavior trend	20 people

4.2. The data collection instruments

Two following standardized questionnaires have been used as main instruments of data collection in this study.

- Kolb's learning style questionnaire (1999): This questionnaire contains 12 questions that measures four methods of the people learning in two dimensions of concrete experience, abstract thinking, reflective observation and active experimentation. Therefore, four learning styles namely converging, diverging, adaptive and assimilating styles are created through the combination of these dimensions. Every sentence of this questionnaire consists of four part and each part represents a learning method includes concrete experience, reflective observation, abstract conceptualization and active experimentation. From the sum of A options in 12 sentences a score was obtained that reflect the concrete experience score, second option belongs to the reflective observation learning style, third option belongs to the abstract conceptualization learning style and fourth option belongs to the active experimentation learning style. These four scores represent four learning styles in total. Two scores obtained by the paired subtraction of these styles mean abstract conceptualization subtract from concrete experience and active experimentation subtract from reflective observation. These two scores are located on the coordinates axis and four quadrants are obtained from the intersection of these two axes i.e. vertical axis(concrete experience, abstract conceptualization) and horizontal axis (reflective observation, active experimentation) that one of the converging, diverging, adaptive and assimilating styles is placed in each quadrant.
- Britton & Tesser time management questionnaire(1991): This questionnaire consists of 18 items and three factors: 1) long-term planning, 2) short-term planning, 3) preference for order (time attitudes) and it is a good means for measuring perceptual control of time, goals setting, scheduling and time attitudes.

4.3. Validity and reliability of the measurement tools

Kolb calculated the reliability coefficient of his questionnaire by Cronbach's alpha in 2006, it is for active experimentation / 78, Abstract conceptualization / 83, Reflective observation / 73 and Concrete experience / 82(Gheibi, 2012:59).

The reliability and time management questionnaire has been confirmed by Jahanseir(2007) and questionnaire validity has been obtained /85 through Cronbach's alpha too.

5. Findings

5.1. First question

There is a significant relationship between time management and learning styles among graduate students.

Table1: The results of Levin test in the studied groups

variables	F	DF1	DF2	meaningful level
long-term planning	1.283	3	98	.284
short-term planning	1.298	3	98	.279
time attitudes	.441	3	98	.724
total score of time management	1.346	3	98	.264

As we can see in the table 1, Levin test is not meaningful. According to these results, the predicted assumption of variances homogeneity in above variables between two groups is confirmed and using parametric tests is permitted.

Table 2: The results of multivariate variance analysis (MANOVA), the comparison of time management differentiating converging, diverging, assimilating and adaptive learning styles.

	test name	amount	f	assumption df	error df	Meaningful level	Eta square
group	Pilayi effect	.058	.645	9.000	294.000	.758	.058
	Wilkz lambda	.943	.638	9.000	233.789	.764	.943
	Hottling effect	.060	.631	9.000	284.000	.771	.060
	greatest error origin	.040	1.296[b]	3.000	98.000	.280	.040

The results of table 2 show that the meaningful levels of all tests are considered permissible the applicability of multivariate variance analysis (MANOVA). These results show that there is no significant difference in any of the dependent variables among the studied groups.

Table 3: A summary of the results of multivariate variance analysis (MANOVA) test about the comparison of time management to differentiate converging, diverging, assimilating and adaptive learning styles.

Index of variation sources		sum of squares	degrees of freedom(df)	Average of squares	F	Meaningful level
group effect	Long-term planning	21.268	3	.576	.576	.632
	Short-term planning	16.441	3	.171	.171	.915
	Time attitudes	29.462	3	1.242	1.242	.299
	Total score of time management	143.619	3	.535	.535	.659
error	Long-term planning	1206.104	98	12.307		
	Short-term planning	3133.726	98	31.977		
	Time attitudes	775.057	98	7.909		
	Total score of time management	8763.871	98	89.427		

According to the data in Table 3, since the amount of degrees of freedom F (1, 98) is not significant on the investigated components at level of ./05α, therefore we can conclude that there is no significant relationship between time management and learning style in graduate students.

5.2. Second question

Is there any significant difference between the students learning style to differentiate their educational trend?

Table (2) the indicators of D.Sommerz test for investigating second question

variable		learning style				total		
		convergent	divergent	assimilation	Adaptation		amount of test	Meaningful level
Educational trend	agriculture	3	8	1	5	17	048/0	582/0
	industries	0	2	0	7	9		
	Physical education	1	8	5	6	20		
	architecture	1	5	0	3	9		
	management	0	9	1	2	12		
	mathematics	3	8	2	2	15		
	jurisprudence	0	6	2	12	20		
	total	8	46	11	37	102		

According to the results of table 2 since amount of test (048/0) calculated for two-range tests at level 05/0 not significant, it can be said that there is no significant difference between the students learning style to differentiate their educational trend.

5.3. Third question

Is there a significant difference between the students learning style and their age?

Table (3) the indicators of D.Sommerz test for investigating third question

variable		Learning style				Total	Amount of test	sig
age	to 20 years old	convergent	divergent	assimilation	Adaptation			
	26-30 years	6	27	7	24	64	012/0	894/0
	30-31 years	2	18	2	13	35		
	36 years and older	0	0	0	0	0		
	total	0	1	2	0	3		
		8	46	11	37	102		

According to the results of table 3, since the amount of test (0/012) calculated for two-range tests at level 0/05 is not significant, it can be said that there is no significant difference between the students learning style to differentiate their age.

5.4. Fourth question

Is there any significant difference between the students learning style to differentiate their gender?

Table (4) the indicators of D.Sommerz test for investigating fourth question

Variable		Learning style				total	Amount of test	Meaningful level
		convergent	divergent	assimilation	adaptation			
gender	male	2	17	3	9	31	083/0	346/0
	female	6	29	8	28	71		
	total	8	46	11	37	102		

According to the results of table 4 since amount of test (0/012) calculated for two-range tests at level 0/05 is not significant, it can be said that there is no significant difference between the students learning style to differentiate their gender.

5.5. Fifth question

There is a significant difference between time management in terms of (by) age, gender and trend of graduate students.

Table5. The results of Levin test among the studied groups

Variables	F	DF1	DF2	Meaningful level
Long-term planning	.658	27	74	.888
Short-term planning	1.484	27	74	.094
Time attitudes	.967	27	74	.522
total score of time management	1.268	27	74	.210

As we can see in the table 1, Levin test is not meaningful. According to these results, the predicted assumption of variances homogeneity in above variables between two groups confirmed and using parametric tests is permitted.

Table 6: A summary of the results of multivariate variance analysis (MANOVA) test on the comparison of time management to differentiate converging, diverging, assimilating and adaptive learning styles.

Index of variation sources		Sum of squares	df	Average of squares	F	Meaningful level
Gender effect	*Long-term planning*	14.971	1	14.971	1.469	.229
	Short-term planning	95.129	1	95.129	3.181	.078
	Time attitudes	.202	1	.202	.025	.875
	Total score of time management	29.535	1	29.535	.361	.549
age	*Long-term planning*	16.032	2	8.016	.787	.458
	Short-term planning	.539	2	.269	.009	.991
	Time attitudes	3.057	2	1.529	.188	.829
	Total	30.835	2	15.417	.188	.829
trend	Long-term planning	278.706	6	46.451	4.559	.000
	Short-term planning	243.905	6	40.651	1.359	.239
	Time attitudes	53.762	6	8.960	1.104	.366
	Total score of time management	1187.402	6	197.900	2.419	.032

According to the data in Table 6, since the amount of degrees of freedom F (1, 98) is not significant about investigated components at level of ./05α by age and gender, therefore we can conclude that there is no significant difference between time management of the graduate students by their age, gender and trend.

In addition, according to the ANOVA results in the table 6, there is a significant difference in the educational trends respectively with values of F (559/4 and 419/2) in the long-term planning variable and also the total score of time management; and the results of following test showed that the value of time management among the students with mathematical educational trend in these components is more desirable than the students with industrial educational trend and no significant difference was found in other cases.

6. Discussion and conclusion

One of the requirements to achieve effective and qualitative learning is attention to individual differences in the learning process. One of these differences is the learning style of the people that is unique like person's fingerprint and not considered good or bad; rather it should be known by the learner and the instructor and based on which the training should be provided. Moreover, considering learning style, the element of time is as one of the factors that influence the learning process too, the learner and instructor should consider it during the training and manage it properly.

A quick look at the researches done in the field of learning styles and time management demonstrates

that nowadays it is necessary to pay attention to the individual differences and to consider them in the educational planning and teaching and it is a basis for efficient and effective learning, particularly in higher education and graduate studies that have short-time return than the previous courses and the learner is the leader of his own learning in the form of more outstanding, awareness of the learning style, time importance and its management would be helpful.

But despite this, we find lack of attention to the individual differences generally and learning style and time management specifically in the planning and implementation of education, so it seems necessary to investigate and make changes.

It was observed in the findings of the present questions that there is no relationship between learning style and time management; there is no significant difference between learning styles to differentiate the educational trend. This finding is inconsistent with Gheibi study (2010). There is no significant difference between the students learning style in terms of their age. This finding is consistent with Rezaee study (2010) too.

There is no significant difference between the students learning style in terms of their gender. This finding is also inconsistent with Geibi(2010) & Ruin (2004) study.

Moreover, there is no significant difference between time management and demographic variables (age, gender and educational trend) only the value of time management among the students with mathematics educational trend is more desirable than the students with industries educational trend and it didn't find any significant difference in the other cases. This finding is consistent with Jahanseir study (2007) in terms of gender variable but it is inconsistent with the findings of Perch(1981) and Trueman & Hartly (1996) in terms of age.

Instructors, learners and educational and curriculum planners having known the importance of learning style and time management should take the appropriate policies at macro and micro levels in order to achieve effective learning regarding individual differences.

We can provide the following suggestions in this context:

Increasing awareness about one's learning style and using the training and study strategies tailored to it so that they achieve efficient learning goal at the minimum possible time.

Increasing the students awareness about time management and its role in enhancing the quality of teaching and learning

Conducting more studies on increasing awareness and reinforcing the theoretical basis of the research

Conducting research using standardized instruments to measure learning styles(Felder & Soloman, Vark, etc) and its probable relation with time management.

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