Research Article

Time Management and Metacognitive Strategies in Graduate Students of Kerman University of Medical Sciences

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Abstract

Background: Time management and metacognitive strategies are the most important academic skills of students to achieve scientific success.

Objectives: The current study aimed at comparing the effect of the two widely used teaching methods, role-playing and lecturing, on learning the communication skills among health workers of Kerman health centers in Iran, 2018.

Methods: This descriptive-analytical cross-sectional study was conducted in 2019 on 322 graduate students. The time-management questionnaire developed by Britton and Tesser and the Metacognitive Awareness Inventory Schraw and Dennison were used to collect data. Data were analyzed using descriptive statistics (frequency, mean, and standard deviation) and Pearson correlation coefficient and Multivariate Linear Regression by SPSS software.

Results: The mean score of time management in students was 5.24 ± 32.41 (14-70) and the mean score of metacognitive strategies was 11.56 ± 148.97 (52-260), which showed the -moderate level of students regarding these factors. A positive and significant relationship was observed between time management and metacognitive strategies ($P < 0.050$).

Conclusion: Time management and metacognitive strategies of graduate students of Kerman University of Medical Sciences is at a moderate level. Due to the relationship between time management and metacognitive strategies, it is recommended to pay attention to metacognitive components in teaching and learning methods. It is also suggested to plan for the creativity and innovation of these students to use their ability to achieve organizational goals.

Keywords: Time Management, Metacognitive Strategies, Graduate Students, Kerman University of Medical Sciences

Background

An individual's success in achieving his goals depends to a significant extent on the effective use of time (1). Time management refers to those skills and abilities that lead to optimal time control by the individual. Such a person often does his activities on time without a delay (2). The view indicating how people decide to use their time forms the core of time management theory (3). Time management represents the presentation of scientific and effective methods of saving time and controlling it to achieve greater success in work and life and includes goal setting, and identifying and observing priorities (4). Time is considered a strategic source for advancing human goals and aspirations (5).

Studying the behavior of successful and effective people shows that time has played an irreplaceable role in their success and it has been considered before doing their tasks. They also try to manage time by eliminating useless and irrelevant activities. In this regard, Misra and McKean believe that good time management reduces stress (6). Kelly (7) and Laurie-Ann and Hellsten (8) stated that time is important for students because it helps productivity. Some believe that successful time management is a key factor in success in life, including success in work and education (9). Therefore, considering time management in students causes them to learn better and more appropriately and

use metacognitive skills.

The relationship between metacognition, as a common concept in education, is associated with the learning process. Researchers and educational experts are widely interested in the type and level of knowledge of learners, which requires the emphasis of educational systems on metacognitive education and how to learn so that learners can think independently in dealing with various issues (10). Metacognitive strategies are of great importance in order to achieve an effective educational system and using these strategies increases learning ability. Using metacognitive strategies, the learning process is completed ineffective methods are identified. Therefore, people have become strategic learners (11). Each learning strategy aims at affecting the learner's inspirational and emotional status, how to select, organization, or incorporating newly obtained information (12). The results of Pintrich and DeGroot's research showed that learners who engage cognitively in their homework perform better than learners who are reluctant to use these strategies. Also, metacognitive strategies and consistency in homework are the best predictors of academic achievement (13). In this regard, Izawa believes that effective time management is one of the basic factors in learning (14).

Objectives

The necessity of having these strategies are of great importance for graduate students who are going to play important roles, such as being managers, teachers, and researchers in the society in administrative, educational, and research positions in the future. Accordingly, the present study was conducted to investigate time management, creativity and metacognitive strategies.

Methods

This descriptive-analytical and cross-sectional study was done in 2019 to investigate time management and metacognitive strategies in graduate students of Kerman University of Medical Sciences. The statistical population included 224 Ph.D. and 717 students with master's degree studying in the faculties of medicine, pharmacy, management and information, Iranian medicine, nursing and midwifery, dentistry, and health. Using Equation (n=sample size, α = %05 (type I error), d = 0.8 (maximum permissible error), σ = 7.33 (Standard deviation),322 students were determined to participate in the study. (15)

$$n = \frac{Z_{1-\frac{\alpha}{2}}2 * s^2}{d^2} = \frac{(1.96)^2 * (7.33)^2}{(0.8)^2} = 322$$

The multi-stage sampling method was used. According to the frequency of master's (77%) and Ph.D. (23%), respectively 245 and 77 students were selected. Each faculty was considered as a cluster. Then, according to their proportion in each faculty, the number of samples was determined. In the next step, they were randomly selected (a draw from the list of students provided by the Education Administration of the faculty) from each faculty and entered the study.

The data were collected using two self-administered questionnaires. Time management was assessed by the 14-item time-management questionnaire developed by Britton and Tesser and scored on a five-point Likert scale from never (score 1) to forever (score 5) with a minimum score of 14 and a maximum score of 70. The Cronbach's alpha coefficient for the whole scale was reported 0.77, and also 0.81 and 0.48 for the short-term and long-term planning subscales, respectively (16). The scale was translated by - Sevari and after administration on students of Payame Noor University of Ahvaz, the alpha coefficient of 0.72 was obtained. Also, the validity of the structure was confirmed (17).

The Metacognitive Awareness Inventory (MAI) developed by Schraw and Dennison was used. This scale includes 52 items and measures distinct factors, including two basic dimensions of metacognition (knowledge and regulation) as eight - subscales. Knowledge includes three subscales of "declarative, procedural, and conditional ", and factors related to the regulation of cognition include five subscales sub-factors of "planning, information management strategies, monitoring, debugging strategies, and learning process evaluation". Internal consistency of the scale has been reported between 0.88 and 0.93 (18). In Iran, Delavarpour reported the correlation coefficient of the two general dimensions of knowledge and regulation of cognition as 0.86 and 0.95, respectively. MAI is scored on a five-point Likert scale, from one (strongly disagree) to five (strongly agree). Also, the lowest and highest scores of the whole questionnaire are 52 and 260, respectively (19).

The Kolmogorov-Smirnov test was used to evaluate the normality of the data, and to examine the relationship between variables, Pearson correlation coefficient, and Multivariate Linear Regression were used. The data were analyzed by SPSS software version 22 (version 22, IBM Corporation, Armonk, NY).

The present study was approved by the ethics committee of the Vice Chancellor for Research and Technology of Kerman University of Medical Sciences (IR.KMU.REC.1397.511).

Results

In the present study, 322 students participated, of whom 72.7% were female and 52.8% were married. Also, 45.3% of the students had a retired father and 55.6% had a housewife mother. In terms of education, 74.8% of students' father and 67.7% of students' mother had educational level equal or higher than diploma. The age of the father (84.5%) and mother (55.0%) of most of them was 50 years and older.

First, the normality of the data was checked using the Kolmogorov-Smirnov test and due to the normal distribution of data, parametric tests were used. Based on the objectives of the study, first, the average scores of time management and metacognition strategies were calculated, and then the quartiles were determined. Based on the obtained data, the scores were in the third quartile, which means that in the present study, the average scores in both variables were moderate level and in the same direction

(Table 1).

To investigate the relationship between time management and metacognitive strategies, the Pearson correlation coefficient was used, which was statistically significant (r = 0.36, P = 0.0001). Also, the results showed that there was a positive and significant correlation between the dimensions of these variables (P> 0. 0. 500) (Table 2).

Regarding the relationship between time management and individual characteristics, the results of univariate linear regression analysis showed that there was a significant relationship between age and time management score. The mean score of time management in the age group of 29-38 was lower than the age group of 18-28 years and over 38 years, (P = 0.009). The results of univariate linear regression analysis showed that there was no significant relationship between gender, educational level, marital status, and parents' education, occupation, age and time management score. Regarding the effect of individual characteristics on metacognitive strategies through Linear Regression analysis, no significant relationship was observed (P <0.05).

Discussion

The results showed that the mean score of time management in graduate students is at a moderate level. The results of some relevant studies confirm the findings of the present study.

Sohrabi et al. reported a moderate level of time management in students. They also stated, students can manage their time through their education by strengthening their inner abilities and time optimization (20). Tamanaifar and Ghasemi assessed time management skills in students and concluded it is at a desirable level. They also reported that individual time management skills are the key to success in various aspects of life, including success in work and education. The individual skills for time management are an important factor in academic achievement (21). The results of Hamzah et al. at the University of Utara, Malaysia showed a desirable level of time management in the students, which makes students more successful (22). It to make graduate students pay more attention to their time and schedule their activities. Given the students' educational background and academic experiences, these results are expected.

The results showed that the mean score of metacognitive strategies was at a moderate level. Ghomi et al. investigated the relationship between metacognitive strategies and academic performance in students of Qom University of Medical Sciences and reported a moderate level of this variable in students (23). Safari and Mohammad Jani examined these strategies in Islamic Azad University, Marvdasht Branch, and reported skills (24), which is not consistent with the results of the present study. The discrepancy between the results can be due to the samples and the geographical region because the present study was conducted on graduate students of a public university with high educational and research background than undergraduate students of Islamic Azad University.

The results Baradaran et al. indicated that medical students had a desirable level of metacognitive strategies and also, being aware of planning and purposeful approaches in learning explain the academic achievement of medical students more than other metacognitive strategies (25). Graduate students seem to be more skilled due to the research- and student-centered methods of educational methods. Yang and Bai investigated the use of metacognitive strategies by Ph.D. students at Australian universities and found that students have a wide range of these strategies to improve learning efficiency and facilitate the development of their competencies; however, these skills need to be planned, monitored, and evaluated (26).

A limited number of studies have studies published in Iranian or international journals and scientific databases have addressed the correlation between the studied variables in this study. Due to the direct and significant relationship between two variables, with the increase of metacognitive strategies among graduate students, time management also increases. In their study, Imani et al in Takab University, reported a direct relationship between metacognitive strategies and time management (11), which is consistent with the results of the present study.

Table 1. Central tendency and dispersion of time management and metacognitive strategies of the scores of graduate students

Variable	Min number	Max score	Mean ± SD	First quarter	Second quarter	Third quarter	Fourth quarter
Time management	14	70	32.41 ± 5.24	14	28	42	56
Metacognitive strategies	52	260	148.97 ± 11.56	52	104	156	208

Table 2. Relationship between the dimensions of time management and metacognitive strategies in graduate students

Time management dimensions		Metacognitive strategies dimensions							
		Declarative knowledge	Procedural knowledge	Conditional knowledge	Planning	Information management strategies	Monitoring	Debugging strategies	Learning process evaluation
Short-term	r	0.16	0.19	0.26	0.34	0.13	0.27	0.19	0.18
	P	0.04	0.10	0.001	0.001	0.15	0.001	0.001	0.01
Long-term	r	0.23	0.23	0.18	0.30	0.13	0.16	0.35	0.17
	P	0.001	0.001	0.010	0.001	0.16	٠0.03	0.001	0.02

It seems that the optimal use of time in learning and studying by students can be influenced by their used approaches. Study strategies are methods and techniques that help them how to study effectively, leading to an increase more confidence and pleasure . Also, the use of metacognitive strategies helps learners to manage and control their time effectively (27).

In the present study, there was a positive relationship between students' age and time management and also between metacognitive strategies and time management. Because graduate students, especially Ph.D., are older than other students, the obtained results are not far from expected. Also, because of the methods, by which graduate courses are presented and also the student-centered courses, graduate students should plan for their projects and assignments and make the most of the available time. Hence, the use of metacognitive strategies is more common. In relevant studies, these issues have not been addressed.

Conclusion

The results of the present study showed that time management and metacognitive strategies were at a moderate level. Because the statistical population included graduate students, the results were expected. Therefore, it is suggested that planning for innovation and using their potentials of these students be considered because they are the country's elite. Finally, it is suggested that the present study be conducted on undergraduate students, as well.

Supplementary Material

Supplementary material(s) is available here [To read supplementary materials, please refer to the journal website and open http://sdme.kmu.ac.ir/jufile?ar_sfile=804238.

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