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The Effectiveness of A Training Program Based on Time Management Skills in Developing the Metacognitive Thinking of University Students

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Abstract

This article investigated the effectiveness of a training program based on time management skills in developing the metacognitive thinking of university students. The researcher used the experimental method. they selected a random sample of students. Those students were chosen from the Al- Balqa Applied University. The sample consists of 60 students. Those students were divided into two groups (i.e. experimental and control groups). Each group consists of (30) male and female students. The researcher designed a training program which consists of (6) sessions distributed over the dimensions of time management (time awareness, time planning, time control, time wasting). The training program sessions aimed to develop metacognitive thinking skills. A scale of metacognitive thinking skills was used. It consists of (31) items. It targets the following dimensions: (planning, evaluation, and monitoring). The study found that the training program that's based on time management skills is effective in developing the metacognitive thinking of university students. It recommends implementing the targeted training programs in the aim of developing students' metacognitive thinking skills.

Keywords: *Training Program, Time Management Skills, Metacognitive Thinking.*

Introduction

Time management is considered one of the important factors that enable people - especially students - to achieve success. It allows them to develop various life skills such as: thinking, research and development, and other skills.

Time is a concept that every person understands. However, it is difficult for one to define it. It is a universal concept. Despite that, each individual has his/her own definition for it. The definitions of time vary due to the variation of one's s motivations, needs, and the nature of work, and culture (Al-Gharaz, 2009).

Claessens (2004) indicates that time management is a set of behaviors that aim to improve efficiency and effectiveness in terms of the use of time. These behaviors are defined by the one's self-awareness of his use of time. They are defined by one's tools for using time efficiently. They are defined by the way one monitor his time. Such monitoring allows one to get feedback when tasks are accomplished. Time management

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also refers to having more control over the way one spends his time. It makes on able to make appropriate decisions about the method he uses to take advantage of the time he has (Pardey, 2007).

Kaminski et al. (2006) found that students who lack time management skills get lower grades than their peers. That's because those students spend less time studying. The time students spend studying is directly corrected with academic success.

Time management plays a crucial role in raising student's academic performance and achievements. So, each student should have excellent time management skills. Such skills include: setting goals & identifying priorities. They include: using time management mechanism. They include: being organized in using time (Nasrullah & Saqib, 2015).

Shireesha et al (2022) add that time management is represented in a wide set of tools, skills and techniques which are employed for managing time when implementing projects, meeting goals and doing tasks. This set involves a wide scope of activities. Those activities include planning, allocating time, and setting goals. They include analyzing the time spent, and organizing, scheduling, monitoring, and prioritizing things.

One practices the thinking process continuously. He/she can't stop thinking. The one who is in control over his thinking can overcome the shortcomings and weaknesses existing in the way he thinks. He can overcome problems. One's way of thinking can be for his favor and the favor of the society he is living at (Al-Atoum, Al-Jarrah, and Bishara, 2006).

Fisher (2005) add that metacognition is one's thinking about his own thinking. Metacognition involves knowing oneself through determining what he knows and what he learnt. It involves identifying problems and their elements. It involves knowing what he can do to improve his learning and achievement. It involves using the skills of perception, and sensing problems. It involves identifying the elements of the problem. It involves planning what should be done, and monitoring one's level of progress. It involves assessing the results of this thinking.

The term metacognition was used for the first time by John Flavell. The latter person was used this term during late 1970s. Metacognition is thinking about the process of thinking and being aware of the cognitive processes that one uses for processing information. It is defined as one's knowledge and awareness of thinking processes and strategies. It involves one's ability to evaluate and organize processes. One's own thinking is subjective. It involves learning about how and why one does what he does (Al-Rimawi, 2006).

Metacognition refers to one's knowledge, awareness, and control of the knowledge related to the information he has based on his personal perception, evaluation of his information, and reconstructing of this ideas (Noushad, 2009).

Al-Jazaery (2005) defines the metacognition as a mental activity that includes the learner's conscious control of his cognitive processes and the system of these processes. Metacognition is knowledge of oneself as a learner who works on different learning tasks, uses various learning strategies. It involves carrying out continuous planning, monitoring, and evaluation processes to determine one's progress in the learning process. It aims to develop one's ability to reflect on his own ways of acquiring knowledge.

Metacognitive thinking includes various mental activities carried out by the learner. Such activities include: planning, and monitoring progress. They include: making an effort to evaluate the method and speed of performance. They include: making decisions, and assessing the safety of work, and the safety and quality of the strategies used in performance. Metacognitive thinking is a good management for the thinking process which has now become a subject of question. It plays a crucial role in enabling one to think and think about his thinking (Obaid, 2004).

There are various classifications of the metacognitive skills. The most common of which is a classification that divides metacognitive skills into three main skills. Those skills are: planning, monitoring & control, and evaluation skills (Sternberg, 1994).

Psychologists and educational scientists add that there is a need to be aware and alert to the skills that one employs, controls, and directs him in the right direction. These processes of control and direction are called metacognitive skills. Studies conducted since the 1970s on metacognitive thinking processes have led to the identification of a number of higher mental skills. Those skills manage and direct one's thinking activities. Through such thinking activities, one shall be engaged in a problem-solving or decision-making situation (Al-Hashemi and Taha, 2008).

Metacognitive skills refer to complex mental skills that are considered important components of intelligent behavior in processing information. They develop with time due to the long and diverse experiences that one goes through. They enable one to control all the activities that aim at solving various problems through using cognitive abilities effectively (Abdel Aziz, 2009)

Statement of the Problem

Acquiring skills related to time management and thinking - including metacognitive thinking - is one of the factors that enable people to improve their achievement, exploit resources, and etc.. Thus, universities must offer specialized training programs that contribute to employing time management skills along with metacognitive thinking skills.

Buckley and Sassi (2018) add that metacognitive thinking is one's awareness through his internal conversation with himself. They add that metacognitive thinking is one's way of thinking, and his ability to control his cognitive processes through carrying out monitoring, evaluation, and organization tasks. This awareness manifests in all one's life situations. It develops through experience and age. According to Adams & Blair (2019), effective time management is positively correlated with academic performance. It's negatively correlated with anxiety levels among students. Despite that, many students find it difficult to achieve a balance between studying and their day-to-day lives.

This study investigated the effectiveness of a training program that's based on time management skills in developing the metacognitive thinking of university students. It answered the following question:

Is there any statistically significant differences ($\alpha = 0.05$) between the average scores of the experimental and control groups in the post-application test for developing metacognitive thinking due to the use of a training program based on time management skills?

Objectives

This researcher reviewed some concepts related to metacognitive thinking and time management skills. He investigated the effectiveness of a training program that's based on time management skills in developing the metacognitive thinking of university students.

The Significance of the Study

The importance of the study lies in the fact that it addresses the effectiveness of a training program that's based on time management skills in developing the metacognitive thinking of university students. University students are need for specialized training programs that help them in developing their time management skills and acquiring skills related to metacognitive thinking. The current study encourages decision makers in universities and institutes to activate the training programs that employ time management skills in developing metacognitive thinking.

Operational Definitions

Metacognitive thinking: It refers to the learner's knowledge, control, and control of the strategies he uses to solve problems. It involves planning for learning, and thinking about learning processes. It involves monitoring one's own learning process, and his understanding and evaluation of learning after the activity is completed (Ibrahim, 2004, 809).

Time management is the art and science of rational use of time. It involves investing time effectively. It's a process that's based on planning, following up, organizing, and coordinating things. It's based on motivating oneself. It's based on directing oneself and communicating with others. It has a quantitative and qualitative nature (Al-Hadary, 2000).

Effectiveness: It's used in experimental educational studies. It refers to the extent of the impact of the experimental treatment - as an independent variable - on one of the dependent variables (Al-Saeed, 1997, 17).

Training program: It's a set of integrated and organized information, activities and educational experiences which were designed for meeting the goals of education and training (Al-Menoufy, 2002, 109).

Literature Review

Rob et al (2023) explored the impact of pedagogical training on students' metacognition. The benefits of metacognition for students are known by all people. The latter researchers add that pedagogical training has a positive impact on students' metacognition.

Wilis et al (2023) analyzed the effect of STEM-based online learning lesson plans on the creative thinking skills of students and metacognitive abilities on the inheritance of living things through online learning. A pre-test and a post-test were administered. The sample involves a control and experimental groups. The treatment offered to the experimental class was the implementation of a STEM based online learning lesson plan. The control class was taught through the use of conventional methods employed by the teachers. The results of this study suggest that the creative thinking skills and the metacognitive abilities of students in the experimental class were significantly higher than the counterpart abilities of the control class.

Nima (2022) explored the level of metacognitive thinking among students enrolled at the College of Islamic Sciences at the University of Baghdad in Iraq. He used the descriptive approach. He sampled (192) male and female students. The metacognitive thinking scale was used. The latter searcher concluded that the metacognitive thinking level of the students is (99%). This level is a high level in comparison to the hypothesized mean of (82%). The results show that there are statistically significant differences between the students in terms of the level of metacognitive thinking which can be attributed to gender and grade.

Al-Ashry et al. (2021) investigated the effectiveness of a training program based on time management skills in developing future memory among students suffering from learning difficulties. The sample of the experimental study is (8) male and female students from the fifth grade of primary school. The latter researchers used an experimental method with a quasi-experimental design for one group to test the hypotheses. They also used the "Raven" colored progressive matrices test, and diagnostic rating scales for learning difficulties. They also used a training program based on time management skills for developing future memory. The results suggest that there are statistically significant differences between the average ranks of the experimental group members' scores in the pre- and post-measurements on the prospective memory scale and its sub-dimensions after applying the training program based on time management skills in favor of the post-

measurement. There isn't any statistically significant difference between the average ranks of the experimental group members' scores in the post- and follow-up measurements on the prospective memory scale and its sub-dimensions.

Al-Aleem (2021) investigated the impact of a program based on management strategies in developing the performance of female directors at catering institutions and achieving sustainable development. To achieve the intended goals of the study, the relevant studies were reviewed about the research variables. The latter researcher used a questionnaire. This questionnaire consists of (47) items. It targets the following areas: (effective management and time management strategies, effective management and confronting waste of time, effective management and development of catering establishments, effective management and achieving sustainable development goals). It was found that the targeted program has a positive impact on the performance practices of directors of catering institutions and achieving sustainable development.

Alyami et al (2021) explored the impact of time management on the academic performance of students majoring in the diagnostic radiology technology at KAU. They used a cross-sectional survey-based study design. The sampled students were chosen from the diagnostic radiology technology department at King Abdul-Aziz University. They were chosen during the period (Sep. 2020 - Feb. 2021). For meeting the study's goals, 142 students were surveyed. . Based on the analyzed data, 37.3% of the sampled students either agreed or strongly agreed that they manage their time. Here, 69.2% of the surveyed students with 4.5 - 5 GPA strongly agreed that they meet their deadline (p value = 0.005). Around 71 (66.3%) of the sampled students with 4.5 - 5 GPA either agreed or strongly agreed to make to do list or calendar (p value 0.047). The student's perception, and preplanning their studies positively affect their academic performance.

Zhang et al. (2020) assessed the effect of a time-management-based training program on time management skills and anxiety level among nursing undergraduates. They found that the targeted training program significantly improved the time management skills of the targeted undergraduates. They found that the targeted training program significantly reduced the anxiety level of those students.

The study of Zhang et al. (2020) is the first study to examine the effect of a time-management training program based on time management disposition theory among nursing undergraduate students in China.

Aliwa et al. (2020) explored the effectiveness of a time management-based training program in reducing the aggressive behavior of secondary school students. They used a quasi-experimental research design. The research tools include a training program and, a scale for assessing aggressive behavior. They include a scale for measuring the non-compliance with instructions. The sample consists of (20) secondary school students in Kafr El-Sheikh, Egypt. The ages of those students range between (15-16) years. The research resulted in the presence of statistically significant differences between the average scores of the experimental group and the scores of the control group in the post-measurement on the scale of reducing aggressive behavior in favor of the experimental group. In addition, there are statistically significant differences between the average scores of the experimental group in the pre- and post-measurements on the non-compliance with instructions scale in favor of the post-measurement. There is a significant correlation between reducing aggressive behavior and non-compliance with instructions among the sampled.

Al-Hasnawi (2020) explored the effectiveness of a strategy on the achievement and development of the thinking skills of fifth graders in the history. He used a forty item multiple-choice test. He used a metacognitive skills scale. This scale include 40 items. It was found that there are significant differences between the two groups for the favor of the experimental group. The results suggest that the strategy develops the achievement and thinking skills of fifth graders.

Adams & Blair (2019) explored the self-reported time management behaviors of undergraduates majoring in engineering using a scale on time management behavior. They used a correlation analysis, and a regression analysis. They used a model to determine which aspects of time management behaviors are practiced. They used this model to identify which time management behaviors are more strongly correlated with higher grades within the program. They aimed to identify whether the students who self-identified with specific time management behaviors show better grades in the program or not. It was found that students' perceived control of time is correlated significantly with cumulative grade point average. It was found that there aren't differences between students' time management behaviors which can be attributed to age, entry qualification, gender and time already spent in the program.

Al-Naqa (2019) explored the effectiveness of a program based on the SCAMPER model in developing the critical thinking skills of female fourth graders in science and life in Gaza. The study's tool is a critical thinking skills test. The sampled consists of 68 female graders. Those students were divided into control and experimental groups. Each group consists of 34 students. The program based on the SCAMPER model was implemented on the experimental group. The control group was taught through the traditional method. The researcher used a descriptive method. They also used a quasi-experimental method. The researcher found that significant differences exist between the average scores of female students in the experimental group and the scores of their peers in the control group in the critical thinking skills test in all skills jointly and separately. The targeted skills are: (inference, interpretation, prediction of assumptions, and evaluation of discussions). Such differences are for the favor of the experimental group. The program based on the SCAMPER model is deemed highly effective in developing the critical thinking students of female fourth graders.

Al-Zayat (2019) explored the effectiveness of a strategic thinking-based training program in developing the time management skills of graduate students who are academic procrastinators. He sampled 60 male and female students chosen from the Professional Diploma Division - Special Education Division. Those students were divided into two groups (control and experimental groups). Each group of those ones consists of (30 students). The researcher used an academic procrastination scale for selecting the sample prepared by the researcher. He used a time management skill scale prepared by the researcher. He used a strategic thinking-based training program. He used a booklet. He found that there are significant differences between the average scores of the pre- and post-measurements for the favor of the experimental group on the post-measurement of the time management skill scale. He found that there are significant differences between the average scores of the experimental group and the control group in the post-measurement on the time management skill scale in favor of the experimental group.

Buckley and Sassi (2018) explored the metacognitive thinking level of third-year students who are gifted in mathematics in Ghardaia, Algeria. They explored the impact of gender on their metacognitive thinking. 40 students (25 males, and 15 females) were sampled. Data were collected through mathematics teachers' nominations for gifted students, the Raven's intelligence test, and the metacognitive thinking test in mathematics. The latter test was prepared by the researchers. After analyzing the obtained data statistically, the following results were reached: The metacognitive thinking level in mathematics for the respondents is high. There are significant differences between the respondents in terms of the metacognitive thinking in mathematics which can be attributed to gender for the favor of females.

Al-Shammari (2015) explored the effectiveness of a training program in developing metacognitive thinking skills of secondary school students in the State of Kuwait. He explored the effectiveness of this training program in improving the academic achievement of those students. He used the experimental method. The sample consists of 25 high school students. The tools include a scale to measure metacognitive skills, and a

training program. The researcher concluded that the training program is effective in developing metacognitive thinking skills and improving academic achievement in social studies. It was found that students' possession of knowledge is low. There are differences between students' levels of possession of knowledge beyond conditional metacognition which can be attributed to achievement. There are differences between students' extent of possession of the three forms of declarative, procedural and conditional knowledge which can be attributed to the interaction between achievement and academic level.

Al-Al et al. (2010) measured the effectiveness of a program based on the use of some active learning strategies in developing time management skills among female students at the Home Economics Department at the College of Education. The sample consists of (11) second year female students chosen from the Home Economics Department in the College of Education in Ismailia. Those students were chosen during the academic year (2007-2008). The latter researchers used a questionnaire that aims to assess time management skills. They used a time management test for assessing the time management skills. They found that there are statistically significant differences between the average scores (ranks) of the female students of the study group in both the pre- and post-applications of the time management test on all the dimensions except for the skill of recording and analyzing time, as well as for the test as a whole, and this is in favor of the application.

The aforementioned studies used a set of tests and programs. They shed a light on time management skills and metacognitive thinking skills. The researcher of the current study benefited from previous studies when choosing the research methodology, and developing the study's tools, measures, and tests.

Methodology

The experimental approach was adopted to explore the effectiveness of a training program that's based on time management skills in developing the metacognitive thinking of university students.

The Limits of the Study

The limits of the study are listed below:

Spatial limits: This study targets the students enrolled in public universities in Jordan

Time limits: This study was conducted during the year 2023.

Human limits: The sample consists from several students enrolled at Al- Balqa Applied University.

Population

The population consists of all the students enrolled in Jordanian public universities.

Sample

The random sampling technique was used to choose a sample from the students at Al Balqa Applied University. The sample consists of 60 students enrolled at the latter university. The members of the sample were divided into two groups, which are: the control and experimental groups. Each group of those groups consists of (30) male and female students.

Instrument

The researcher designed a training program to develop the time management skills of university students. The training program consists of (6) sessions. It targets the following dimensions: (time awareness, time planning, time control, and time wasting). The training program sessions aimed to develop students' metacognitive thinking.

A scale on metacognitive thinking skills was used. It consists of (31) items distributed into the dimensions (planning, evaluation, and monitoring).

Methods of Statistical Analysis:

To reach results, the SPSS program was used. A set of statistical analysis methods were employed. The latter methods are displayed below

- Pearson correlation coefficient.
- Cronbach's Alpha coefficient
- T-test.
- Multivariate test
- One-way multiple covariance analysis. It's abbreviated as: (MANCOVA)

Results:

To answer the study's question, means and standard deviations were calculated. They were calculated for the experimental and control groups on the pre- and post-measurements. They were calculated for all the dimensions of the metacognitive thinking scale for university students attributed to a training program based on time management skills based on time management skills. The table below shows those means and standard deviations

Table (1): Means and standard deviations of the experimental and control group on the pre- and post-measurements

Dimensions	Group	No.	Post-test		Pre-test	
			Std.	M.	Std.	M.
Planning	Experimental	30	.545	3.83	.698	2.41
	Control	30	.708	3.11	.700	2.62
Evaluation	Experimental	30	.531	3.14	.764	2.52
	Control	30	.748	3.32	.884	2.69
Monitoring	Experimental	30	.679	3.25	.663	2.69
	Control	30	.670	3.66	.874	2.85
Overall	Experimental	30	.815	3.42	.777	2.85
	Control	30	.854	3.73	.604	2.56

After reviewing table (1), it appears that there are differences between means and standard deviations between the experimental and control groups on the pre- and post-measurements of the dimensions of the metacognitive thinking scale which can be attributed to the training program based on time management skills. To determine the significance of these differences, a multivariate test was conducted according to a variable for a training program based on time management skills. Table (2) shows this test.

Table (2): Multivariate test of the dimensions of the metacognitive thinking scale attributed to a training program based on time management skills

Independent Variables	Hotelling's Trace	Sig	F
The training program is based on time management skills	0.451	.0000	7.154

Table (2) shows the presence of statistically significant differences in the dimensions of the metacognitive thinking scale due to the training program based on time management skills. To identify the sources of these differences, a one-way multiple combined analysis of variance (MANCOVA) was conducted on the post-measurement of the dimensions of the metacognitive thinking scale. Table (3) shows the results of MANCOVA

Table (3): One-way multiple covariance analysis (MANCOVA) on the post-measurement of the dimensions of the metacognitive thinking scale attributed to a training program based on time management skills.

Source	Dimensions	F	Mean Squares	DF	Sum of Squares	)η(2	Sig
Training Program	Planning	13.523	5.623	1	5.623	0.351	.000*
	Evaluation	12.423	2.681	1	2.681	0.194	.000*
	Monitoring	11.421	3.350	1	3.350	0.321	.000*

(*): This sign means that the value is significant at the level of 0.05

Table (3) shows that the “F” value for the planning dimension is (13.523). The “F” value of the evaluation dimension is (12.423). The “F” value of the monitoring dimension is (11.421). The latter values are significant values at the significance level of (0.05). That means that the severity of the effect is deemed significant. Thus, there are significant differences in the dimensions of the metacognitive thinking scale between the experimental and control groups on the post-measurement due to the training program based on time management skills.

To know the size of the effect, the Eta square (η2) value is calculated for planning. It is (0.351). Thus, (35%) of the changes in the planning dimension on the metacognitive thinking scale can be attributed to the targeted time management-based program.

The Eta square (η2) value of evaluation is (0.194). Thus, (19%) of the changes in evaluation dimension on the metacognitive thinking scale can be attributed to the targeted time management-based program.

The Eta square (η2) value of monitoring is (0.321). Thus, (32%) of the changes in monitoring dimension on the metacognitive thinking scale can be attributed to the targeted time management-based program.

The total score for the metacognitive thinking scale

A one-way analysis of covariance (ANCOVA) was conducted on the post-measurement of the metacognitive thinking scale. Table No. 4 shows the results of ANCOVA.

Table (4): One-way analysis of variance (ANCOVA) on the post-test of the metacognitive thinking scale according to a training program based on time management skills.

Source	Sum of Squares	Mean Squares	DF	)η(2	F	Sig
Post-test (combined)	12.252	12.252	1	.496	56.071	.000
Training Program	3.812	3.812	1	.261	17.446	.000*

Error	12.455	.219	57			
Total	28.608		59			

(*): This sign means that the value is significant at the level of 0.05

Table (4) shows that the "F" value of the total score of the metacognitive thinking scale according to the proposed training program amounted to (17.446). The latter value is a significant value. Thus, there are statistically significant differences between the experimental and control groups in the total score of the metacognitive thinking scale. To identify the ones that the differences are for their favor, the adjusted arithmetic means of the total score for the metacognitive thinking scale were identified according to a training program based on time management skills between the experimental and control groups. Table No. (5) shows these results:

Table (5): Adjusted arithmetic averages of the total score for the metacognitive thinking scale according to the proposed training program

Scale	Group	Standard Error	Adjusted Mean
Metacognitive Thinking	Experimental	0.085	2.751
	Control	0.085	2.323

The results in Table (5) showed that the adjusted arithmetic means were lower than the control on the total score of the metacognitive thinking scale and in favor of the experimental group, which indicates the presence of statistically significant differences between the two study groups in the total score of the metacognitive thinking scale depending on The training program is based on time management skills and is for the benefit of the experimental group. To identify the size of the effect, the Eta square ($\eta 2$) is calculated for the total score of the metacognitive thinking scale (0.261). Thus, (26%) of the variance in the total score of the metacognitive thinking scale between the two study groups is due to the program based on time management skills.

Conclusion:

The results indicate that the targeted time management-based training program is effective in developing the students' metacognitive thinking skills. That applies to the following dimensions of the metacognitive thinking skills: (planning, evaluation, and monitoring). It was found that university students have a great need for acquiring time management skills. Such skills can be acquired through the implementation of specialized training programs that target time management skills. The latter skills are needed by students to increase academic achievement and attainment through developing metacognitive thinking skills.

The reached results confirm that the targeted time management-based training program is very effective in developing the metacognitive thinking of university students. The researcher recommends implementing the targeted training programs in the aim of developing students' metacognitive thinking skills.

References

Adams, R. V., & Blair, E. (2019). Impact of Time Management Behaviors on Undergraduate Engineering Students' Performance. SAGE Open, 9(1). https://doi.org/10.1177/2158244018824506

Al-Al, Iman & Issa, Awatef & Mustafa, Salwa. (2010). The effectiveness of a proposed program for developing time management skills among female students of the Home Economics

Department at the College of Education using some active learning strategies. Journal of Specific Education Research. 2010. 409-434. 10.21608/mbse.2010.143765.

Al-Aleem, Nisreen. (2021). The effectiveness of a guidance program for time management strategies on developing the performance of female directors of catering institutions and achieving sustainable development. Journal of Home Economics, Menoufia University. 31. 1-42. 10.21608/mkas.2021.157156.

Al-Ashry, N., Ibrahim, H., Al-Narsh, S., and Al-Gharaz, A. (2021) The effectiveness of a training program based on time management skills in developing future memory among students with learning difficulties. College of Education Journal. Port Said, Volume 37, Issue 37, January 2021, Page 543-593.

Al-Atoum, Adnan, Al-Jarrah, Abdel Nasser, and Bishara, Muwafaq (2006) Developing thinking skills, theoretical models and applications. 1st edition, Dar Al Masirah, Amman.

Al-Gharaz, Ibrahim (2009). The effectiveness of a training program in time management in developing time management skills among university students. College of Education Journal. Port Said, 6(6), 166-205. doi: 10.21608/jftp.2009.40402

Al-Hadary Mohsen Ahmed (2000) Competitive time management. Abtrak for printing, publishing and distribution. Cairo.

Al-Hasnawi, Hakim (2020) The effectiveness of a strategic problem in the achievement and development of metacognitive skills among fifth-grade literary students in history. Journal of the College of Basic Education for Educational and Human Sciences. A. 47.

Aliwa, S., Al-Attar, M., Youssef, M. (2020) The effectiveness of a training program based on time management skills in reducing aggressive behavior and non-compliance with instructions among first year secondary school students. College of Education Journal, Volume 20, Issue 3, 295-319.

Al-Jazairi, Kholoud (2005) The effect of using metacognitive skills in teaching biology on the achievement of first-year secondary school students and their scientific thinking. Institute of Educational Studies and Research, Cairo University.

Al-Menoufi, Saad Jaber (2002) A proposed program for developing creativity in mathematics among secondary school students. Annual Conference of the Egyptian Society for Mathematics Education, Issue 2.

Al-Naqa, Salah Ahmed (2019) The effectiveness of a program based on the SCAMPER model in developing critical thinking skills in science and life among fourth-grade female students in Gaza. Journal of the Islamic University for Educational and Psychological Studies. Mg. 27, p. 2.

Al-Rimawi, Muhammad (2006) General Psychology. 1st edition, Dar Al Masirah, Amman.

Al-Saeed, Jamal Ali (1997) The effectiveness of some educational strategies on the achievement of accredited high school students who work in the cognitive field and their skill in solving the physics problem. Doctoral dissertation, Faculty of Education, Al-Azhar University.

Al-Shammari, Muhammad Arif Thunayan. (2015). The effectiveness of a training program to develop metacognitive thinking skills and improve academic achievement in social studies among a group of secondary school students in the State of Kuwait. Journal of Education, No. 162, Part 2, 551 - 586. Retrieved from http://search.mandumah.com/Record/704652

Alyami, A. , Abdulwahed, A. , Azhar, A. , Binsaddik, A. and Bafaraj, S. (2021) Impact of Time-Management on the Student's Academic Performance: A Cross-Sectional Study. Creative Education, 12, 471-485. doi: 10.4236/ce.2021.123033.

Al-Zayat, Fatima Mahmoud Al-Sayed. (2019). The effectiveness of a training program based on practicing strategic thinking to develop time management skills among academically procrastinating postgraduate students. Egyptian Journal of Psychological Studies, vol. 29, no. 102, 295-334. Retrieved from http://search.mandumah.com/Record/1011392

Buckley, Khaled, Sassi, Aqeel (2018) Metacognitive thinking in mathematics among a sample of gifted students. A field study in the city of Ghardaia. Researcher Journal in the Humanities and Social Sciences, No. 33.

Claessens, B. (2004): Perceived control of time: Time management and personal effectiveness at work, PhD, Technisch University Eindhoven

Fisher ،R. (2005): "Thinking Skills" - http//www. standards. dfes.gov.uk.

Ibrahim Ahmed. (2004). Recent trends in metacognitive strategies in teaching reading. Journal of Reading and Knowledge, No. 30, 148-280. Retrieved from http://search.mandumah.com/Record/3868

Kaminski, P.; Turnock, P.; Rosen, L.; Laster, S.(2006): Predictors of Academic Success among College Students with Attention Disorders, Journal of College Counseling, vol. 9, no.1, pp.60-74.

Nasrullah, Shazia & Saqib Khan, Muhammad. (2015). The Impact of Time Management on the Students' Academic Achievements. 11.

Nima, Hanan (2022) Metacognitive thinking among students of the College of Islamic Sciences. Arab Journal for Islamic Publishing, Volume 2, Issue 47.

Noushad. P ،(2009): "Cognitions about Cognitions : The theory of Metacognition - http//www.eric.ed. gov.

Obaid, William (2004) Knowledge and Metacognition, Concept and Meaning, Fourth Scientific Conference, General Education Mathematics in the Knowledge Society, Egyptian Society for Mathematics Education.

Pardey, D. (2007): Super series: Achieving objectives through time management, fifth edition, Elsevier Ltd., London

Rob Wass, Tracy Rogers, Kim Brown, Kelby SmithHan, Jacqueline Tagg, David Berg & Steve Gallagher (2023) Pedagogical training for developing students' metacognition: implications for educators, International Journal for Academic Development, DOI: 10.1080/1360144X.2023.2246442

Shireesha, K., Sanghavi, E. and Kumar, M. S. (2022). Impact of Time Management on the Academic Progress of Students. Vigyan Varta 3(8): 1-3.

Sternberg ،R. L. (1994): "Encyclopedia of Human Intelligence. Mac million publishing company ،New. York. Volume (2). ،

Wilis, R., Prayitno, B.A., Sunarno, W., & Anjirawaroj, S. (2023). Improving students' metacognitive abilities and creative thinking skills through STEM-based in online learning. JPBI (Jurnal Pendidikan Biologi Indonesia), 9(1), 90-102. https://doi.org/10.22219/jpbi.v9i1.22994.

Zhang, Feng & Liu, JiaXi & An, MengFei & Gu, Huang. (2020). The effect of time management training on time management and anxiety among nursing undergraduates. Psychology, Health & Medicine. 26. 1-6. 10.1080/13548506.2020.1778751.