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Effectiveness of Time-Perspective Training on Time-Balancing and Self-Regulation among Female Students

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Abstract

Introduction: The present study has aimed to investigate the effectiveness of the time-perspective training on time-balancing and self-regulation among grade 9 female students living in Tehran.
Method: This research was a semi-experimental research with a pretest-posttest and follow-up design and a control group. The statistical population consisted of all grade 9 female students without Balanced Time-Perspective (BTP). The samples were chosen randomly from high-school students and were then divided into control and experimental groups. The members of the experimental group experienced the time-perspective training sessions and then the results were compared to those of controls. Zimbardo Time Perspective Inventory (ZTPI) and Academic Self-Regulation Questionnaire (SRQ-A) were used for gathering data. Also, data was analyzed using descriptive and inferential statistics of variance for repeated measures ANOVA and post hoc Bonfroni test was used at α= 0.05 through SPSS Ver.22 software .
Results: Findings revealed that time perspective training had an effect on the time balancing and academic self-regulation of students and there was a significant difference between the two groups ($p < 0.0001$) while such an effect remained in the two-month follow-up phase ($P < 0.0001$).
Conclusion: The therapists are recommended to use time-perspective training among the students in order to provide their future with better psychological health.

Keywords: Time-perspective Training, Balanced Time Perspective, Time-Balancing, Academic Self-regulation

Introduction

Time is an important variable and the way people look consider it and the corresponding attitudes strongly influence their life aspects; nevertheless, most people, both ordinary ones and those interested in studying, underestimate the importance of time [1]. Recently, a theory called time-perspective has been addressed to explain mental disorders. This perspective is a fundamental aspect of time psychology's structure, which appears as a category of the human's cognitive processes experience to the frameworks of past, present and future. This attitude often has a seductive process whereby the continuous flow of personal and social experiences is joined into the areas either signifying these events or making them coherent [2]. Time-perspective plays a crucial role to form perception and establish expectations, orient attentions, present interpretations, determine and reach social goals, and motivate individuals. In this model, the emotional values are assigned to the present (hedonistic and fatalistic), past (positive and negative) and future [2]. Negative past-time perspective is characterized by a pessimism, disappointment and rumination about the past and the negative attitude towards it. In contrast, a positive past-time perspective represents a positive emotional attitude towards the past. The hedonistic time-perspective is characterized by risk taking and regalement. Those with such a perspective live at the moment, avoid inconvenience and seek for enjoyable experiences, while, the

fatalistic time-perspective represents a disappointing attitude towards the future and, in general, life [1]. Also, the time-perspective forms the objective which in turn determines human beings behavior and plays an important role to establish current behaviors [3].

In this regard, time-perspective can be effective on the self-regulation of students in orienting their goals and their academic performance. Self-regulation of cognition and behavior is an important aspect of learning and academic performance of students in the classroom environment. Educational self-regulation theories generally state why and how students learn and what they need to know about themselves and their academic works for independent learning. In other words, students guide their learning and also choose the cognitive, metacognitive and behavioral strategies to enhance their efforts [4]. Self-regulation can lead to improve learning [5] and such an emotional regulation may forecast depression and anxiety among university students [6]. The Social-cognitive theory is one of the latest theories trying to explain educational learning using a 3-fold analytical model associated with academic self-regulation learning components [7]. In this model, learners can be generally known as self-regulated students with active motivational, cognitive and behavioral characteristics. Such students begin their own efforts to gain knowledge and skills, relying less on teachers, parents or other educational factors. Additionally, the school provides the learners with the ability to adapt with the environment and other people [8]. It should be noted that any excesses in each temporal phase will be rather negative. What is supposed to be learned is the expansion of adaptability and psychological flexibility in changing the temporal domains according to the circumstances; therefore, an optimal time perspective consists of a major part of positive past-orientation, milder purposeful futurism, a moderate degree of positive hedonistic positive-orientation, as well as a minor part of negative past-orientation and fatalistic positive-orientation, which is named Balanced Time Perspective (BTP) [9].

Considering the above description and studying the conducted researches, the educational situation, its related issues and students' behavior in specific situations are among the main concerns of educational systems. This issue is due to the fact that political, economic, cultural and social authorities and decision-makers all over the world believe that the development and advancement of a society depends on the development of educational systems where students have mastery on their psychological aspects. Besides, the time perspective is one of the factors influencing the improvement of the mental health status and academic achievement [10]. In doing so, time-perspective training has been proposed as one of the solutions to achieve educational self-regulation and BTP [11]. Accordingly, the present study has aimed at investigating time-perspective training on time-balancing and self-regulation among female high-school students.

Method

In this study, a semi-experimental approach with a pretest-posttest-follow-up design and a control group was used. Initially, among the students without BTP (evaluated by Zimbrardo's Time Perspective Inventory), 60 subjects were randomly assigned to experimental and control groups. Then, in the pre-test phase, both groups experienced the questionnaires (will be elaborated in the next sub-section). The experimental group was trained by time-perspective training [11] in 10 sessions (each held in 90 min) as follows:

Session 1: Establishing a sincere and participatory relationship between the subjects and the investigator, presenting the purpose of the meeting and participating in it, explaining the time perspective and determining the students' time-perspective type according to ZTPI.

Session 2: Discussing the problems' causes according to the time-perspective and such disorders as anxiety. Explaining the deep diaphragmatic breathing technique, checking the breath and muscle relaxation. Writing an agreement.

Session 3: Explaining the short-, medium- and long-term goals, exercising for writing long-term goals (annually) and mid-term goals (monthly) and short-term ones (daily), and using taw for targeting, exercising for deep diaphragmatic breathing, observation of breathing and muscle relaxation.

Session 4: Defining a negative and positive past and presenting some corresponding examples, writing letters, creating a positive attitude towards the past, using the empty chair technique and teaching lifelong and interpersonal skills, trying to replace the positive past instead of the negative past, introducing mindfulness and providing its techniques.

Session 5: Reviewing the negative and positive past definitions with examples, providing a list of positive attributes, preparing a list of good past memories, and playing few childhood games (in multiplayer groups).

Session 6: Defining a hedonistic and fatalistic present and giving a related example, offering suggestions for initiating the chosen hedonistic present item, identifying the types of pleasures available for students, preparing a list of hedonistic tasks for each student and prioritizing delicious tasks.

Session 7: Reviewing hedonistic and fatalistic present definitions, listing and prioritizing non-hedonistic tasks and talking about the importance of intelligent decision-making

Session 8: Defining futurism and giving a related example, trying to replace the positive future by a negative one, determining the students' desired short-term, medium-term and long-term goals and playing Sudoku Table and Snake and Stair.

Session 9: Reviewing the last sessions and students' progress, solving remaining problems and providing recommendations to continue trained techniques.

Session 10: Reviewing the previous sessions and students' status and determining students' BTP.

After completing each intervention, both groups experienced a post-test using the questionnaires; they were followed-up again two months later.

The statistical population included all high-school female students studying at grade 9 in the educational year 2016-17 in Tehran. Also, the samples were selected

randomly. For this purpose, a school in district-15 of Tehran was selected randomly and then through implementation of ZTPI among students, 60 students without time-balancing were selected. After on, these students experienced the self-regulation test. The subjects were randomly divided into two groups including experimental and control (n=30 in each group) according to the recommendation offered in previous studies [12]. The inclusion criteria included having acceptable visual and auditory senses, lack of time-balancing and parents' consent for participation in this project. On the other hand, the exclusion criteria were the absence of more than one session in the course and having a specific illness, taking medication, and having problems and disorders affecting the intervention process. Also, both descriptive and inferential statistics were used and data analysis was performed using SPSS software Ver. 22. Data was analyzed by repeated measures ANOVA and Bonfroni post hoc test was used at α= 0.05.

The following instruments were used to collect data:

Zimbardo Time Perspective Inventory (ZTPI)

This inventory contains 66 five-point items ranging from 1 (very untrue) to 5 (very true) to measure BTP among subjects. It is divided into five subscales: past-negative ("I often think about the bad things happened to me in the past"), present-hedonistic ("I take risks to put excitement in my life"), future ("I am able to resist temptations when I know there is work to do"), past-positive ("Happy memories of good times remain readily in mind"), and present-fatalistic ("Because things always change, one cannot foresee the future"). Through these subscales, an ideal profile of BTP can be obtained which contains high scores on the past positive time perspective, moderately high scores on the future and the present hedonistic time perspective, and low scores on the past negative and the present fatalistic time perspective [13]. The lower the BTP score, the closer to the ideal profile of a balanced time perspective. Also, the construct validity and reliability of ZTPI among adolescents has been presented in previous studies [14].

Academic Self-Regulation Questionnaire (SRQ-A)

This scale was developed for students in late elementary and high-school. The responses to each item are on a 4-point range because more than 4 possible responses is not optimal for the children around 8 years old. The scores are assigned as follows: Very True (4), Sort of True (3), Not Very True (2), and Not at All True (1). In this scale, a higher score will indicate a higher level of endorsement of that regulatory style. The SRQ-A uses 31 items and four subscales: external regulation (8 questions), introjected regulation (9 questions), identified regulation (7 questions, and intrinsic motivation (7 questions). The construct validity of this scale has been calculated with a good internal consistency for all subscales and Cronbach's alpha of 0.75-0.88 [15].

Results

The mean ± (Standard Deviation) age of the sample members was 15.3±(0.8) and 15.1±(0.9) for the experimental and control groups, respectively. There was no significant differences between the two groups, accordingly. Table 1 presents the mean and standard deviation of the variables of time balance and academic self-regulation of the two experimental and control groups in the three phases of this study.

Table 1. Mean and Standard Deviation values for pretest, posttest and follow-up scores regarding BTP variables and self- regulation both in experimental and control groups

Variable	Group	Pretest		Posttest		Follow-up	
		Mean	SD	Mean	SD	Mean	SD
Positive Past	Experimental	3.47	1.12	4.61	0.37	4.57	0.34
	Control	2.96	0.71	2.92	0.76	2.65	0.82
Negative Past	Experimental	3.22	0.55	4.32	0.61	4.30	0.79
	Control	2.88	0.69	3.01	0.73	3.15	0.70
Hedonistic Present	Experimental	2.48	0.17	2.89	0.11	2.78	0.21
	Control	2.41	0.86	2.52	0.83	2.23	0.96
Fatalistic Present	Experimental	3.71	0.37	4.80	0.18	4.82	0.14
	Control	2.97	0.43	2.75	0.55	2.92	0.35
Targeted Futuristic	Experimental	3.34	0.75	4.27	0.39	4.52	0.42
	Control	3.88	0.61	3.91	0.45	3.84	0.33
Transcendent Futuristic	Experimental	3.04	0.36	3.35	0.22	3.37	0.12
	Control	3.08	0.71	3.12	047	3.17	0.54
Total of BTP	Experimental	19.26	1.51	24.24	2.22	24.36	2.11
	Control	18.18	1.63	18.23	2.35	18.16	2.17
External Regulation	Experimental	22.84	4.55	23.43	5.11	23.40	5.03
	Control	22.23	4.18	22.19	4.10	22.10	4.01
Introjected Regulation	Experimental	20.65	2.55	24.00	4.00	24.07	4.06
	Control	20.89	2.74	20.56	2.63	20.60	2.62
Identified Regulation	Experimental	20.16	3.61	23.26	5.19	23.32	5.22
	Control	21.00	3.78	20.95	2.46	20.96	2.49
Intrinsic Motivation	Experimental	21.33	3.99	25.00	5.11	25.06	5.17
	Control	21.97	4.00	21.83	3.69	21.76	3.54
Total of Self-regulation	Experimental	87.64	5.14	93.62	6.17	93.69	6.18
	Control	86.85	8.00	85.17	7.68	85.19	7.70

As it can be seen in Table 1, it seems that the scores of the experimental group in the pre-test were almost similar to those of controls but they were different in the post-test and follow-up. Prior to performing analysis of variance, analysis of the hypotheses showed that the assumptions of normal distribution of the scores according to Shapiro-Wilk test and homogeneity of variances of the two groups according to Levin test ($p \leq 0.05$) were established for the variables of time balance and academic self-regulation. Mauchly's test of Sphericity value was insignificant for time balance (p = 0.845) and academic self-regulation (p = 0.875), thus confirming the hypothesis of intra-group variance and homogeneity of variance-covariance matrix.

According to Table 2, in the time balance section, the main impact of group (P=0.001) and the main impact of time (P=0.001) and the interactive impact of group and time (P=0.001) were all statistically significant. The impact of the group showed that 87% of changes in time balance were attributed to group changes and 91% of such changes were due to the impact of time and finally 89% of those changes were resulted from time-group interaction. The results of this test also showed that in the self-regulation variable, the main impact of group (P=0.001) and the main effect of time (P=0.001) and the interactive impact of group and time (P=0.001) were significant. Furthermore, the main impact of group showed that 93% of changes in self-regulation were attributed to group changes and 92% of such changes were due to the time impact. Also, 81% of the changes in self-regulation were reported to be resulted from group and time interaction. Statistical power indicated the adequacy of the sample size. At last, the Bonferroni test was used to compare the results in the three test stages.

According to Table 3, the results showed a significant difference for pretest-posttest (p=0.02) and pretest-follow up (p=0.01) in the realm of time balance in the experimental group. However, no significant difference was seen in this group for the posttest-follow up (p=0.51), indicating the stability of the intervention on the time balance. In the control group, no pairwise comparison was significant. The Bonferroni test results showed a significant difference for pretest-posttest and pretest-follow-up test regarding the mean scores of self-regulation in the experimental group. Nevertheless, an insignificant difference was seen for the posttest-follow up test in the experimental group (p=0.60), indicating stability of intervention effect on self-regulation in the experimental group. No significant pairwise comparison results were found in the control group.

Table 2. Results of analysis of variance with repeated measures on the mean scores of time balance and academic self-regulation in the two experimental and control groups in pre-test, post-test and follow-up

Dependent Variable	Source of Changes	Sum of Squares	Degree of Freedom	Mean of Squares	F	SIG	Impact	Statistical Power
Time Balance	Group	1504.05	1	1504.05	610.87	0.001	0.87	0.99
	Time	986.67	2	493.44	245.24	0.001	0.91	1
	Group with Time	903.45	2	451.58	235.12	0.001	0.89	1
Self-regulation	Group	1742.4	1	1742.4	94.46	0.001	0.93	0.98
	Time	1488.67	2	1448.44	405.24	0.001	0.92	1
	Group with Time	2092.45	2	1392.58	178.28	0.001	0.81	1

Table 3. Post Hoc Bonferroni test results to determine the impact of intervention on research variables

Dependent Variable	Measurement Time	Experimental Group			Control Group		
		Mean Difference	Standard Deviation	p-value	Mean Difference	Standard Deviation	p-value
Time Balance	Pretest-Posttest	5.54	0.19	0.02	0.05	0.07	0.35
	Pretest- Follow up	5.36	0.18	0.01	0.02	0.11	0.26
	Posttest- Follow up	0.18	0.19	0.51	0.1	0.09	0.45
Academic Self-regulation	Pretest-Posttest	5.98	0.99	0.01	1.08	0.62	0.66
	Pretest- Follow up	6.05	0.87	0.02	1.06	0.65	0.63
	Posttest- Follow up	0.07	0.52	0.60	0.02	0.17	0.15

Discussion

The present study has aimed to investigate the effectiveness of time-perspective training on time-balancing and self-regulation among female high-school students at grade 9 living in Tehran. To this end, the mentioned training approach was applied in 10 sessions on the experimental group. The findings in both posttest and follow-up phase indicated the effectiveness of time-perspective training on time-balancing and self-regulation among the studied students. In a related study on the relationship between self-regulation and time perspective among students, the findings support such a relationship and proves that those with higher self-regulation show a more positive time perspective [16]. This can be explained such that the individuals having low controllability prefer to not bear the responsibilities and prefer other people to make decisions accordingly, while those with higher controllability do not avoid challenges and take every challenge into consideration as a new experience, without paying attention to past negative experiences [17]. Furthermore, students must employ plenty of resources including prior knowledge and preparation, time-balancing skills, self-efficacy beliefs and motivation, and effective cognitive and metacognitive strategies to meet the expectations of college science classes [18]. Regarding future time-perspectives, some studies show that those with future inclination are more likely to succeed and have higher academic achievement

and those with present time-dimensions obtain lower academic achievements [19]. Also, a significant positive relation is reported between self-controlling and future time perspective, while, well-being seeking means psychological and mental pleaser from a hedonistic view point [20]. Actually, there are several strong theoretical causes indicating the importance of time-perspective with respect to self-regulatory processes and time-balancing. First, time-balancing and self-regulatory capacity are generally based on time [21] and are shaped accordingly [22, 23]. Balancing short-term and long-term consequences of decisions and behaviors can adequately be considered as the core definition of self-regulation [22]. Second, among the psychological factors associated with health behaviors, time-perspective receives growing attention and is characterized as one of the most important parameters by numerous studies, based on various approaches and methods, sometimes involving large representative samples [24-26]. Third, several studies suggest that time-perspective and self-regulation are not only inter-correlated, but also interact in their impact on behaviors [22]. These findings are in line with what has been found in the present study.

Conclusion

Given the importance of time and whatever enabling to manage it, the therapists are recommended to use time-perspective training among the students in order to provide their future with better psychological health.

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References

1. Zimbardo P, Boyd, J. . The time paradox: The new psychology of time that will change your life. New York: Free Press; 2008.
2. Vieira AR, Modesto, A., Marazita, M.L.,. Caries: Review of Human Genetics Research. Caries research. 2014;48(5):491-506.
3. Harford W. Connectedness and perceived instrumentality in pre-service teachers: A comparison of two measures. New Mexico: The University of New Mexico; 2011.
4. Fernandez-Rio J, Cecchini, J.A., Méndez-Gimenez, A., Mendez-Alonso, D., Prieto, J.A.,. Self-Regulation, Cooperative Learning, and Academic Self-Efficacy: Interactions to Prevent School Failure. Frontiers in Psychology. 2017;8:11.
5. Raheb G. Designing and testing a learning motivation improvement model based on social constructivism theory. International Journal of Behavioral Sciences. 2009;3(1):79-38.
6. Shafiee-Tabar M, Akbari-Chermahini, S. The Role of Mindfulness and Emotional Regulation in Predicting Depression and Anxiety in University Students. International Journal of Behavioral Sciences,. 2017;11(3):101-6.
7. Clark NM, Zimmerman, B.J. A Social Cognitive View of Self-Regulated Learning About Health. Health Education & Behavior. 1990;5(3):371-9.
8. Carter SR, Moles, R.J., Krass, I., Kritikos, V.S. . Using Social Cognitive Theory to Explain the Intention of Final-year Pharmacy Students to Undertake a Higher Degree in Pharmacy Practice Research. American Journal of Pharmaceutical Education. 2016;80(6):95.
9. Birkás B, Matuz, A., Csathó, Á. Examining the Deviation From Balanced Time Perspective in the Dark Triad Throughout Adulthood. Frontiers in Psychology. 2018;9:1046.
10. Andre L, van Vianen, A.E.M., Peetsma, T.T.D., Oort, F.J. Scherag, A. Motivational power of future time perspective: Meta-analyses in education, work, and health. PLoS One. 2018;13(1):e0190492.
11. Sobol-Kwapińska M, Jankowski, T., Przepiorka, A., Oinyshi, I., Sorokowski, P., Zimbardo, P. What Is the Structure of Time? A Study on Time Perspective in the United States, Poland, and Nigeria. Front Psychol. 2018;9:2078.
12. Gall MD, Walter, R.B., Joyce, P.G., N.Y. Educational Research: An Introduction. White Plains. USA: Longman Publishers; 1996.
13. Stolarski M, Wiberg, B., Osin, E. Assessing temporal harmony: The issue of a balanced time perspective. In: Stolarski M. FN, van Beek W, editor. Time Perspective Theory; Review, Research and Application. Switzerland: Springer-Verlag; 2015. p. 57-71.
14. Worrell FC, Mello, Z.R. The Reliability and Validity of Zimbardo Time Perspective Inventory Scores in Academically Talented Adolescents. Educational and Psychological Measurement. 2007;67(3):487-504.
15. Kröner J, Goussios, C., Schaitz, C., Streb, J., Sosic-Vasic, Z. The Construct Validity of the German Academic Self-regulation Questionnaire (SRQ-A) within Primary and Secondary School Children. Frontiers in Psychology. 2017;8:1032.
16. Zebardast A, Besharat, M.A., Haghighatgoo, M. The Relationship between Self-Regulation and Time Perspective in Students. Procedia - Social and Behavioral Sciences. 2011;30:939-43.
17. Leotti LA, Iyengar, S.S., Ochsner, K.N. Born to Choose: The Origins and Value of the Need for Control. Trends in cognitive sciences. 2010;14(10):457-63.
18. Vandevelde S, Van Keer, H., Rosseel, Y. Measuring the complexity of upper primary school children's self-regulated learning: a multi-component approach. Contemp Educ Psychol. 2013;38:407-25.
19. Zimbardo PG, Boyd, J.N. Putting time in perspective: A valid, reliable individual-differences metric. Journal of Personality and Social Psychology. 1999;77(6):1271-88.
20. Bild JD, Vansteenkiste, M., Lens, W. Understanding the association between future time perspective and self- regulated learning through the Lens of self- determination theory. Journal of Learning and Instruction. 2010;23:1-13.
21. Hall PA, Fong, G.T. Temporal self-regulation theory: A model for individual health behavior. Health Psychology Review. 2007;1:6-52.
22. Joireman. J. B, D., Sprott, D., Spangenberg, E., Schultz, J. Consideration of future consequences, ego-depletion, and self-control: Support for distinguishing between CFC immediate and CFC-future sub-scales. Personality and Individual Differences. 2008;48:15-21.
23. Wills TA, Sandy, J.M., Yaeger, A.M. Time perspective and early-onset substance use: A model based on stress-coping theory. Psychology of Addictive Behaviors. 2001;15:118-25.
24. Adams J, White, M. Time Perspective in Socioeconomic Inequalities in Smoking and Body Mass Index. Health Psychology Review. 2009;28(1):83-90.
25. Crockett RA, Weinman, J., Hankins, M., Marteau, T. Time orientation and health-related behaviour: measurement in general population samples. Psychology & Health. 2009;24(3):333-50.
26. Guthrie LC, Butler, S.C., Ward, M.M. . Time perspective and socioeconomic status: a link to socioeconomic disparities in health? Social Science & Medicine. 2009.