

# The Effectiveness of Solution-Focused Approach on Temperament and Character Dimensions among Probative University Students

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## Abstract

**Introduction:** Academic achievements, and related effective factors addressed by researchers in this field, have become a new center of attention for planners of higher educational systems. This study aims to examine the effectiveness of solution-focused approach, on temperament and character dimensions of probative university students.

**Method:** The study was experimental involving pre-test and post-test, which was carried out on both experimental, and control groups on 40 students of University of Zanjan. Participants were randomly selected and placed into control and experimental groups, each containing 20 members. Pre-test was implemented on both groups, and solution-focused approach was executed on the experimental group at presence of an advisor during 9 sessions (2h) per week. During this period, no intervention was conducted on the members of the control group. Post-test was administered on both groups. Cloninger's Temperament and Character Inventory (TCI-125) was employed for data collection. In addition, data analysis was carried out using inferential statistics, known as analysis of covariance (ANCOVA), accompanied by SPSS (v.22) software.

**Results:** Research findings suggested that, solution-focused approach had no effect on novelty seeking, harm avoidance, reward dependency, persistence and self-transcendence as the temperament dimensions of probative students while it affected cooperativeness and self-directedness as character dimensions.

**Conclusion:** According to the findings, it can be concluded that solution-focused approach affects cooperativeness and self-directedness as character dimensions of probative university students.

**Keywords:** Solution-focused Approach, Temperament and Character Dimensions, Probative

## Introduction

Students are elite workforce and constructors of the future of every country and their achievements are believed to be as a basic objective of educational programs. Academic failure of students results in the occurrence of individual and social problems and leads to a deviation from obtaining objectives of an educational system. Academic probation is one of the criteria of academic failure, which is prevalent among students. Academic probation refers to receiving GPA less than 12 in any academic semester, and it is believed to be as an important example of academic underachievement [1]. Academic probation and failures of students may occur due to various reasons and factors. Isolation from family, and losing some emotional support, change of relation levels with friends, and involvement in new social relations, specific age periods, quantity of academic lessons and related academic courses, lack of supervision and control of achievements, motivation and self-regulation related factors, are considered as the main reasons of academic failure and underachievement of students [2-5]. Psychologists have always emphasized on the importance of dealing with basic behavioral patterns of humans, and in this trend, many

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research have been instructed to examine the main dimensions of personality. Focusing on biological parameters, Cloninger [6] has created a firm theoretical framework which covers both normal and abnormal personalities. Based on this point of view, personality is composed of two elements, i.e. temperament and character [7]. Cloninger [6] has mentioned that temperament systems in brain, include functional organizations and, are composed of different and independent systems for activation, continuity and avoidance of behaviors in responding to certain groups of stimuli. He introduced novelty seeking, harm avoidance, reward dependency and persistence as four dimensions of temperament. Temperament includes logical insights about one's self, others, and surroundings, and mainly comprises of those attributes that are created under influence of environmental factors in the structure of individual's personality. Also, Cloninger has considered self-directedness, self-transcendence and cooperativeness as the three dimensions of character [6, 8]. Hosseinifar et al. [7] have predicted emotional, social and educational adjustment of students based on temperament and character dimensions. Likewise, dimensions of self-directedness, cooperativeness and persistence were foremost predictors of adjustment in adolescents. The results of a study conducted by Baradaran [9] showed that there was a significant difference in all components of cognitive emotion regulation, harm avoidance, self-directedness, cooperativeness and self-transcendence as dimensions of temperament and character and as they concluded, cognitive emotion regulation and dimensions of temperament and character might affect anxiety in individuals. Cloninger and Zohar [10] explored that self-directedness, cooperativeness and self-transcendence were positively correlated to happiness, life satisfaction and positive emotions and they were negatively correlated to negative emotions.

Today, students cope with high stress conditions, during different academic courses and they act affectedly when exposed to exams, and class presentations, and this might negatively affect academic achievements of students. Suitable counseling is a method of coping with these problems. Solution-focused approach is one of the appropriate consultation techniques in educational systems [11]. It is mainly focused on non-pathological approach towards individuals, constraint of therapeutic sessions, applied and practical nature and ease of learning techniques [12]. It is actually a type of short-term therapy that is focused on finding solutions by the aid of therapists and clients. Short-term solution-focused approach was formed by major efforts made by De Shazer [13] at a family therapy center in Milwaukie, United States. The infrastructural philosophy of solution-focused approach has been founded on a paradigm that change is constant and unavoidable, therefore during treatment; it is emphasized on something, which is possible to obtain. This model emphasizes on taking small steps to start change [14]. Bajesh showed that solution-focused therapy is effective on reducing social anxiety disorder [15]. Beauchemin also concluded in his research that

short-term solution-focused approach significantly improves the perception of wellness of university students [16]. Shahi and Ojinejad [14] indicated that training by means of solution-focused approach might have positive and significant effects on social adjustment and resolving identity crisis among female adolescents. Also, Bahrami and Bahari [17] explored effectiveness of solution-focused group intervention on improving self-efficacy. Solution-focused approach is based on this assumption that there are few consultation opportunities. Whereas this approach is focused on solutions and it does not deal with defects and faults, therefore, it may be very beneficent in dealing with self-referent students and also motiveless clients [18]. Since no study has yet been found in regards to the effectiveness of solution-focused approach on temperament and character dimensions among probative university students, the present research is considered as an experimental study, which is concerned with the matter.

## Method

The present study is experimental, and includes pre-test, and post-test, accompanied by a control group. The statistical population of the study included all B.Sc. students (female and male) who had been probated for three semesters and deprived from education in University of Zanjan during the academic year of 2018-19 and were allowed to continue their courses by providing documents for the academic commission, describing their plausible conditions and problems, in order to cancel academic suspension, once more, and they were introduced to receive counseling from psychological consulting center. These students included 105 participants (63 males and 42 females), 40 participants were selected randomly afterwards, by stratified sampling method and for each group (experimental and control groups) 20 participants were randomly assigned. Since the treatment was group therapy, the experimental group was randomly divided into two groups of 10 and pre-test (TCI-125) was performed for each group member (experimental and control groups). Then, the solution-focused approach was implemented on the experimental group within 9 sessions (2hours per week) at the presence of an advisor and group members, and during this period members of the control group received no intervention. Finally, the post-test was administered for two groups at the end of the therapeutic sessions. It should be noted that three participants of the experimental group were dropped.

The inclusion criterion in this study, were as follows:

1. B.Sc. students (female and male) who had been probated and deprived from education for three semesters in University of Zanjan during the academic year of 2018-19. They were allowed to continue their courses by providing documents for the academic commission, describing their plausible conditions and problems, in order to cancel academic suspension, once more, and they were introduced to receive counseling from the psychological consulting center.

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2. Not receiving other psychological interventions along with solution-focused intervention.
3. Not receiving other psychological interventions during past six months.
4. Consent and satisfaction for participating in the intervention sessions.

The exclusion criterion in this study, were as follows:

1. Students who had been scholarly probated for the fourth time and deprived from education.
2. Receiving other psychological interventions along with solution-focused intervention.
3. Receiving other psychological interventions during the past six months.
4. Being absent of more than two sessions from therapeutic sessions.
5. Not continuing therapeutic sessions for any reason.

The tools used in this study were as follows:

### **Cloninger's Temperament and Character Inventory (TCI-125):**

This inventory has been designed by Cloninger et al. [6] to measure temperament and character. This inventory is composed of seven dimensions of novelty-seeking, harm-avoidance, reward-dependence and persistence which are considered as the dimensions that measure temperament, and the three other dimensions assess character including self-directedness, cooperativeness and self-transcendence. The standardized TCI in Iran includes 125 questions and participants answer each of these questions by one of true or false choices and these answers are scored by zero and one. The scores of temperament dimensions are ranged from zero to 60 in which score 30 is the cutoff point in temperament variables where the smaller scores show low temperament and the higher scores reflect the high temperament. The scores of character variables are ranged within (0-65) in which score 32.5 is the cutoff point in character variables where the smaller scores denote low character and greater scores indicate high character. Kaviani acquired internal correlation between scales using Cronbach's alpha coefficient among a sample including 1212 participants for variables of novelty-seeking (0.72), harm-avoidance (0.80), reward-dependence (0.73), persistence (0.55), cooperativeness (0.77), self-directedness (0.84) and self-transcendence (0.72). The validity coefficients ( $n=100$ ) include novelty-seeking (0.75), harm-avoidance (0.72), reward-dependence (0.87), persistence (0.90), cooperativeness (0.76), self-directedness (0.66) and self-transcendence (0.86) [19].

**Content and Structure of Therapeutic Sessions Based on Solution-focused Approach:** Therapeutic sessions were based on solution-focused approach according to sources supporting it, which are provided by Walther and Peller [20], Mudd [21], Lipchick [22] and Nelson and Thomas [23], and its initials are described in the following table (Table 1):

The acquired data was analyzed after the execution of the study using descriptive statistics (frequency, frequency percentage, mean and standard deviation) and inferential statistics using analysis of covariance (ANCOVA) in SPSS (v.22).

## Results

Among the participants of this study, 27.1% of them were within the age range of 19-22 and 72.9% were at 23-25, and the total mean of age range of participants was 23.18 years. The distribution of participants by majors of study were as follows: 21.6% Agricultural Sciences, 35.2% Engineering, 21.6% Natural Sciences, and 21.6% Humanity Studies (Table 2).

Participants of two groups had the same means in the pre-test of the dimensions of temperament/character, but in the post-test, participants of the solution-focused group had a higher mean than the control group participants. Also, the results of the Kolmogorov-Smirnov test ( $z$ ) showed that distribution of data for dimensions of temperament / character and their components in the pre-test and post-test was normal for each group ( $p > 0.05$ ), (Table 3).

The results of covariance for intergroup effects in the mean of temperament / character dimensions, led to significant differences between groups, in variables of cooperativeness ( $\eta^2 = 0.423$ ;  $F = 20.551$ ) and self-directedness ( $\eta^2 = 0.416$ ,  $F = 19.909$ ). The effect level was 42.3% and 41.6% respectively for variables of cooperativeness and self-directedness. The solution-focused approach did not significantly affect variables of novelty seeking, harm avoidance, reward dependency, persistence and self-transcendence among probative students, but it significantly affected self-directedness and cooperativeness as character dimensions of probative students (Table 4).

## Discussion

The main objective of this research was to examine the effectiveness of solution-focused approach, on temperament and character dimensions, among probative university students. In order to obtain proper results, a program consisting of 9 sessions per week (each 2 hours long), was executed on experimental group members. Research findings suggest that the solution-focused approach had significant effects on self-directedness and cooperativeness (which are among character dimensions) among probative university students. To explain the results, it can be concluded that self-directedness is responsible for independency, creativity, innovation, and self-confidence of an individual [24]. An individual with high levels of self-directedness, is depended to himself/herself, is able to postpone his/her immediate needs, can come up with solutions, and is eager to deal with critical situations. Opposing to this, an individual with low levels of self-directedness, lacks strong willpower, is not an influencer when it comes to ongoing life processes, and blames others [25]. Cooperativeness, is another dimension of character, which is based on one's self view, as a part of society and world of mankind, and is responsible for one's social feelings, willingness of doing charity work, conscious, and kindness [26]. Solution-focused approach is a type of brief therapy, which is based on the ability to adapt, and create solutions, and its bedrock philosophy, emphasizes on inevitability of constant change. This is the main reason to focus on possible and achievable things during therapy.

**Table 1.** Therapeutic sessions based on solution-focused approach

Session	Goal	Content	Tasks
First	Establishing therapeutic relationship, making individuals familiar with studied subject, execution of pretest	Briefing and acquaintance, expression of research goals and way of research trend, number of sessions, rules and regulations of group, execution of pretest	Specifying positive cases the care-seekers are inclined to continue them in their life
Second	Conversion of problem into accessible goals	Analysis on tasks of previous session and discussion about positive cases existing in life of care-seekers, encouraging care-seekers to express what they want instead of focusing on problem, determination of tangible, objective, positive and practical goals	Tangible instead of focusing on adverse conditions
Third	Analysis on solutions to remove complaints	Review on tasks of previous session and discussion about goals of care-seekers, creation of solutions by analysis of changes if life problems of care-seekers are solved.	Determination of activities care-seekers are inclined to do to solve their problems.
Fourth	Analysis on level of commitment and hope of care-seekers	Analysis on tasks of previous tasks and review of goals of care-seekers, use of scaling to assess level of commitment and hope in individuals to solve the problem	Identifying how care-seekers notice that they have progressed in implied scales at session and if they progressed what may change and how they could exert such changes
Fifth	Finding a positive story to analyze exceptions	Review on tasks of previous sessions and discussion on way of exertion of changes, assistance to care-seekers to find exceptions, creation of hope toward change and tackling with the problem	Identifying either when there are no problems and or they are less serious
Sixth	Training of finding a solution in different situations using magic question	Review on tasks of previous session and discussion about exceptions and making suitable solutions prominent, asking magic question and encouraging care-seekers to express their capabilities and improving them	Thinking about magic question and identifying efficient solutions
Seventh	Finding different solutions for emotion, thought and behavior	Review on tasks of the previous session and discussion about answer given by care-seekers to magic question, emphasis on making solutions practical by means of term of 'instead' and replacement of suitable thoughts and emotions and behavior instead of problematic thoughts and emotions and behavior	Finding different thoughts, emotions and behaviors from what existed so far and analysis of their effect in personal and social life
Eighth	Analysis on constructive changes and stabilizing and consolidation of them	Review on tasks of previous session and discussion about alternative thoughts, emotions and behaviors and their effect in life of care-seeker, analysis on constructive changes taken place within therapeutic session; making prominent capabilities and potentials in care-seekers, discussion about way of stabilization of exerted changes	Noting down positive points and weak points of therapist, training method and research project
Ninth	Conclusion of sessions, execution of posttest	Presentation of summary of therapeutic sessions, discussion about weaknesses of therapist and therapeutic project and receiving feedback from care-seekers, execution of posttest and completion of therapeutic sessions	

**Table 2.** frequency, frequency percentage, mean and standard deviation of age range of participants in experimental and control groups

group	frequency, frequency percentage of 19-22 years	frequency, frequency percentage of 23-25 years	Total	mean	standard deviation
Solution- focused	6(16.2%)	11(29.7%)	17(45.9%)	23.12	1.536
Control	4(10.8%)	16(43.2%)	20(54.0%)	23.45	1.504
Total	10(27.1%)	27(72.9%)	37(100%)	23.18	1.611

This scheme provides a path towards targets, which is consisted of small steps, since it focuses on solutions rather than faults, therefore it can be a beneficial solution, for unmotivated clients. On the other hand, as it is based

on employing client's abilities, it can provide motivation for university students, resulting in an increase in persistence [18]. Using this type of consulting method, since it employs positive attributions, it can alter the

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psychological state of students, leading them towards academic achievements [11]. During therapy sessions, while participants were lead to focus on solutions, instead of problems, they could come up with suitable solutions to solve their own problems. As they discovered solutions, and employed them in order to solve problems, they witnessed small changes, which motivated them to continue therapy. Also, clients noticed that there were some moments in their lives during which they had little problems, or there were no problems at all, and they learned that, they can possibly create same moments, as they knew how they were acting in the absence of problems. These findings are aligned with previous research [12, 13, 26-28]. This research is also concerned with the same matter as Gordanshekan et al described it. who studied the effects of teaching a meta-cognition package on self-directed learning of the students of Isfahan Medical University [29].

**Conclusion**

Considering the research findings, describing the effectiveness of solution-focused approach on self-directedness, and cooperativeness (as two dimensions of character) of probative university students, this method can be applied in consulting centers of universities, both for an individual or a group, in order to prevent academic failures leading to academic probation. In addition, headmasters and professors of universities can prevent academic failure of students, which will cause psychological costs, and waste of time, by studying temperament, and the characteristics of students, with the help of psychologists and counselors. The main limitation of this study was lack of decent control on the experimental group, which was due to the self-reporting nature of this method. In order to examine the discrete and precise effectiveness of this approach, inclusion of a control process is suggested in future related research.

**Table 3.** Descriptive Statistics of Temperament / Character and its Components in Experimental and Control Groups

Variables	Group	Stage	Minimum	Maximum	Mean	Standard deviation	Kolmogrov-Smirnov test (z)	
							z	Sig level
Novelty Seeking	Solution - focused	Pre test	8	17	12.41	2.320	0.135	0.200
		Post test	12	16	13.82	1.286	0.151	0.200
	control	Pre test	8	17	13.05	2.438	0.133	0.200
		Post test	11	15	13.20	1.361	0.172	0.125
Harm Avoidance	Solution - focused	Pre test	12	16	14.6	1.144	0.176	0.171
		Post test	13	17	14.88	1.111	0.189	0.107
	control	Pre test	11	16	13.40	1.465	0.180	0.088
		Post test	12	16	14.00	1.214	0.200	0.065
Reward Dependency	Solution - focused	Pre test	6	12	8.65	1.766	0.127	0.200
		Post test	8	13	10.53	1.546	0.192	0.097
	Control	Pre test	7	13	9.55	1.701	0.177	0.102
		Post test	7	13	10.15	1.496	0.165	0.157
Persistence	Solution - focused	Pre test	1	4	2.29	1.105	0.193	0.092
		Post test	2	5	3.53	1.007	0.209	0.056
	Control	Pre test	1	5	2.45	1.099	0.209	0.058
		Post test	1	5	3.45	1.146	0.184	0.073
Cooperativeness	Solution - focused	Pre test	10	16	12.76	1.640	0.150	0.200
		Post test	13	17	15.12	1.317	0.160	0.200
	Control	Pre test	10	16	13.10	1.334	0.155	0.200
		Post test	12	16	13.65	1.089	0.176	0.105
Self - directedness	Solution - focused	Pre test	11	18	14.35	1.579	0.164	0.200
		Post test	13	19	16.47	1.463	0.171	0.200
	Control	Pre test	11	17	13.90	1.744	0.147	0.200
		Post test	12	16	14.55	1.146	0.184	0.73
Self - Transcendence	Solution - focused	Pre test	5	11	7.59	1.661	0.168	0.200
		Post test	5	12	8.53	1.875	0.141	0.200
	Control	Pre test	5	11	7.05	1.905	0.160	0.190
		Post test	5	12	8.10	1.804	0.172	0.123
Temperament/ Character dimensions Total	Solution - focused	Pre test	63	80	70.12	5.073	0.132	0.200
		Post test	77	89	82.88	3.462	0.118	0.200
	Control	Pre test	66	81	72.50	3.635	0.110	0.200
		Post test	67	82	77.10	3.447	0.195	0.072

Table 4. Covariance Analysis of Intergroup Effects of Mean Temperament / Character Dimensions

Variables	Variance source	Sum of Squares	Degree of Freedom	Sum of Squares	F -statistic	Sig Level	Eta-coefficient	Test Power
Novelty Seeking	Pre-test group*	1.437	1	1.437	0.969	0.336	0.044	0.156
	Pre-test	15.109	1	14.109	9.851	0.004	0.260	0.858
	Group	5.159	1	5.159	3.602	0.068	0.114	0.449
	Error	40.104	28	1.432				
Harm Avoidance	Pre-test group*	1.209	1	1.209	0.650	0.429	0.030	0.120
	Pre-test	12.081	1	12.081	8.750	0.007	0.242	0.791
	Group	6.083	1	6.083	3.893	0.058	0.122	0.478
	Error	43.747	28	1.562				
Reward Dependency	Pre-test group*	0.215	1	0.215	0.143	0.710	0.007	0.065
	Pre-test	26.468	1	26.468	15.322	0.001	0.354	0.965
	Group	5.938	1	5.938	3.437	0.074	0.109	0.433
	Error	48.368	28	1.727				
Persistence	Pre-test group*	0.185	1	0.185	0.179	0.676	0.008	0.069
	Pre-test	8.173	1	8.173	7.542	0.024	0.202	0.652
	Group	0.022	1	0.022	0.021	0.885	0.001	0.052
	Error	28.711	28	1.025				
Cooperativeness	Pre-test group*	2.253	1	2.253	2.194	0.153	0.095	0.293
	Pre-test	10.130	1	10.130	8.192	0.008	0.226	0.789
	Group	25.412	1	25.412	20.551	0.0001	0.423	0.992
	Error	34.623	28	1.237				
Self-directedness	Pre-test group*	4.125	1	4.125	3.202	0.066	0.109	0.418
	Pre-test	16.193	1	16.193	13.426	0.0001	0.324	0.942
	Group	24.015	1	24.015	19.909	0.0001	0.416	0.990
	Error	33.774	28	1.206				
Self-transcendence	Pre-test group*	4.779	1	4.779	2.087	0.163	0.090	0.281
	Pre-test	4.779	1	4.779	2.087	0.163	0.090	0.281
	Group	24.150	1	24.150	11.007	0.003	0.282	0.893
	Error	1.767	1	1.767	0.806	0.377	0.028	0.140

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