

## Research Article

### The Effects of Step-by-Step Self-regulation on Controlling Study Behavior, Attitude to Study and Academic Achievement

<sup>1</sup>Gholamreza Sharifiniya and <sup>2</sup>Khosro Rashid

<sup>1</sup>Department of Educational Psychology, Islamic Azad University, Hamedan Branch,

<sup>2</sup>Bu-Ali Sina University, Hamedan, Iran

**Abstract:** Using personal potential is one of the key elements in behavior modification and the purpose of this research was to study the effects of a new method in changing human attitude and behavior in school context. Following this goal, in current research the authors have tried to examine the role of Step-by-Step Self-Regulation on studying behavior control, attitude to study and students' academic achievement. The total sample size was 120 high school male students in Hamedan. The subjects were divided into two groups: experimental group and control group. Then step-by-step self-regulation method were taught and carried out for eight sessions over the experimental group. Researcher made questionnaires were used for gathering data on study behavior control and students' attitude to study and for evaluating students' academic achievement their scholastic scores were used. In testing research hypotheses, a multivariate three-way ANOVA and independent and paired t tests were used. Comparing experimental and control groups data show that applying step-by-step self-regulation improves the personal ability to control study behavior while it does not have any meaningful effect on attitudes to study and students' academic achievement.

**Keywords:** Achievement, attitude to study, step-by-step self-regulation, study behavior

## INTRODUCTION

A problematic long term issue in the field of education and educational psychology is that what we should do to grow the students who are independent in learning activity, self-manager and self-directed, the students which can control their study behavior and are automotive learner with self-control ability in study (Jafari, 2011). So many different studies have been done on self-regulation, but most of them focus on the role of instructing cognitive and meta-cognitive strategies on independent learning activity. The main idea of current studies in self-regulation is that all strategies of self-regulation improve learning through helping students to refine their study behavior and compensate for their shortcomings (Poushahriari, 2011).

Based on these approaches, one of the reasons for students' academic performance is the presence of the teachers or other effective people like parents control on students' study behavior. So, whenever they are controlling and evaluating students' learning activities, their level of study is generally in an acceptable range, but when students are alone or are in the place which there isn't any supervisor for their learning activity, they don't study totally or the range of this behavior come so down. Some of the researchers connect this problem to the lack of self-regulation (Lanzberg, 2009).

For controlling the study behavior, students should be aware that their attention is not distracted. They should make a habit in their study behavior, build and follow the study plan and adjust it to their inner energy levels. Students should be able to change their study behavior and activities. If the students do this, their study behavior is on their control, so they are self-regulated (Lemos, 1999).

In learning processes of the students, the ability to become a strategic learners and using self-control is an important component. These students typically are involved in the learning process and are responsible for their own learning. They can control and direct their learning process by using of cognitive and meta-cognitive strategies and achieve further progress in learning. A strategic learner is time manager and may ask themselves such questions: Do I study at a certain time? Is my studying place Ok? (Kamalinfar, 2006).

The importance of students' perceptions of their ability to planning and controlling the studying behavior, in which based on (Bandura, 2000) cognitive-social perspective (2000) refers to one's self perceptions, i.e., the one belief about his ability to perform the duties, is one of the most fundamental phenomena in controlling cognitive processes. This perception acts as a cognitive mediator and put the subjects through to review and judge about his/her abilities in doing something and therefore his works can

be sustained and improved. Since the Self-regulation involves a person's ability to organize and self-management in the way toward achieving different learning goals. By using self-regulation, students can control, organize and manage their studying and learning activities (Schunk and Zimmerman, 2003). Self-regulated Learners view the learning as a systematic and controllable process, accept more responsibility for their own progress, have a plan, evaluate their homework personally, are aware of their thinking processes and utilizing the cognitive strategies for achieving their goals (Kareshki, 2009).

If attitude to study, school and education is positive, it can lead to involve actively in school, Learning and higher motivation to academic issues (Ryan and Deci, 2006). Based on self-regulation theory, in the environment that supports autonomy, competence and relevance, students possibly encounter positively, more interested and more passionate. In the other word, if people have a sense of selectivity and self-control, they voluntarily perform their duties, so in the study behavior (Sink, 2002). Self-regulation is the ability to active involvement in meta- cognitive, motivational and behavioral processes in the learning situation (Ryan and Powelson, 1991).

However, what is seen in traditional theories of self-regulation is that many theorists have only considered it's necessity and their work has just limited to cognitive and meta- cognitive strategies which are generally known as one of learning skills in educational psychology. In fact it is rarely seen that self-regulation can be assessed or applied separately from the study field and provide practical guidance for the development of this capability in general. Step-by Step Self-Regulation (SSSR) is an effort in this field. SSSR method wants to provide practical procedure in behavior modification for individuals and psychologists in which are involved or like to use an easy-working method in increasing the range of self-control in all own activities, especially when behavior modification and/or change is considered. In fact, it can help them to took control of their individual behavior or help their clients to do the same control. The key underpinning principle of this method is one of the key elements in the child rearing that recommended to parents: "do not ask your child to do something that you know s/he does never do that."

Based on this educational principle, if you request something un-applicable or un-executive (according to the situational signs) for several times, your opposite learns that s/he can ignore your commands in some situations. So, in such cases, you are just telling him that your orders sometimes can be disobeyed. The same action can be done with our child. If we ask our baby to be quiet in a ceremony, because of the situation, it is fully possible that s/he disobey us. By repeating this behavior, s/he little by little learns that sometimes you say the things in which is not important or they can ignore, the condition in which your requests becomes neutral. Therefore, the stimulus in which will emerge

the behavior we want becomes a sign for doing nothing for child. But why this principle is the base of SSSR and what is the relationship between them?

As the parent commands can be neutralize and lose its influencing role for changing and controlling the child's behavior, the person owns orders can also catch the same problem. A person who repeatedly decide to do something but does not run that, little by little learns that s/he can disobey his or her decisions, plans and the other self-motivated tasks, which leads to the weaknesses in personal behavior-management processes. The cause is that when we say ourselves to do something in a special time-range or forever and we don't (due to ability or other problems), our future decisions will fell into the same destiny because our self-directed decisions lost their stimulant characteristics. This is perhaps the key to people's passivity. On this basis, the difference between volited and avolited people is that a volited person has to abide by their rules and decisions while the avolited one does not. The key reason for this problem can be found in the history of individual's behavior and the term "personal training experience". A volited person has learned to respect to his decisions and commands and carry them and do not allow something to put back their personal decision and orders. This is the goal of SSSR to be followed, increasing the person's ability to control their behavior, execute individual commands and finally increasing the total range of personal volition by using a step by step procedure.

## MATERIALS AND METHODS

**Subjects:** Statistical population of the study was all high school male students in 2011-2012 scholastic years that totally were 2210 students. The reason for selecting the boy students in this study was the greater prevalence of educational burnout in them than girl students. Because of the experimental nature of the research, we selected 60 first-grade students whom were divided into control (N = 30) and experimental (N = 30) groups.

**Sampling method:** In this study, after selecting the schools by use of a multi-stage cluster sampling method, the subjects were randomly selected and in the same way replaced in experimental and control groups in last part. In replacing the students in the groups, it was tried to put students with different scholastic background in both groups to control the academic performance. If someone was not willing to engage in research, the next closest person (based on score mean) included in the study.

**Research tools:** In this research, two researcher- made questionnaires were used to assess the studying behavior control and attitudes to study. Both questionnaires had 25 questions, each of which in the order level and based on a Likert five-range scale type.

There were reverse questions in both questionnaires too. For evaluating the validity of the questionnaire, content validity of the tests were assessed. For this purpose, we used the views of some of the educational specialist and some of the members of psychology department of Bu-Ali Sina University, Hamedan. In order to assess the reliability of the questionnaires, 28 questionnaires were distributed among students in Hamedan and the results obtained using Cronbach alpha coefficient. The estimated reliability of controlling study behavior questionnaire were 0.86 and for attitude to study questionnaire was 0.93, that both were acceptable for the test reliability

**Procedure:** This research was a pretest- posttest design with control group. Design diagram is as follow:

RE	T <sub>1</sub>	X	T <sub>2</sub>
RC	T <sub>1</sub>	-	T <sub>2</sub>

where,

- R = Random sampling
- E = Experimental group
- C = Control group
- T<sub>1</sub> = Pre-test
- T<sub>2</sub> = Post-test
- X = SSSR education

After establishing the experimental and control groups, filling up the research questionnaires by both groups and gathering the scores of English lesson in an English test (which were used as the pre-test scores), SSSR method was taught to the experimental group.

**Bases of SSSR:** SSSR which is introduced by Rashid (2011) is a way for behavior modification, control and change in the people who don't have a sense of ability in behavior change and modification (Jafarinadarabadi, 2011). Implementing the SSSR has a few basic principles that include:

- Selecting the executable actions (Just the behaviors should be choose that the person has the ability to perform it, i.e., based on the base line, not the expectations, aspirations and desires).
- Selecting the size of desired behavior compatible with the base line (it won't be very different than base line).
- Selecting the time period of desired behavior (it won't be for a long period of time).
- Giving the orders to doing desired behavior volume for the determined period loudly personally.
- Behavior evaluation at the end of the selection period and make a new decisions about maintenance, enhancement, reduction or removing the behavior (the volume of the behavior may increase, decrease or don't change) for the same period or new periods.

**SSSR sessions in this study:** The first Session was the familiarization with students and set the base line along with instructing the bases of the SSSR and selecting an appropriate behavioral plan (include the volume of the behavior and the time period it will be done) for each student at first week.

At the second session to the end, in each session the students' situation in the amount of success in doing the plans were determined and a new behavioral plan for every student were chosen. A week after the last session the research questionnaires were filled up by all 60 students once again.

## RESULTS

**Testing the first main hypothesis:** SSSR improves students' knowledge, attitude and behavior control.

According to Table 1, the results show the acceptable differences in the confidence level of 0.01 and this means that there are significant differences both in the rows and the columns, in the three studied

Table 1: Multivariate precise testing

Agents	Test	Value	F	Df	Df error	Confidence level
Intercept	Pillai's trace	0.993	5096.83	3	114	0.001
	Wilks' lambda	0.007				
	Hotelling's trace	134.127				
	Roy's largest root	134.127				
Groups (control and experimental)	Pillai's trace	0.239	11.928			
	Wilks' lambda	0.761				
	Hotelling's trace	0.314				
	Roy's largest root	0.314				
Time (pretest-posttest)	Pillai's trace	0.182	8.44			
	Wilks' lambda	0.818				
	Hotelling's trace	0.222				
	Roy's largest root	0.222				
Group×time	Pillai's trace	0.164	7.442			
	Wilks' lambda	0.836				
	Hotelling's trace	0.196				
	Roy's largest root	0.196				

Table 2: Comparing experimental and control groups in controlling study behavior, attitudes to study and academic achievement in pre-test and post-test

Variables	SS	d.f	Mean of squares	F	Sig
Academic achievement	20.903	3	6.968	1.782	0.154
Controlling study behavior	8074.958		2691.653	18.668	0.001
Attitude to study	4205.558		1401.853	8.43	0.001
Academic achievement	32644.925	1	32644.925	8349.706	0.001
Controlling study behavior	979032.675		979032.675	6790.153	0.001
Attitude to study	1130438.408		1130438.408	6797.503	0.001
Academic achievement	15.595	1	15.595	3.989	0.048
Controlling study behavior	3531.675		3531.675	24.494	0.001**
Attitude to study	261.075		261.075	1.57	0.213
Academic achievement	2.431	1	2.431	0.622	0.432
Controlling study behavior	1976.408		1976.408	13.708	0.001**
Attitude to study	3933.075		3933.075	23.65	0.001**
Academic achievement	2.877	1	2.877	0.736	0.393
Controlling study behavior	2566.875		2566.875	17.803	0.001**
Attitude to study	11.408		11.408	0.069	0.794
Academic achievement	453.526	116	3.91		
Controlling study behavior	16725.367		144.184		
Attitude to study	19291.033		166.302		
Academic achievement	33119.354	120			
Controlling study behavior	1003833				
Attitude to study	1153935				
Academic achievement	474.429	119			
Controlling study behavior	24800.325				
Attitude to study	23496.592				

Table 3: Comparing experimental and control groups in controlling study behavior, attitudes to study and academic achievement in post-test scores by t test

Variable	Groups	d.f	Sig	t	Levene's test	
					F	Sig
Controlling study behavior	Control	58	0.001	-7.828	1.226	0.273
	Experimental					
Attitude to study	Control	58	0.128	-1.545	0.096	0.758
	Experimental					
Academic achievement	Control	58	0.409	0.832	0.459	0.501
	Experimental					

variables i.e., controlling study behavior, attitudes to study and academic achievement between the students in control and experimental groups at pre-test and post-test. Multivariate analysis of variance table results for testing main hypothesis mentioned below.

**Results:** Table 2 shows that:

- There was statistically significant difference between the control and experimental groups at pre-test and post-test of behavior improvement variable but there weren't significant difference in other two variables.
- There was statistically significant difference between post-test and pre-test of attitude to studying and controlling study behavior variables whereas there weren't significant difference in other variable (academic achievement).
- There are differences in the hybridization of two variables, time (pretest and posttest) and group (control and experimental) only in controlling study behavior variable and this results in a confidence level of 0.01 is acceptable. Thus, in the result of present study it must be expressed that SSSR is effective on improving the controlling study behavior in high school students and has not meaningful effects on attitude to study and

academic achievement. The results of independent t test for independent groups are summarized in Table 3.

According to Table 3, the Levene's test indicated homogeneity of variance in scores of three studied variables between the control and experimental groups (the obtained F value in standard confidence is 0.05). However the t values obtained for comparing the post-test scores of the groups in attitude to study and academic achievement were 0.545 and 0.409, which both were less than the minimum acceptable confidence level ( $p = 0.05$ ) and ( $t = 1.96$ ).

Moreover, due to the gathered data, since the obtained t value for controlling study behavior is obtained (-7.828) is meaningful in the confidence level 0.001, it can be said that the differences are meaningful with 0.99% confidence. However the results show the significant differences in the post-test scores between the control and experimental groups in controlling study behavior. This test confirms the results of Multivariate multi-way ANOVA and it can be confidently concluded that according to gathered data SSSR method is effective in increasing self-controlling study behavior in high school students, but has no meaningful effects on attitudes to study and academic achievement.

## DISCUSSION

To test the first main hypothesis about the effectiveness of SSSR improving controlling study behavior, attitude to study and academic achievement in high school students the multivariate analysis of variance and independent t tests were used for statistical analysis. In this study, all three variables (controlling study behavior, attitude to study and academic achievement) once in the hybridization method in pre-test and post-test and between control and experimental groups were done and once again between control and experimental groups and only the post-test were compared. The obtained results suggest that among these three variables, only controlling study behavior differences between control and experimental groups at pre-test and post-test and also between the control and experimental groups in post-test were significant. So, in two variables (attitude to study and academic achievement) the Zero hypothesis was confirmed and the research hypothesis rejected and in controlling study behavior the research hypothesis was confirmed. So we conclude that SSSR is effective in improving self-control in study behavior in high school students, while it has no meaningful effect on attitudes to study and academic achievement.

But what reasons play role in present study on the neutral role of SSSR method on attitudes to study and academic achievement and its role on improving self-control in study behavior? The probable causes are as follows:

First, the classroom learning in this study only assessed using the score of English language and the direct effect of the instructed method on this factor is probably not strong enough. Moreover, the attitudes are rooted in the past experiences and cannot be changed easily. So, by changing the procedure for assessing academic achievement and working on SSSR in a long-term period (for example a 6-months period), the results may differ.

In the case of the improvements happened in controlling study behavior, so many causes play role. The first one is that because of checking the students successes in following the plans after the end of a small time period, with any improve they will be reinforced for the future hard work and success. Moreover, because the time periods of following the plans are short and in checking time the students themselves select the desired plan, they grow a sense of ability in self-control. So, while most of them in past wanted to do something and they didn't (probably because they wanted to have a sudden profound change, they wanted to have a new behavior for a long period, or someone else were decided what they have to do), in this method the behavior change happens in short steps. For example, a person can decide that reduce her or his cigarette smoking from 10 per day to 8 per day and follow this plan just for 2 or 3 days. They have the

rights to select each plan they want, but every plan they choose, they must tell themselves loudly that "I want to smoke 8 cigarettes per day in future 3 days". After 3 days, they can change the plan to the form they wanted, it may be following the past 3 days plan, go back to their past plan for 3 or 4 days, or reduce the number of the cigarettes to 6 per day and so on.

According to SSSR method, the problem of the defeated people in changing their behavior is that they have a long history of breaking and they confront with new tasks with a negative sense of ability to self behavior control. So, the main goal of this method is changing the sense of un-ability to ability. In reaching this goal, three strategies are inserted in the SSSR method (Rashid, 2011). The first one is that the behavior change volume must be compatible with the base-line. So, the person doesn't feel so much deprivation. Second, the time-period is short. So, if the changed behavior is bothering, they will resist due to the small time range of the behavior control/change. This strategy increases the chance for sooner reinforcement and increases the chance for behaving according to the planned decision. And the last strategy in SSSR is that the person loudly tell her/him self what s/he wants to do. This strategy not only cause a sense of awareness to the decision, but also accompanying the decision making, telling the decision to themselves and the success increases the total sense of ability in self behavior control/change again.

In brief, SSSR is an effective method in increasing the sense and the ability to self behavior control in so many area, such as study behavior and it can be used by psychologists, counselors and the other therapists who works with the clients and by the people themselves.

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