Middle-East Journal of Scientific Research 19 (11): 1531-1537, 2014
ISSN 1990-9233

DOI: 10.5829/idosi.mejsr.2014.19.11.11423

Relationships Between Self-Concept, Self-Efficacy, Self-Esteem, Anxiety and Science Performance among Iranian Students

Maryam Sahranavard

Faculty of Educational Studies, University Putra Malaysia (UPM) 43400 Serdang, Selangor, Malaysia

Abstract: This study examined if students' general self-concept, science self-concept, self-efficacy, science self-efficacy, self-esteem, anxiety and science anxiety can be considered as predictors for science performance among lower secondary school students. The participants in the study were 680 lower secondary school students, (317 male and 363 female, in the age 14 years old) at Tehran and Shahriar City, the province of Tehran, Iran. Five valid and reliable instruments were used to assess Self-concept Attribute Attitude Scale, State-Trait Anxiety Inventory, Coopersmith Self-Esteem Inventory, General Self-Efficacy questionnaire and Science Self-Efficacy questionnaire. Descriptive statistics, correlation matrix of constructs and multiple regression analysis was used to analyses the data. The result demonstrated that general self-concept; science self-concept can be influence on science performance. But, self-efficacy, science self-efficacy, self-esteem, anxiety and science anxiety cannot be influence on science performance among 8th grade Iranian students in 2010/2011 academic year.

Key words: Self-concept · Self-efficacy · Self-esteem, anxiety · Science performance

INTRODUCTION

Students who believe in their abilities tend to perform successfully [1]. One of the most important issues of development, education and academic achievement is to consider the psychological dimensions in the curriculum. One of these dimensions is *self-efficacy* [2], where it is the belief, whether accurate or not, that one has the power to produce an effect upon something. For example, a person with high self-efficacy may engage in a more health-related activity when an illness occurs, whereas a person with low self-efficacy would harbor feelings of hopelessness [3] and following, science self-efficacy is the belief in one's own capability to do science, in terms of organizing and executing the skills and knowledge needed to manage science content and processes. Self-concept refers to the global understanding a sentient being has of him or herself. It presupposes [4], but can be distinguished from, self-consciousness, which is simply an awareness of one's self. It is also more general than self-esteem, which is the purely evaluative element of the self-concept [5] and science self-concept is a term used to describe one's perception of self in relation to achievement in science [6] and one's confidence in science [7]. Self-esteem can generally be defined as the set of attitudes and beliefs that a person bears in relation to the outside world, which includes expectations of success/failure, the effort required for possible success and the reaction to possible failure [8, 9]. Spielberger *et al*. [10] state that anxiety is a psychobiological process involving stressors that evoke perceptions of threat, which culminate in an unpleasant emotional reaction. As its name would suggest, science anxiety in students is a debilitating fear of learning science—but with the emotion processed on a cognitive level and lastly, science anxiety manifests itself primarily during examinations, but is distinct from an apprehension towards examinations in general, since students who exhibit science anxiety often react normally in their non-science subjects [11]. Therefore, Chang [12] noted that students in Asian countries have lower interests and self-concept in science than those in Western countries, but that, the former performs better than the latter. According to Kaya [13], selected students' self-concept and at the classroom-level, higher class levels-were consistently related to elementary science achievement. Naderi, *et al*., [14]

Corresponding Author: Maryam Sahranavard, Faculty of Educational Studies,
University Putra Malaysia (UPM) 43400 Serdang, Selangor, Malaysia.

indicated that there is no relationship between self-esteem and academic achievement (r=.074, P>0.05). and also, Kennedy [15], science self-efficacy does not significantly influence academic achievement. Meanwhile, Milford [16] in his study reveals that, there are negative relationships between science self-efficacy, science self-concept and science performance of Germanic students. Likewise, he also noted that, there are negative relationships between science self-efficacy, science self-concept and science performance of Spanish students. He mentioned that, science self-concept and science self-efficacy significantly correlated in the 0.5 range. Whereas, some researchers such as, Pehlivan and Koseoglu [17] in their study, a significant positive relationship was found between the science achievement levels and science self-concept. West and Fish [18] indicated that, self-concept and achievement significantly affects a student's performance. There is a positive relationship between self-efficacy, self-esteem and academic performance [19, 20]. Chang, *et al*., [21] notes that students in Asian countries have lower self-concept in science than those in Western countries. There is a significant correlation between students' value of science education and their level of science achievement [22]. Senler and Sungur [23] in their study noted that, at the elementary school level, significant relationships were found among science self-concept and science achievement. The TIMSS (1999) report reveals a clear positive association between self-concept in science and science achievement [24].

The results of Yurkewicz [25] showed that student perceptions of teacher behaviors were related to pupil science anxiety and that anxiety was negatively correlated with achievement (p<0.05). Self-esteem test (Popo) and science test were used to evaluate through descriptive statistic methods and t- test. The result shows that there was no significant relationship between self-esteem and science achievement. Despite this, Iranian students have higher science achievement and they typically have a higher self-esteem [26].

Based on to above mentioned and importance of the factors in academic achievement, this study generalized this information to specifically Iranian eighth grade lower secondary school students. Some studies obtained similar results and the other studies were showed different results. This study determined whether, the general self-concept, science self-concept, self-efficacy, science self-efficacy, self-esteem, anxiety and science anxiety can consider as predictors on science performance among Iranian eighth grade lower secondary school students.

MATERIAL AND METHODS

Sample: The sample for this study is selected from the total population of Eighth Grade students in lower secondary schools from large community schools in Tehran city as urban and Shahriar as suburban and the rural areas of Shahriar, during the academic year of 2010/2011. For the present study, stratified sampling was used and therefore the sample of this study involves two centrally-located school districts among 21 districts of Tehran with 120 male and 160 female students and also Shahriar lower secondary schools with 202 male and 198 female students.

Procedure: Data were collected by means of structured questionnaires and by taking class as a unit. Based on verbal agreements of the training lecturers and participants, the questionnaires forms were distributed to the 680 lower secondary school students. Participants were asked to complete the questionnaires simultaneously at the start of a core lecture and return them to their lecturer on the spot. All completed questionnaires were passed on to the researchers. All participants were informed that the participation was voluntary and anonymous based.

Measures: All participants responded to Iranian translation of the instruments in this study which is listed below. They were translated into Persian and then the questionnaires were verified by the panel of lecturers and researchers to check the format, arrangement, appropriateness of the content and the language used in the instruments [27, 28, 29, 30 and 31].

Self-concept Attribute Attitude Scale (SAAS): The SaaS instrument was developed by Campbell [32]. The response format is a five-point Likert scale. The first version of SaaS was developed by factor analyzing the data from 1300 high achieving high school students, with exploratory and confirmatory factor analyses determined for each sample. These factors were extracted by using the Principal Component Analyses with varimax iterations. The three factors that were produced from the factor analyses are math self-concept, science self-concept and general self-concept. In the present study, only general self-concept and science self-concept were used which include 6 and 14 items relating to general self-concept, For example, I take a positive attitude toward myself and science self-concept, for example, I have a lot of self-concept in science. A major contribution to the

validity of the self-concept scales comes from the extensive factor analyses used in the development of the SaaS. Most items had factor loadings in excess of.60 [32]. Alpha reliability values were calculated for general self-concept of 0.85 and a science self-concept of 0.89 were used [33]. In this study, the reliability coefficient for each subscale ranged between 0.87 for science self-concept and 0.61 for general self-concept.

State-trait Anxiety Inventory (STAI): The STAI developed by Spielberger [34] contains self-report scales for measuring both state and trait anxiety. The S-Anxiety Scale (STAI Form Y-1) used in this study consists of twenty statements designed to evaluate how a respondent feels at that particular time, for example, I feel calm in science. The T-anxiety (STAI Form Y-2) refers to the relatively stable-individual differences in anxiety proneness, i.e., the tendency of an individual to perceive stressful situations as a threat and to then respond to these situations with a heightened S-anxiety reaction [35] and used in this study consists of twenty statements, for example, I feel pleasant. The S-Anxiety Scale required the respondent to determine how he or she feels at a particular moment in time. Evidence bearing on the construct validity of the state scales was derived from a sample of 977 undergraduate students at Florida State University with a median r of.73 for females and.60 for males [10]. Caldwell [36] obtained an alpha coefficient of 0.94 for the S-Anxiety. T-Anxiety scores [37, 38]. In this study, the reliability coefficient for each subscale ranged between 0.88 for S-Anxiety and 0.85 for T-Anxiety.

Coopersmith Self-esteem Inventory (CSEI): The CSEI measures general self-esteem. Coopersmith's [8] own inductive work examined CSEI scores as they related to other personality constructs. The present study has used the Adult Form of the CSEI, which is adapted from the School Short Form for children. The CSEI-A is a 58-item questionnaire completed by respondents by way of answering a five-point Likert scale. As Coopersmith [8] claims, the questionnaire is designed to measure "the evaluation a person makes and customarily maintains with regard to him or herself". The CSEI has been the subject of many validity research studies [39]. For example, I spend a lot of time daydreaming. A study by Kokenes [40] confirmed the construct validity of the subscales used to measure of self-esteem that were proposed by Coopersmith. Test retest reliability for the CSEI was originally reported by Coopersmith to be 0.88 for a sample of 50 children in grade V and 0.70 for a sample of 56 children, 12 years old [41]. In this study, the Cronbach's coefficient alpha for CSEI was 0.86.

General Self-efficacy (GSE): General Self-Efficacy (GSE) developed by Sherer *et al*. [42] is designed to gauge self-efficacy in clinical, educational and organizational settings [43]. The measure contains items assessing GSE and social self-efficacy, but only GSE items be considered in the present study. As Sherer *et al*. [42] claim, these items tap a "general set of expectations that the individual carries into new situations." The GSE Scale contains is 17-items, for example, When I make plans, I am certain I can make them, while the response format is a five-point Likert scale. The sum of item scores reflects general self-efficacy, meaning that the higher the total score, the more self-efficacious the respondent. Convergent validity has been established in studies comparing the general self-efficacy scale and similar clinical measures [42]. Reliability, measured with Chronbach's alpha, was found to be.86 for General Self- Efficacy [42]. In this study, the Cronbach's coefficient alpha for CSE was 0.79.

Science Self-efficacy Questionnaire (SSEQ): The SSEQ was developed by Smist [44] to assess students' self-efficacy in science by measuring beliefs about competence in school science tasks [44]. The SSEQ-A is a 27-item questionnaire completed by respondents by way of answering a five-point Likert scale. The SSEQ was developed to assess students' self-efficacy in science by measuring students' own beliefs about their competence to perform or complete science-related tasks. This questionnaire includes physics, chemistry, biology and laboratory. The researcher has used science totally. In the present study, only science self-efficacy was included which includes nine items related to science, for example, I can use a computer in science class. In this study, the Cronbach's coefficient alpha for SSEQ was 0.70.

RESULTS

To carry out the main objective of the present study, the obtained data were subjected to a number of statistical analyses by using statistical package for social sciences (SPSS 18.0). Besides, descriptive statistics, MANOVA were also used in this study.

Descriptive Statistics: A perusal of table 1 reveals that the largest mean scores on self-esteem is 188.77 with the SD of 25.32 and the smallest mean scores on science score is 15.94 with the SD of 3.12 (Table 1).

Table 1: Descriptive Statistics of the Independent and Dependent Variables

	N	Maximum	Minimum	Mean	Std. Deviation
Science score	680	6.00	20.00	15.94	3.12
Science self-concept	680	14.00	70.00	47.97	10.81
Self-concept	680	6.00	30.00	20.73	4.43
Science Anxiety	680	20.00	80.00	44.02	11.25
Anxiety	680	20.00	80.00	45.43	10.54
Self-esteem	680	94.00	274.00	188.77	25.32
Self-efficacy	680	17.00	85.00	58.61	10.11
Science Self-efficacy	680	9.00	45.00	28.42	6.67

Table 2: Correlation Matrix of constructs

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Science score (1)								
Science self-concept (2)	.439**							
Self-concept (3)	.408**	.46**						
Science Anxiety (4)	-.291**	-.608**	-.453**					
anxiety (5)	-.164	-.361**	-.444**	.606**				
Self-esteem (6)	.243*	.498**	.551**	-.57**	-.762**			
Self-efficacy (7)	.177	.417**	.427**	-.451**	-.582**	.656**		
Science self-efficacy (8)	.312**	.562**	.408**	-.442**	-.356**	.465**	.312**	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 3: Result of Multiple Regression Analysis

Variables	Summary of Regression	Un-Std Coefficient B	Un-Std Coefficient Std. Error	Std. Coefficient Beta	t	Sig. Value
(constant)		7.161	5.520		1.297	.199
Science self-concept		.093	.043	.328	2.158	.035*
Self-concept		.257	.085	.403	3.015	.004*
Science Anxiety		.001	.042	.003	.019	.985
Anxiety		.015	.047	.059	.325	.746
Self-esteem		-.026	.022	-.241	-1.167	.248
Self-efficacy		.019	.043	.064	.431	.668
Science Self-efficacy		.062	.072	.117	.869	.388
Multiple R	.572					
R Square	.328					
Adjusted R Square	.25					
F-Statistics	4.245*					

Note. Predictor: students' self-concept, self-efficacy, self-esteem, anxiety. Dependent Variable: Total science performance, * p <.05.

Correlation among the Constructs: Correlation among the constructs described a prelude to the overall nature of the relationships among the constructs involved in multiple regression analysis. Hence, the inspection of the bivariate relationships provided some insight in explaining result of MRA (Table 2).

Multiple Regression Analysis (MRA): MRA was computed to assess the strength of relationship between dependent and independent variables. MRA provides an opportunity with little ambiguity to assess the importance of each of the predictors to the overall relationship. The results of regression analysis for the dependent variable (science performance) are presented in table 3. It is clear from the results that the regression analysis accepted the variables (general self-concept, science self-concept, self-efficacy, science self-efficacy, self-esteem, anxiety) (Table 3).

DISCUSSION

The results of coefficients of regression of the present study in table 4.5 shows that R and R^2 equal.572 and.328 respectively ($F_{(7, 61)} = 4.245$, $p = 0.001$), based on regression coefficients only science self-concept and self-concept are statistically significant. While, there are not statistically significant in coefficients of regression for the other variables.

As indicated in results of regression analysis, predator variables such as self-concept and science self-concept determine almost 33 percent of dispersion of science scores. Accordingly to the moderate value of variances determined here, it could be stated that general self-concept and science self-concept have a significant role in the learning of participants of the science.

The finding of the current study the same as other studies [45, 46, 47, 48 and 49] signified that there is no relationship between two variables of self-esteem and academic achievement. According to the results of this study and other studies in this regard, it can be stated that the variable of self-esteem has no role in the students' academic achievement. According to correlation coefficient between this variable and the variable of academic achievement in science, can be seen that these variables have a small positive relationship (i.e. 0.243). However, when investigating the relationship between this variable with the other variables as the predictor variable, this variable loses its significance. According to this finding, it can be mentioned that there are other variables in the presence of which the variable of self-esteem loses its relationship with since performance. Therefore, it seems that the role of self-concept and science self-concept are more significant than that of self-esteem.

This is also true for the variable of self-efficacy as the predictor variable for academic achievement, since the other studies also are in line with the present study in not finding any relationship between this variable and the academic achievement [50]. Additionally, as the results of the correlation showed, there is no statistically significant relationship between this variable and the science. So, totally investigating the relationship of this variable with science score along with other variables or without them indicates that this relationship has a zero value.

The results of this study align with other studies [51, 24, 23] indicated that the variables of self-concept and science self-concept have relationship with science achievement. As mentioned earlier, the effect of these two variables on science achievement is more than the other variables of this study. Since, although the other variables have relationship with science score based on simple correlation coefficients, but in regression analysis when of self-concept and science self-concept are exist in the regression equation, the other variables lose their relationship.

CONCLUSION

The results of the present study indicated that, the independent variables of science self-concept and self-concept have positive correlation with the science score so that these variables (science self-concept and self-concept) together have determined 32 percent of the variance of science scores. Consequently, the role of these variables and concerning them gains so much importance in the instruction of the science. The investigation of semi partial correlation coefficients achieved from the analysis, which is the indicator of the allocated ratio of each variable, shows that the variable of science self-concept has determined 5% of explained variance (33%) and self-concept has determined 10% of explained variance that shows that the self-concept is more important than science self-concept. As a result, it can be stated that 17% of the explained variance is due to the impact of both variables together. Based on the relationship between science self-concept and self-concept, it seems that total self-concept variable has more important role in the instruction of the science and practitioners of the education should have a close eye to this variable.

ACKNOWLEDGMENTS

We would like to thank all the administration officers at all participating schools for giving the research team information about their students in the schools. We also appreciate the contribution of lower secondary schools students by participating in this research, thus allowing us to collect the necessary data for the study.

REFERENCES

1. Bandura, A., 1993. Perceived self-efficacy in cognitive development and functioning. Educational Psychologist, 28(2): 117-148.
2. Bandura, A. and N.E. Adams, 1977. Analysis of self-efficacy theory of behavioral change. Cognitive Therapy and Research, 1(4): 287-310.

3. Sue, D., D.W. Sue and S. Sue, 1986. Understanding abnormal behavior: Houghton Mifflin Boston.
4. Miller, M.D., 2006. Science self-efficacy in tenth grade Hispanic female high school students. University of Central Florida Orlando, Florida.
5. Fleming, J.S. and B.E. Courtney, 1984. The dimensionality of self-esteem: II. Hierarchical facet model for revised measurement scales. Journal of personality and social psychology, 46(2): 404-421.
6. Byrne, B.M. and R.J. Shavelson, 1987. Adolescent self-concept: Testing the assumption of equivalent structure across gender. American Educational Research Journal, 24(3): 365.
7. Campbell, A.M., 1992. Chromosomal insertion sites for phages and plasmids. Journal of bacteriology, 174(23): 7495.
8. Coopersmith, S., 1967. The antecedents of self-esteem: WH Freeman San Francisco.
9. Coopersmith, S., 1981. Self-esteem inventories: Consulting Psychologists Press Palo Alto, CA.
10. Spielberger, C.D., R.L. Gorsuch and R. Lushene, 1983. Manual for the state-trait anxiety inventory.
11. Mallow, J., 1994. Gender-related science anxiety: A first binational study. Journal of Education and Technology, 3: 227-238.
12. Chang, Y., 2008. Gender Differences in Science Achievement, Science Self-concept and Science Values, Proceedings of the IRC-2008 TIMSS, Taiwan.
13. Kaya, S., 2008. The effects of student-level and classroom-level factors on elementary students' science achievement in five countries.
14. Naderi, H., R. Abdullah, H.T. Aizan, J. Sharir and V. Kumar, 2009. Selfesteem, gender and academic achievement of undergraduate students. American Journal of Scientific Research, 3: 26-37.
15. Kennedy, H.L., 1996. Science learning: A self-efficacy study in higher education. University of Southern California.
16. Milford, T., 2011. An Investigation of International Science Achievement Using the OECD's PISA 2006 Data Set. Published doctoral dissertation. University of Victoria.
17. Pehlvan, H., 2010. Ankara fenl SES o renc ler n n mathemat k ders ne yonel el k tutumlari le akadem k benl k tasarimlarinin bazi a lesel faktorler acisindan ncelenmes.
18. West, C.K. and J.A. Fish, 1973. Relationships between self-concept and school achievement: A survey of empirical investigations A final report to the ERIC Clearinghouse on Early Childhood Education, ED 092: 239.
19. Landine, J. and J. Stewart, 1998. Relationship between metacognition, motivation, locus of control, self-efficacy and academic achievement. Canadian Journal of Counseling, 32(3): 200-212.
20. Lockett, C.T. and J.P. Harrell, 2003. Racial Identity, self-esteem and academic achievement: Too much interpretation, too little supporting data. Journal of Black Psychology, 29(3): 325-336.
21. Chang, M.Y., P.H. Lo and T.P. Chang, 2006. The Fourth Grade Students' Science Cognitive Performance and Influential Factors of Six Countries in TIMSS 2003. Paper presented at the IEA. IRC2006-TIMSS, Washington.
22. Martin, M.O., I.V.S. Mullis and S.J. Chrostowski, 2004. TIMSS 2003 Technical Report: Findings from IEA. TIMSS and PIRLS International Study Center, 507.
23. Senler, B. and S. Sungur, 2009. Parental influences on students' self-concept, task value beliefs and achievement in science. Spanish journal of psychology, 12(1): 106.
24. Martin, M.O., I.V.S. Mullis, E.J. Gonzalez, K.D. Gregory, T.A. Smith and S.J. Chrostowski, *et al*., 2000. TIMSS 1999 international science report: Findings from IEA's repeat of the Third International Mathematics and Science Study at the eighth grade: International Study Center, Lynch School of Education, Boston College, Chestnut Hill, MA.
25. Yurkewicz, W., 1988. The relationship among teacher behaviors, science anxiety and success in science. The University at Albany, State University of New York, Dept. of Educational Theory and Practice.
26. Mefteh, S., 2002. The relationships between timidity shyness, self-esteem and academic achievement among middle of schools' students. University of Tarbiyat Moallem, Tehran, Iran, Unpublished master of thesis.
27. Asghar-Nezhad, T., M. Karimi Klwadapanahi and M. HeydariI, 2004. The relationship between general self-efficacy, locus of control and academic achievement Journal of Psychology.
28. Fathi-Ashtiani, A., J. Ejei, M.K. Khodapanahi and H. Tarkhorani, 2007. Relationship between Self-Concept, Self-esteem, Anxiety, Depression and Academic Achievement in Adolescents. Journal of Applied Sciences, 7: 995-1000.
29. Fathi, H., 2006. A Study On The Relationship Between Self-Esteem And Academic Achievement Of Iranian Students BF697. 5. S46 H615 2006H615 2006 ff rbrb. Universiti Sains Malaysia Penang, Published Master of thesis.

30. Hayati, A.M. and M. Ostadian, 2008. The Relationship between Self-esteem and Listening Comprehension of EFL Students.
31. Khodarahimi, S., 2010. General self-efficacy and worry in an Iranian adolescents and youths samples.
32. Campbell, J.R., 1991. The roots of gender inequity in technical areas. Journal of Research in Science Teaching, 28: 251-262.
33. Carmines, E.G. and R.A. Zeller, 1979. Reliability and validity assessment CA: Sage Publications.
34. Spielberger, C.D., R.L. Gorsuch and R.E. Lushene, 1970. State-trait anxiety inventory-STAI manual: Calif: Consulting Psychologists Press: Inc.
35. O'Neil, H.F. and C.D. Spielberger, 1979. Cognitive and affective learning strategies: Academic Pr.
36. Caldwell, L.M., 1988. Preferences for information and self-care, stress and coping with outpatient surgery: A descriptive correlational study. Unpublished Dissertation Abstracts International. Boston University.
37. Dreger, R.M., 1978. Review, state-trait anxiety inventory. New Jersey: The Gryphon Press.
38. Katkin, E.S., 1978. Review, state-trait anxiety inventory. New Jersey: The Gryphon Press.
39. Taylor, J. and W. Reitz, 1968. The three faces of self-esteem. Research Bulletin #80. London, Ontario: University of Western Ontario.
40. Kokenes, B., 1978. A factor analytic study of the Coopersmith Self-Esteem Inventory. Adolescence.
41. Azar, I.A.S. and P. Vasudeva, 2006. Relationship between Quality of Life, Hardiness, Self-efficacy and Self-esteem amongst Employed and Unemployed Married Women in Zabol. Iranian Journal of Psychiatry, pp: 1(3).
42. Sherer, M., J.E. Maddux, B. Mercandante, S. Prentice-Dunn, B. Jacobs and R. Rogers, 1982. The Self-Efficacy Scale: Construction and validation. Psychological Reports, 51: 663-671.
43. Chen, G., S.M. Gully and D. Eden, 2001. Validation of a new General Self-Efficacy Scale. Organizational Research Methods, 4: 62-83.
44. Smist, J.M., 1993. General Chemistry and Self-Efficacy.
45. Emamzadeh, Z.M., 2004. To compare the social skills and self-esteem and academic achievement among students in Oromieyeh city. University Tarbiat Moallem, Tehran, Iran, Unpublished Master of dissertation.
46. Maruyama, G.M., R.A. Rubin and G.G. Kingsbury, 1981. Self-esteem and educational achievement: Independent constructs with a common cause? Journal of personality and social psychology, 40(5): 962.
47. Miraei, R., 2005. The relationship between Self-esteem, Self-Concept and Academic Achievement among Junior of High School 'Students. University of Tarbiat Moallem Tehran, Iran, Unpublished master of thesis
48. Naderi, H., 2009. Relationship between Intelligence, Creativity, Self-esteem and Academic Achievement among Iranian Undergraduate Students in Malaysian Universities. Published doctoral dissertation. University Putra Malaysia.
49. Zeinvand, A., 2006. Relationships between self-esteem, social support and student's educational progression in a high school in Dareh Shar city in Iran. University of Tabiat Moallem Tehran, Iran, Unpublished master of thesis.
50. Ghalati, N., 2004. Investigation and comparative of relationship between social supportive and self-efficacy, studying habit towards science in science among male and female eighth grade students in shiraz city. Tarbiat Moalem University, Tehran, Iran, Unpublished master of thesis.
51. Kabiri, M. and E.S. Gharbi, 2009. Comparing high with low science performance students in some variables of fourth grader in Iran. IRC 2010, http://www.ieairc.org/index.php?id=timss