The Effect of Perceived Motivational Structure of Classrooms on Achievement Behaviors

Algılanan Sınıf Motivasyon Düzeyinin Başarı Davranışları Üzerindeki Etkisi

Siavash Talepasand[1]

Abstract

The aim of the study was to investigate the effect of perceived motivational structure of classroom on achievement behaviors (the choice of problem, effort, persistence in solving algorithm and flowchart problems). There were 45 high school male students (Mean age = 17 years old) in the third grade of computer field in three classes. Classes were divided into two experimental and one control group. Instructional content was given in 10 sessions for 180 minutes. The variables of choice, effort, and persistence were collected by direct assessment method. A pre-test and post-test design was used. The Data were analyzed by using multivariate analysis of variance. Results indicated that mastery structure had positive effect on the amount of effort and persistence in solving algorithm and flowchart problems in comparison with control group. Mastery structure in comparison with performance structure increased the amount of effort in solving problems significantly. In addition, an interactive effect between previous achievement and perceived structure of classroom was achieved in a mastery level. The amount of persistence in that of students with very weak previous achievement was more than students with average previous achievement. The finding of this study is compatible with the theory of achievement goal and illustrates that the mastery structure plays an effective role in forming achievement behaviors.

Key Words: perceived classroom structure, mastery purposes, performance purposes, choice, effort, persistence, previous achievement

Öz

Bu çalışmanın amacı sınıfın algılanan motivasyonel yapısının başarı davranışları (problem seçimi, çaba, algoritma ve akış diyagramı problemlerini çözmede istikrar) üzerindeki etkisini araştırmaktır. Araştırmanın katılımcılarını lise üçüncü sınıfa devam eden 45 erkek öğrenci oluşturmuştur. Öğrenciler bilgisayar alanında üç farklı sınıfa devam etmektedir (yaş ortalaması = 17). Sınıflardan ikisi deney grubu, üçüncüsü ise kontrol grubu olarak belirlenmiştir. Eğitsel içerik 180 dakikalık 10 seansta verilmiştir. Seçim, çaba ve istikrar verileri doğrudan ölçme yöntemi ile toplanmış ve ön-test ve son-test deseni kullanılmıştır. Elde edilen verilerle MANOVA analizleri yapılmıştır. Deney ve kontrol gruplar kıyaslandığında sonuçlar başarı düzeyinin algoritma ve akış diyagram problemlerini çözme üzerinde olumlu etkilerinin olduğunu göstermiştir. Performans yapısı ile karşılaştırıldığında, yeterlik yapısının problem çözmeye harcanan çabayı anlamlı bir şekilde arttırdığı bulunmuştur. Ek olarak önceki başarı ve algılanan sınıf yapısı arasında interaktif bir etki elde edilmiştir. Önceki başarıları çok düşük olan öğrencilerin ortalamadan daha yüksek seviyede istikrar gösterdikleri bulunmuştur. Bulgular başarı hedefi teorisi ile uyumludur ve başarı düzeyinin başarı davranışları oluşturmada etkili bir role sahip olduğunu göstermektedir.

Anahtar Sözcükler: algılanan sınıf yapısı, yeterlik amacı, performans amacı, seçim, çaba, başarı

[1] *PhD, Educational Psychology Department, Semnan University, Semnan, Iran; stalepasand@semnan.ac.ir*

ISSN 2146-3832, http://www.tuzed.org

Introduction

Achievement goal theory is a social – cognitive theory that is useful to study motivation in class backgrounds and individual beliefs such as achievement goal orientation. In this theory, it is assumed that students follow several achievement goals. Two or three different achievement goals in literature of achievement goal theory are mentioned. On the other hand, perceived environments of classroom are those that teachers can involve students, encourage interaction between them and form specific types of behaviors. Perceived classroom goal structure (PCGS) affects the kind of goal chosen by the students. PCGS highlights meaning and the goal of educational activities and success in a specific background. Instructional environment or classroom structure causes achievement goal orientations and different motivational patterns and behaviors. For example, the type of determined tasks, the method of scoring, the degree of learners' autonomy and methods that they categorize in a class influences goals of achievement and subsequent motivational behaviors (Ames, 1992, Kaplan & Middleton, 2002, Urdan, 2004, 1997). In literature, two classroom structures are emphasized: one is a perceived structure of classroom in mastery level and the other in performance level. A mastery perceived structure of classroom (MPS) describes the environment that instructional practices, guidelines, and norms transfer this massage in learners that learning is important, all of learners are valuable, hard effort is important, and accordingly if all of people work hard, they can succeed. A performance perceived structure of classroom (PPS) describers a climate in which relationship for people's success means receiving external awards, indicating high ability and performing better than others (Midgley et al. 1998). According to Ames (1990), TARGET (Task, Authority, Recognition, Grouping, Evaluation, and Time) are six characteristics in classroom structure which are manipulated and exert influence on motivational engagements.

Several studies have shown the importance of relation between student's perception from emphasized goal structures in a classroom and the range of educational and motivational consequences. An MPS increase the choice of effective learning strategies, and positive feeling in self and school, are related to positive affections and coping strategies (Ames & Archer, 1988; Anderman, 2002; Kaplan & Maehr, 1999; Kaplan & Midgley, 1997; Ryan, Gheen & Midgely, 1998; Urdan, Midgley & Anderman, 1998). In addition, students' comprehension of mastery goal structure in a class has major impact on choosing mastery goal orientation (Anderman & Maehr, 1994). On the other hand, a PPS is associated with avoidance-goal orientations, the surface processing and self-handicapping strategies (Miki & Yamauchi, 2005). It is expected that classroom structures which have specific characteristics help students promote a specific type of goal orientation and pursue certain achievement behaviors.

Although relation between individual achievement goal orientation with motivational engagements has been investigated in some studies (Wolters, 2004; Urdan, 1997; Miller et al, 1993), the effect of classroom perceived structure on motivational engagements has been focused on less. In addition, in the previous researches co relational designs were used in order

to investigate relationship between classroom perceived structures and motivational behaviors (Ames & Archer, 1988; Greene, Miller, Crowson, Duke & Akey, 2004; Guttmann, 2006; Sungur &Gungoren, 2009; Wolters, 2004). Furthermore, in the previous studies, the casual effect of perceived structure was not studied on these behaviors. However, some researchers have shown that classroom structure affects a range of variables such as individual achievement goal orientation, help seeking, academic achievement, cognition, affection, and performance (Linnenbrink, 2005; Self –Brown & Mathews, 2003; Urdan & Midgley, 2003).

One of the previous research drawbacks is using self- report measures to assess several variables e.g. Patterns of Adaptive Learning Survey (PALS, Midgely et al., 1996). Some studies have shown that original PALS probably has some problems (Anderman & Midgley, 1997; Midgley et al., 2000), because the teachers' approach to instruction does not dominate the classroom context, but perception of classroom goal structures forms the student' perceptions in general. However, methods of self- report in collecting data have essential problems (lack of self-insight, non-reality reports and so on). Consequently, in this study direct method for assessing the variables was used. In addition, in the past researches had paid less attention to make mastery or performance structures experimentally and investigate its effect on motivational engagements in computer classes in general and algorithm and flowchart classes in particular. The content of computer field lessons can be arranged by the type of the problem based on difficulty level. Thus, in this study both quasi-experimental design and computer field were used. The goal of this research was to investigate the effect of the perceived classroom goal structures on choice, effort, and persistence in solving problems. In this study, it was tried to study the direct effect of the perceived classroom goal structures on motivational behaviors.

Method

Participants

Participants were 45 high school male students (mean age = 17 years old) in grade three in computer field. There were three classes. A class was divided into a mastery group (15 participants), a performance group (15 participants) and a control group (15 participants). Instructional content was presented in 10 sessions with 180 minutes per session. Choice, effort, and persistence were collected by direct assessment method in a pre and posttest design.

Tools

In this study, problems choice with average difficulty level, effort and persistence in problem solving were measured with direct assessment method as follows:

Choice. A list of fifteen problems was arranged according to difficulty level, prepared, and presented to the examinees. Five difficult problems (For example, write an algorithm that could add the numbers that are on main diagonal in a matrix), five easy problems (For ex-

ample, write an algorithm that can add two numbers), and five problems with average difficulty (For example, write an algorithm that can compute odd ratio of arithmetic mean in geometric mean in an array). Any examinee could choose five problems from the list of presented problems. For example, he could choose five easy problems or three easy and two difficult problems. Thus, any examinee selected his interesting problems but the number of problems with average difficulty selected by any student was counted.

To estimate reliability coefficient, the permanent productions of behavior or productivity registration method was used. Two raters counted the number of problems with average difficulty as an index of choice for all of examinees, separately. The number of agreements and lack of agreements were registered by two raters. Reliability coefficient was 98 percent.

Effort. Five problems were presented to each examinee with correct answers to the problem in a closed pack. "For example, write an algorithm in a way that it adds odds numbers lower than 100. ". Effort was measured by counting the number of problems that students did not refer to their answer key but solved correctly. In order to determine the reliability coefficient of effort, permanent productions of behavior method was used. First, two raters determined the accuracy of the problems and then counted correct answers. Criterion for accuracy of any program was determined if it could run correctly. Finally, reliability coefficient was 97 percent.

Persistence. Teacher wrote down a problem on the board and read the following guideline for students. "It is not expected that everyone can answer this problem correctly but you do your best to think about it and try to reach final answer and give part of the answer or final answer. At the end, hand over your sheet with the provided answers and leave the class." This problem did not have any specific answer or solving it was very difficult. "For example, write an algorithm to make an M × N matrix then replace the data in the first row with the data in the first column. Likewise, on the same sequences, put the data in "m" row in the place of data in row "n", and then draw its flowchart". Enough time was given to the examinees in order to think about the possible answers to this problem. Persistence was measured by registering time for students to answer the problem disregarding the correctness of the answers. To determine the reliability coefficient of persistence, two referees themselves spent time for solving the problems. Reliability coefficient of two referees was considered as reliability of persistence. This coefficient was .96.

Procedures

In this research, one group was considered under mastery structure, one group under performance structure, and the other group as a control group. Choice, effort, and persistence in three groups were collected in pre and posttest. Instructional content was the same in three groups. In experimental groups, instructional content was instructed in 10 sessions and every session lasted 180 minutes. Instructional syllabus of algorithm, flowchart and visual basic language included: having knowledge about problems and presenting suitable solutions to

them, problem analysis from clear amounts aspects, calculations and problem demands, algorithm and flowchart definitions and their features, different principles and instructions in algorithm and showing their flowchart, different functions in algorithm, accuracy of algorithm function, other flowchart shows, repetition rule introduction in algorithm, combination of conditional and repetition rules in algorithm, introduction of slash and Mod operators and one-dimensional and two -dimensional arrays (definition, drawing, construction and information savings).

In experimental group with mastery structure, the following components were emphasize during the classroom instructions: *Individual evaluation* (comparing current achievement of examinee to his previous achievement), *emphasize on individual improvement* (their improvement compared with the past was registered on the student's notebook: "Compared with the past has improved", "compared with the past has not improved", "Compared with past has deteriorated"). *Encouraging the idea that making mistakes is a part of learning* (during evaluating or classroom instruction if a student answers question wrongly, teacher states the following statement "making a mistake is a part of learning. During the process of learning, making mistakes is something natural"), *emphasize on meaningful aspects and designing new tasks*. After the class, teacher designed various and new tasks for grouping or individual activities, *giving freedom and solving problems collaboratively* (teacher formed non-homogenous group of students and changed group members in every sessions if needed). After designing a class practice, the teacher asks students in pre-determined groups to find answers to the presented problems. Among the proposed answers by the groups, the answer that was close to the final answer was selected and was written on the board. In this stage, by using function table of algorithm the values were tested line by line and students were encouraged to cooperate and process the problems deeply. After two sessions, teacher assigned a number of exercises and wrote in front of each practice "easy", "average", and "difficult". This was due to determine the difficultly level of the practice. In this situation, students or their groups by their own choice chose one or more practices among planned practice lists and started to solve them. The order and sequence of answering to the exercises were up to the students.

In experimental group with performance structure, the following sections were emphasized during classroom instruction syllabus: *Evaluation* (general evaluation was carried out. After every total evaluation, scores chart was drawn and low and high scores were compared with each other). *Designing tasks* (designing drills that could be answered easily and correct answers could be reinforced by giving score to the correct answers. The teacher set marks to each task before administering the tasks provided.

Findings

In general, four students were excluded from the study because they absent more than three sessions (three students from performance group and one student from control group). Mean and standard deviation of the previous achievement score as well as gained score in effort,

persistence, and choice of all the groups have been reported in Table 1. All the groups had low pervious achievement. Gain scores of mastery group in effort, persistence, and choice were more than performance and control groups. Furthermore, the gained scores in performance group were more than control group.

Table1. Mean and Standard Deviation of Gain Scores and Previous Achievement

Variable	Mastery n=14		Performance n = 12		Control n = 15	
	M	SD	M	SD	M	SD
Choice	0.57	1.83	0.58	1.08	-0.2	1.37
Effort	1.07	1.49	0.33	0.65	0.13	0.35
Persistence	23.4	19.7	8.33	11.32	1.67	2.79
Previous Achievement	8.16*	1.33	7.67*	2.06	7.48*	1.71

*Range 1 - 20

For testing hypothesis, MANOVA analysis was conducted. First, equality of covariance matrix was tested by Box's test (Box's $M_{(12, 6398.22)} = 68.57$; $p > 0.05$). In addition, results of Shapiro Wilk's test indicated that the gained scores of effort, choice and persistence were distributed normally in three groups. There was not any outlier score in the data. The correlations between effort, choice and persistence were low and not significant (range *r = 0.09 to 0.27*). MANOVA analysis results indicated that the gain scores in three groups had significant difference statistically (Wilks' Lambda = .556; $F_{(6, 72)} = 4.098$; $p = 0.001$; Eta = .255). Results of tests of between-subjects effects indicated effort gain scores ($F_{(2, 38)} = 3.719$; $p < 0.05$; Eta = .16) and persistence ($F_{(2, 38)} = 10.218$; $p < 0.01$; Eta = .35) had significant difference in three groups, but choice gain scores ($F_{(2, 38)} = 1.319$; $p > 0.05$) did not have any significant difference statistically (Table 2). Then, follow up Scheffe post hoc test was carried out. Results showed that effort gain score in mastery group was more than control group ($MD_{ij} = 0.94$; $p < 0.05$). In addition, persistence gain score in mastery group was more than control group ($MD_{ij} = 21.69$; $p < 0.001$) and performance group ($MD_{ij} = 15.02$; $p < 0.05$).

Table 2. Tests of Between Subjects Effects

Variable	Type III Sum of Squares	Df	Mean Square	F	Sig.	Eta
Choice	5.74	2	2.87	1.32	0.279	0.065
Effort	6.91	2	3.45	3.72	0.033	0.164
Persistence	3529.76	2	1764.88	10.22	0.001	0.350

In this study, moderator role of pervious achievement was examined as well. First and fourth quartiles were selected as very weak group and average group (see the mean of per-

vious achievements in table1). This variable was entered as another factor in the analysis. MANOVA analysis results indicated that there was a significant interaction effect statistically (Wilks' Lambda = .28; $F_{(6, 28)} = 4.17$; $p = 0.004$; Eta = .472). Results of tests of between-subjects effects indicated that the interaction effect of persistence gain scores was significant ($F_{(2, 16)} = 5.44$; $p < 0.05$; Eta = .41), but effort and choice gain scores did not have any significant difference (Table 3). Then, follow up post hoc test was carried out. Results showed that in mastery structure very weak students had higher persistence gain score than average students ($MD_{ij} = 43.75$; $p < 0.01$) (Figure 1).

Table 3. Mean and Standard Deviation of Gain Scores By Previous Achievement × Experimental Groups

Variable	Mastery				Performance				Control			
	Very low		Average		Very low		Average		Very low		Average	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Choice	-1.00	0.00	2.25	2.22	1.00	0.82	0.66	1.15	-0.40	0.89	-0.75	1.71
Effort	16.00	2.82	9.25	6.89	-0.50	5.07	8.33	1.53	-2.40	10.78	1.00	5.09
Persistence	56.00*	11.3	12.25	23.93	8.25	17.91	6.33	8.51	-0.4	3.36	3.25	1.71

* Significant difference with Mastery-Average group

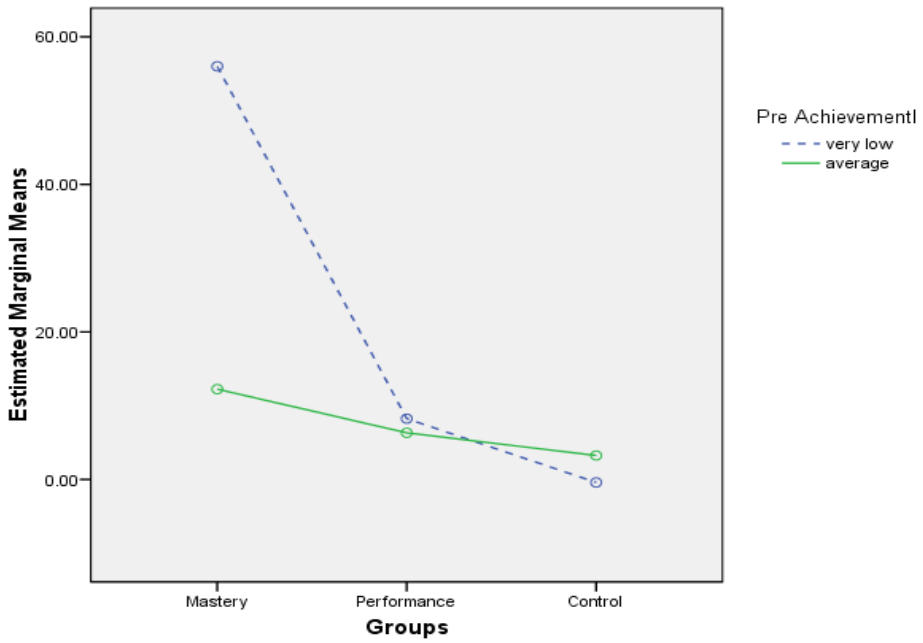

Figure 1. Interaction effect previous achievement and experimental groups on gain score of persistence.

Discussion

The main findings of this study are as follows: students who perceived structure of classroom as mastery had more effort and persistence than control group. In this structure, students had more persistence than performance group. In addition, pervious achievement had a moderator role. Results showed that in mastery structure the students with very weak previous achievement had persistence gain score more than those with average previous achievement.

The acquired results in this research are consistent with recent findings in achievement goal theory and extended co relational relations in quasi-casual effects (Ames & Archer, 1988; Bouffard, Boisvert, Vezeau, & Larouche, 1995; Church, Elliot & Gable, 2001; Elliot & Dweck, 1988; Mac Iver, Stipek, & Daniels , 1991; Meece & Holt, 1993; Miller et al., 1996; Miller, Behrens, Greene, & Newman, 1993; Miller, Greene, Montalvo, Ravindran, & Nichols, 1996; Pintrich, Marx, & Boyle, 1993; Pintrich & Schrauben, 1992; Self Brown & Mathew, 2003; Wentzel, 1997; Wolters, 2004).

In addition, the findings of the current study provide evidence that mastery structure has effective role in forming motivational behaviors. Students, who perceive classroom structure as mastery in condition that could copy questions' correct answer easily, prefer to try to prepare questions' answer by themselves and in this condition they can answer many questions correctly on the average. When they face a difficult question instead of losing it, consume more time to provide its answer. There are some similarities between the results found in this study with findings a recent study (Liem, Lau & Nie, 2008). It seems an interesting finding that such behaviors are more frequent in students who have very weak pervious achievement.

In terms of measuring method variables, the result of this study sheds new light to the literature in the field and extends the result of previous studies. Variables measured with direct assessment methods had the same results with self-report methods. In most previous studies, the measurement of choice, persistence and effort was done by self-reports (e.g. Ames & Archer, 1988; Elliot & McGregor, 1999; Miller et al, 1996; Wolters, 2004); however, in this research in spite of the fact that these variables were measured by direct assessment methods, the same results were achieved as those in previous studies.

Although it was expected in mastery structure, students would gradually select problems that their difficultly level is in average, shreds of evidence did not support such hypothesis. This finding was not consistent with the findings of the previous studies. Some of researchers (e.g. Ames & Archer, 1988; Elliot & Dweck, 1988; Wolters, 2004) showed that in the mastery structure, students selected challenging tasks instead of easier tasks. An explanation in case of such finding is that the time length of independent variables was not enough to make essential changes in students' interest. Another probable explanation is that teenage students in their age range did not have essential information to match their own abilities with diffi-

cultly level of the tasks. As a result, they made inappropriate decisions and choices in terms of difficulty level of tasks. Of course, more research needs to be done to further investigate this issue.

The findings of this study about the difference between mastery classroom structure and performance classroom structure are notable. The results indicate that the students in mastery structure had more persistence than students in performance structure. However, this difference was not meaningful about effort and choice. Nevertheless, on the base of theoretical framework it can be argued that in both structures students make effort but with different motivations. In mastery structure students try to develop and improve their own competence, but in performance structure students attempt to get higher scores in order to show their own superiority over the other students. A probable evidence and example for such statement can be the significant difference observed between two groups in persistence. In tasks that were not solved easily and students had difficulty in understanding, students in mastery structure had more persistence in understanding the problems and solving them but in performance structure students didn't show much persistence in understanding and solving problems. It appears that they presumed that consuming time to solve this problem is not a shortcut to get higher score and stand higher than others.

Another notable finding relates to the interaction between experimental groups and previous achievements. Result indicated that in mastery structure, persistence in students who had very weak previous achievement was more than students who had average previous achievement. This finding adds to the previous knowledge extension, because it has practical implications in instructing computer. Based on the findings, it is not recommended to make performance structure in a classroom with very weak students; mastery structure causes more persistence in them.

The results of this study showed that there was not any significant difference between performance and traditional structures in choice, effort, and persistence. A probable explanation is that approach – avoidance dimensions in performance structure were integrated. Maybe effect approach-performance structure was adjusted by avoidance – performance structure. The other probable explanation is that in current educational system, performance structure performs like tradition structure, that is, many teachers in the educational system manage their classes as if their students perceive class structure as performance structure. The other probable explanation relates to participants decline, as cited previously, four students were ruled out, three students from performance group and one student from control group. It seems likely that the decline of participants is as an explanation for this result.

The first limitation of this study is related to the essence of design. A quasi-experimental design was used. The second limitation is related to the performance structure. This structure should have been divided into two dimensions (approach and avoidance). The third limitation was the decline of participants. A few of them were absent; therefore the attained results should be interpreted with caution.

References

Ames, C. (1992). Classrooms: Goals, Structures and student motivation. *Journal of Educational Psychology*. *84*, 261-271.

Ames, C. (1990). Motivation: What teachers need to know? *Teachers College Record*, *91*, 409 - 421.

Ames, C. & Archer, J. (1988). Achievement goals in the classroom: Student's learning strategies and motivation processes**.** *Journal of Educational Psychology*, *80*, 260-267.

Anderman, E. M., & Maehr, M. L. (1994). Motivation and strategy use in science: Individual differences and class effects. *Journal of Research in Science Teaching, 31*, 811-831.

Anderman, E. M., Austin, C. C., & Johnson, D. M. (2002). The development of goal orientation. In A. Wigfield & J. S. Eccles (Eds.), *Development of achievement motivation* (pp. 197–220). New York: Academic Press.

Bouffard, T., Boisvert, J., Vezeau, C., & Larouche, C. (1995). The impact of goal orientation on self- regulation and performance among college students. *British Journal of Educational Psychology, 65*, 317-329.

Church, M. A., Elliot, A. J., & Gable, S. L. (2001). Perceptions of classroom environment, achievement goals, and achievement outcomes. *Journal of Educational Psychology*, *93*, 43-54.

Elliot, A. J., & Dweck, C. S. (1988). Goals: An approach to motivation and achievement. *Journal of Personality and Social Psychology*, *54*, 5-12.

Elliot, A. J., & McGregor, H. A. (1999). Test anxiety and the hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology*, 76, 628–644.

Greene, B. A., Miller, R. B., Crowson, H. M., Duke, B. L., & Akey, K. L. (2004). Predicting high school students' cognitive engagement and achievement: Contributions of classroom perceptions and motivation. *Contemporary Educational Psychology*, *29*, 462–482.

Guttman, L. M. (2006). How student and parent goal orientations and classroom goal structures influence the math achievement of African Americans during the high school transition. *Contemporary Educational Psychology*, *31*, 44-63.

Kaplan, A., & Midgley, C. (1997). The effect of achievement goals: Does level of perceived academic-competence make a difference? *Contemporary Educational Psychology, 22*, 415-435.

Kaplan, A., & Middleton, M. J. (2002). Should childhood be a journey or a race? Response to Harackiewicz et al. (2002). *Journal of Educational Psychology, 94*, 646-648.

Kaplan, A., & Maehr, M. L. (1999). Achievement goals and well-being. *Contemporary Educational Psychology, 24*, 330-358.

Liem, A. D., & Lau, S. Y. (2008). The role of self-efficacy, task value, and achievement goals in predicting learning strategies, task disengagement, peer relationship, and achievement outcome. *Contemporary Educational Psychology*, *33*, 486–512.

Linnenbrink, E. A. (2005). The Dilemma of performance- approach goals: The role of multiple goals to promote students' motivation and learning. *Journal of Educational Psychology, 97*, 197-213.

Mac Iver, D. J., Stipek, D. J., & Daniels, D. H. (1991). Explaining within-semester changes in student effort in junior high school and senior high school courses. *Journal of Educational Psychology*, *83*, 201-211.

Meece, J. L., & Holt, K. (1993). A pattern analysis of students' achievement goals. *Journal of*

Educational Psychology, 26, 399-427.

Midgley, C., Maehr, M. L., Hruda, L. Z., Anderman, E., Freeman, K. E., Gheen, M., et al. (2000). Manual for the patterns of adaptive learning survey (PALS). Ann Arbor, MI: University of Michigan

Midgley, C., Kaplan, A., Middleton, M., Maehr, M. L., Urdan, T., Andrman, L. H., Anderman. E., & Roeser, R. (1998). The development and validation of scales assessing students' achievement goal orientations. *Contemporary educational Psychology, 23, 113-131.*

Miki, K., & Yamauchi, H. (2005). Perceptions of classroom goal structures, personal achievement goal orientations, and learning strategies. *ShinrigakuKenkyu, 76,* 260-8.

Miller, R., Behrens, J., Greene, B., & Newman, D. (1993). Goals and perceived ability: Impact on student valuing self-regulation and persistence. *Contemporary Educational Psychology, 18*, 2–14.

Miller, R., Greene, B., Montalvo, G., Ravindran, B., & Nichols, J. (1996). Engagement in academic work: The role of learning goals, future consequences, pleasing others, and perceived ability. *Contemporary Educational Psychology*, *21*, 388–422.

Pintrich, P. R., & Schrauben, B. (1992). Students' motivational beliefs and their cognitive engagement in academic task. In D. Schunk & J. Meece (Eds.), *Students' perception in the classroom: Causes and Consequences* (pp. 149-183*)*.Hillsdale, NJ: Erlbaum.

Pintrich, P. R., Marx, R. W., & Boyle, R. (1993). Beyond "cold" conceptual change: The role of motivational beliefs and classroom contextual factors in the process of conceptual change. *Review of Educational Research, 63*, 167-199.

Ryan, R. M., Gheen, M. H., & Midgely, C. (1998). Why do some students avoid for help? An examination of the interplay among students' academic efficacy teachers' social-emotional role, and the classroom goal structure. *Journal of Educational Psychology, 90*, 528-535.

Self-Brown, S., & Mathews, S. (2003). Effects of classroom structure on student achievement goal orientation. *Journal of Educational Psychology, 97*,106 -111.

Sungur, S., & Gungoren, S. (2009). The role of classroom environment perceptions in self-regulated learning and science achievement. *Elementary Education Online*, *8*, 883 – 900.

Urdan, T. C. (2004). Predictors of academic self-handicapping and achievement: Examining achievement goals, classroom goal structures and culture. *Journal of Educational Psychology*. *96*, 251-264.

Urdan, T. C. (1997). Examining the relations among early adolescent students' goals and friends' orientation toward effort and achievement in school. *Contemporary Educational Psychology, 22, 165-191.*

Urdan, T. C., Midgely, C., & Anderman, E. M. (1998). The role of classroom goal structure in students' use of self-handicapping strategies. *American Educational Research Journal, 35,* 101-122.

Urdan, T., & Midgley, C. (2003). Change in the perceived classroom goal structure and pattern of adaptive learning during early adolescence. *Contemporary Educational Psychology, 28*, 524-551.

Wentzel, K. R. (1997). Student motivation in middle school: The role of perceived pedagogical caring. *Journal of Educational psychology*, *89*, 411-419.

Wolters, C. A. (2004). Advancing achievement goal theory: Using goal structures and goal orientations to predict student's motivation, cognition, and achievement. *Journal of Educational Psychology*, *96*, 236- 250.