The Relationship between School Environment Perceptions and Self-Regulated Learning Strategies with Academic Seriousness and Mediating Role of School Enthusiasm

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Abstract

The purpose of this study was to model the structural equations of the relationship between school environment perceptions and self-regulated learning strategies with academic seriousness and the mediating role of school enthusiasm. The study was a correlational research whose population included 2,200 third-grade male secondary school students in Bojnourd, who studied in Bojnourd during the academic year of 2016-2017. A sample of 327 people was selected by stratified random sampling method based on Morgan table. The subjects responded to Genry et al.'s *Students' Perceptions* of Classroom *Activities* (2002), de Groot's self-regulated learning strategies, Wong and Schole's school enthusiasm questionnaire (2011), and a researcher-made questionnaire on educational seriousness. Using Cronbach's alpha, the reliability of these questionnaires was 0.81, 0.89, 0.83 and 0.76, respectively; also the validity of the questionnaires was approved by the thesis supervisor. Data were analyzed by SPSS software running multiple regression; also structural analysis method was performed using LISREL software. The findings indicated that school environment perceptions and self-regulated learning strategies had a significant relationship with academic seriousness. At the same time, school enthusiasm mediated the relationship between school environment perceptions and self-regulated learning strategies. Since school enthusiasm plays a mediating role between school environment perceptions and self-regulated learning strategies, academic achievement can be enhanced by reinforcing it.

Key words: Motivational Beliefs, Academic Achievement, Metacognitive Learning Environment

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Introduction

The classroom and school environments, the school administration system, and the teacher's teaching practices have undeniable effects on academic performance and cognitive processes (Anderman & Midgley, 1997). One of the important implications of the school environment is student perceptions that play an important role in student motivation, cognition and performance.

Eccles and Wigfield (2002) found that high school students who perceived their teachers as more controlling, and teachers gave them less opportunity to make decisions, had lower levels of self-efficacy and motivation. Perceptions of school or classroom activities include a wide range of processes, attitudes and beliefs, including perceived control, autonomy and choice and pleasure (Gentry, Gable & Rizza, 2002).

The perceptions of school activities are influenced by various factors and have certain implications. For example, Gentry et al., 2002) found gender and basic differences in classroom perceptions and found that for high school students (as compared to elementary students), classroom activities were less enjoyable and appealing, and there was less opportunity to choose. Girls considered their classes to be more enjoyable and attractive than boys.

In another perspective, Ames (1992) used classroom structures rather than perceptions of classroom environment in a comprehensive review of research into the role of classroom structures in student motivation and goals. According to him, certain class structures affect the various motivational variables. This structure includes - and not limited to - the design of tasks and learning activities, evaluation experiences, and the use of rewards and the role of power and authority. According to Ryan and Grolnick (1986), the more teachers engage children in decision making, they will show a more positive and adaptive motivational model. Perceived control is a significant and important factor that influences students' involvement in learning and learning quality (Nolen and Haladyna, 1990).

Considering the importance of environmental perceptions and its positive and negative consequences, it is worthwhile to examine its factors and fields. Various studies have looked at the role of conditions that lead teachers to apply autonomy support or control to students. Deci, Koestner and Ryan (1999) have shown how contextual factors can create an autonomy supporting or controlling environment. For example, when a higher-ranking authority creates restrictions or when teachers are required to respond to their students' compliance with certain criteria, the probability increases with the teacher controlling his students.

Deci and Ryan (1982, quoted by Reeve, 1998) tested the hypothesis in the laboratory. They observed that the pressure on teachers to reach students in certain criteria would make them

more critical of students, use a more outspoken language, and be more controlling than teachers who did not. The style of arousal of people is mainly based on social context (Reeve, 1998). When the teachers felt pressured, they often responded to student with stress (such as exerting control over others) (Deci, Spiegel, Ryan, and Koestner and Kauffman, 1991, Flink et al., 1990).

The construct associated with environmental perception, which has mutual effects with it, is the achievement goal or goal orientation. Goal orientation is the end and concept that a person considers for his progress (Ryan and Pintrich, 1997). In fact, goal orientation is the reason people struggle to achieve it and play an important role in stimulating the person. While the early work emphasized only the separation of two mastery and performance orientations (Duke, 2000), Contemporary scholars believe that there are four main orientations: mastery approach goals, performance approach goals, mastery avoidance goals, and performance avoidance goals (Elliot, Fonseca and Moller, 2006). The implications of adopting achievement goals in different areas have been examined.

Ames (1992) reviewed the outcomes and implications of achievement goals. He initially compared the implications of both mastery and performance orientation. Students who accepted the mastery goals would select more challenging tasks (Ames, 1992); were more involved in the learning process (Nichols, Cheung, Lauer, Patashnick, 1989, quoted by Ames, 1992), and used more effective learning strategies (Nolen & Haladyna, 1990).

Other evidence also showed that students who took on performance goals were likely to avoid the challenge, implemented superficial learning strategies with minimal effort, and applied imperfect problem solving procedures (Graham & Nolen, 1990, Meece, Blumenfeld and Hoyle, 1988, Nolen, 1988, Pintrich, 1999).

Knowing the factors affecting learning, in order to improve the level of performance and academic achievement of students, is an essential objective in most educational research, and thereafter, various models of school learning are presented. The role of students 'and teachers' perceptions of classroom learning environment in its impact on cognitive and emotional outcomes has been studied in many studies related to the classroom learning environment and a strong relationship between the student's acquired outcomes and his perception of learning environment has been shown by many researchers (Danbrocke, Brickmans and Webels, 2004).

In the early studies regarding the classroom environments, sex, teaching subject, type of school, spatial location (city or village) and ethnic and race differences were studied. But today, more emphasis is placed on the manner of interaction and social and psychological climate governing the classroom. One of the newly introduced learning environments is the learning environment with

metacognitive orientation (Thomas, 2003). Conceptual basis of self-regulated learning environment is based on the theory of social constructivism of learning and teaching. According to this view, discussion, language and social interaction are important in expanding, enhancing and improving the self-regulation skills of learners (Thomas, 2004).The nature or structure of meta-cognitive learning environments is often recognized by the discussions that take place and is emerging as a key factor in the development of meta-cognitive learning among students. Discussion in the classroom should be about the free and active exchange of ideas and thoughts about learning between teachers and students and between students themselves; this way of exchanging ideas can improve students' self-regulated skills (Thomas Kane May 2005).Self-regulated demands indicate that students are asked to become aware of how they learn and how they can improve their learning. In debates among students and discussions with the teacher, students discuss their learning processes with each other and with their teacher. Students' comments suggest that they feel to have the right to ask their teacher about their teaching methods and curricula. In distributed control, students participate with their teacher to plan a learning process. Through encouraging and supporting teachers, students are encouraged to improve their learning processes and are emotionally protected in their ideas, e.g., the teacher appreciates student ideas (Thomas, 2003). Also, in relation to the interaction of cognitive and motivational factors, research suggests a linear relationship between motivational factors with self-regulation components (metacognitive strategies and effort management). This means that with increasing self-efficacy and internal value, the amount of use of cognitive strategies and metacognition increases (Pintrich and de Groot, 1990). Pintrich and de Groot (1990) argue that motivation involves self-efficacy, internal value, and emotional response; internal value involves students' beliefs about the importance and attractiveness of a task; emotional response involves students 'emotional reactions to a task, and self-efficacy expresses students' beliefs about their ability to do their tasks. Researchers have argued that the discussion method in the classroom is more effective than lecture classes in helping students acquire basic and fundamental concepts and making students be more involved in learning, and also consume more time for issues. Students in these classes have a better memory to learn (Boyle and Nicole, 2003).Talking with other students in the classroom plays a central role in increasing their understanding of concepts and ideas. They also reported that discussing with peers provides opportunities for thinking about more detail, discovering alternative perspectives and problem-solving approaches, and helping to create a framework for understanding or personal knowledge (Boyle and Nicole, 2003). The emotional

relationships within the school are also one of the important factors in the academic achievement of students. Spalding (1996) identified one of the first teachers' goals to establish a desirable and friendly relationship with students. Each teacher has a particular way to establish a relationship, due to the teacher's personality, student personality, and position. Ellis (2004) also states that in classrooms where teachers provide emotional support to students, students are encouraged to express their ideas and hear the opinions of others, their success in learning is greater. In general, scholars believe that by supporting students, it is possible to provide the environment for students' engagement with issues, active efforts to solve problems, and increase students' collaboration to solve problems (Malen & Talent-Ranels, 2006). Grene et al. (2004) have argued that teacher support and peer support as structural features of the classroom are effective in motivating students. Perceptions of high school students from a classroom atmosphere strongly predict competence, satisfaction, and orientation perceptions of the mastery goal.Metacognitive beliefs are related to test anxiety. In a study, Campbell (1999) showed the association of meta-cognitive beliefs with stress, anxiety, unrelated (to test) thinking, and physical symptoms along with test anxiety. Several studies have investigated the relationship between test anxiety and academic achievement and stated that there is a negative relationship between test anxiety and academic achievement (Yerkes and Dudson 2005; AbolGhasem, 2002).The main hypotheses of this research were as the following:

A) There is a relationship between classroom perceptions and academic seriousness.

B) There is a relationship between self-regulated learning strategies and academic seriousness.

C) There is a relationship between learning enthusiasm and academic seriousness.

D) There is a relationship between school environment perceptions and self-regulated learning strategies with academic seriousness and the mediating role of enthusiasm for learning.

Methodology

The research population in this correlational research included 2,200 third-grade male secondary school students in Bojnourd, who studied in Bojnourd during the academic year of 2016-2017. A sample of 327 people was selected by stratified random sampling method based on Morgan table.

Data collection instruments in the present research study included the following four questionnaires:

Questionnaire for Perceptions of Classroom Activities by Gentry et al. (2002): Responding to questions in this questionnaire are based on the 5-point and 7-point Likert scale. The above questionnaire was reviewed and evaluated after translation, so that its validity could be verified by the experts.

Self-Regulation Learning Strategies Questionnaire

(MSLQ): The self-regulation learning strategies questionnaire was developed by Pintrich and de Groot. The questionnaire is arranged in 47 phrases in two parts: motivational beliefs and self-regulation learning strategies (cognitive and metacognitive strategies). The subscales of self-regulation learning strategies include 22 phrases and measure three aspects of self-regulated education, namely, cognitive strategies, metacognitive strategies and resource management; the facet of cognitive strategies has 13 scales.

Researcher-made

Questionnaire: The given questionnaire was made by the researcher whose content validity was verified by the thesis supervisor professor and its reliability was obtained by Cronbach's alpha coefficient.

Wang & Scholes School Enthusiasm Questionnaire (2011): This test was developed by Wang and Scholes (2011), which includes three aspects of behavioral, emotional and cognitive enthusiasm for school. Behavioral enthusiasm is measured in two subscales of the school's accuracy and desirability on a 5-point Likert scale; appreciation of school education is measured on a 5-point Likert scale from "completely agree" to "completely disagree"; and cognitive enthusiasm is measured by two subscales of self-regulation learning and application of a cognitive strategy on a 5-point Likert scale from "almost never" to "almost always". In Mohammadi (2013), Rezaei (2013), and Karimi's (2013) research, the validity of this questionnaire was confirmed.

To analyze the data, descriptive statistics (frequency distribution, mean, standard deviation and measures of central tendency and dispersion) were used; to obtain the results of the research hypotheses, inferential test of regression was run using SPSS software, and to analyze the research hypotheses, the structural equation method was implemented using LISREL software.

Findings

To assess the reliability of questionnaires, Cronbach's alpha coefficient was used the results of which are presented in Table 1.

Table 1. Cronbach's Alpha Coefficient for Research Variables

Variable	Number of Questions	Cronbach's alpha coefficients
School environment perceptions	15	0.81
Self-regulated Strategies	24	0.89
Academic Seriousness	10	0.83
School Enthusiasm	10	0.76

The mean age of the sample group from the third grade high school boy was 32.7± 4. 58 SD. All subjects of the study belonged to the middle- class of society. Also, the level of education of the subjects' parents

was between the diploma and the master's degree (Table 2).

Table 2. Descriptive indexes of the studied variables

Variable	Mean	SD
School environment perceptions	37.58	6.17
Self-regulated Strategies	24.25	3.32
Academic Seriousness	23.11	3.43
School Enthusiasm	16.45	3.47

In order to investigate and predict the effect of school enthusiasm through school environment perceptions, self-regulated learning strategies, and academic seriousness, a linear regression test was used, the results of which are presented in Table 3.

Table 3. Regression model of school environment perceptions, self-regulated learning strategies, academic seriousness, and school enthusiasm

Level of significance	T value	Standard Coefficien	Nonstandard Coefficients		Model
		Beta	Standard Error	B	
0.000	4.075		8.874	36.165	(constant)
0.001	0.287	0.334	0.398	0.144	school environment perceptions
0.024	1.768	0.218	0.141	0.249	self-regulated learning
0.000	3.870	0.420	0.427	0.371	academic seriousness

The result of the linear regression test for the effect of school environment perceptions and self-regulated learning strategies with academic seriousness indicated that academic seriousness with a beta coefficient of 0.420 and a significance level of 0,000 could predict 42% of the school enthusiasm. At the next level is the school environmental perceptions with a beta coefficient of 0.334 and a significance level of 0.001 that could predict 33 percent of the school enthusiasm. Finally, in the third order is self-regulated learning strategies with a beta coefficient of 0.218 and a significant level 0.024 that can predict 21 percent of the school enthusiasm.

In order to model the structural equations of the relation between variables, the Structural Model was implemented using LISREL software, the results of which are presented in Figures 1 and 2.

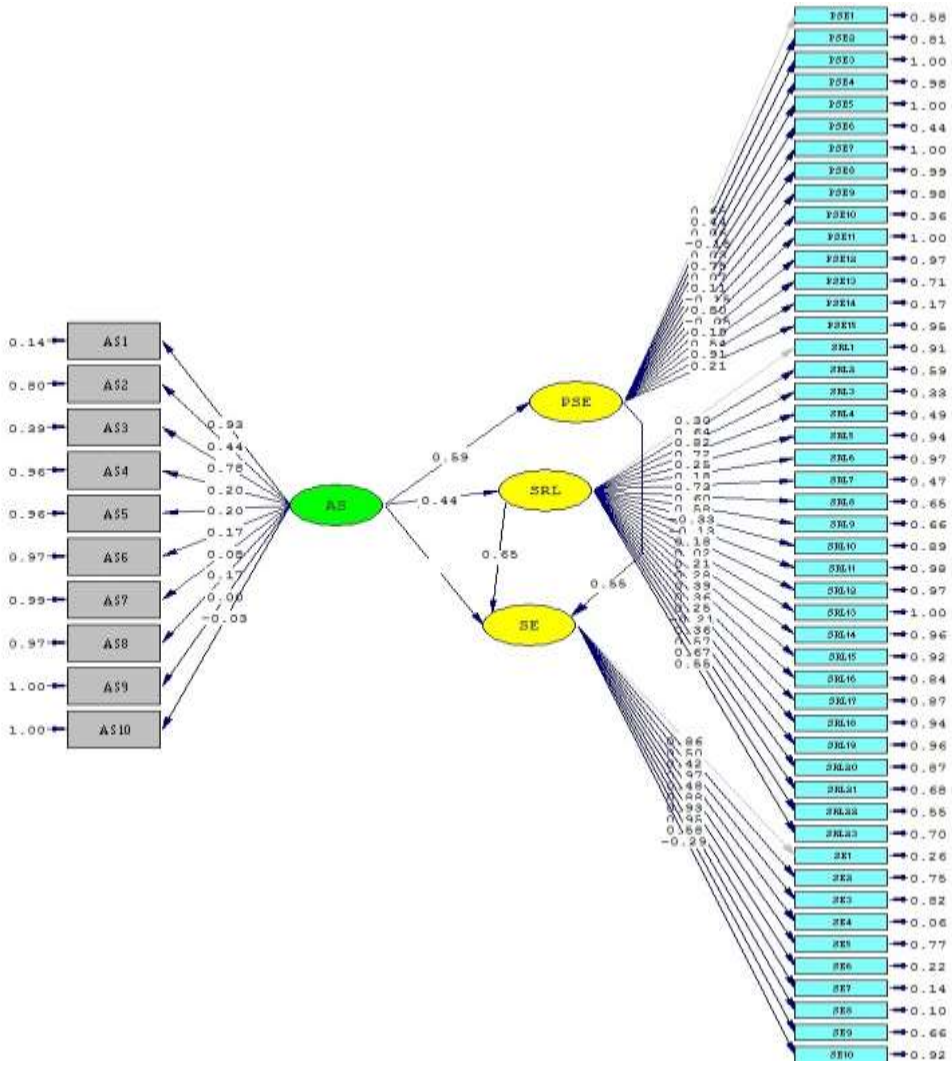

Figure 1. Structural model of research in standard mode

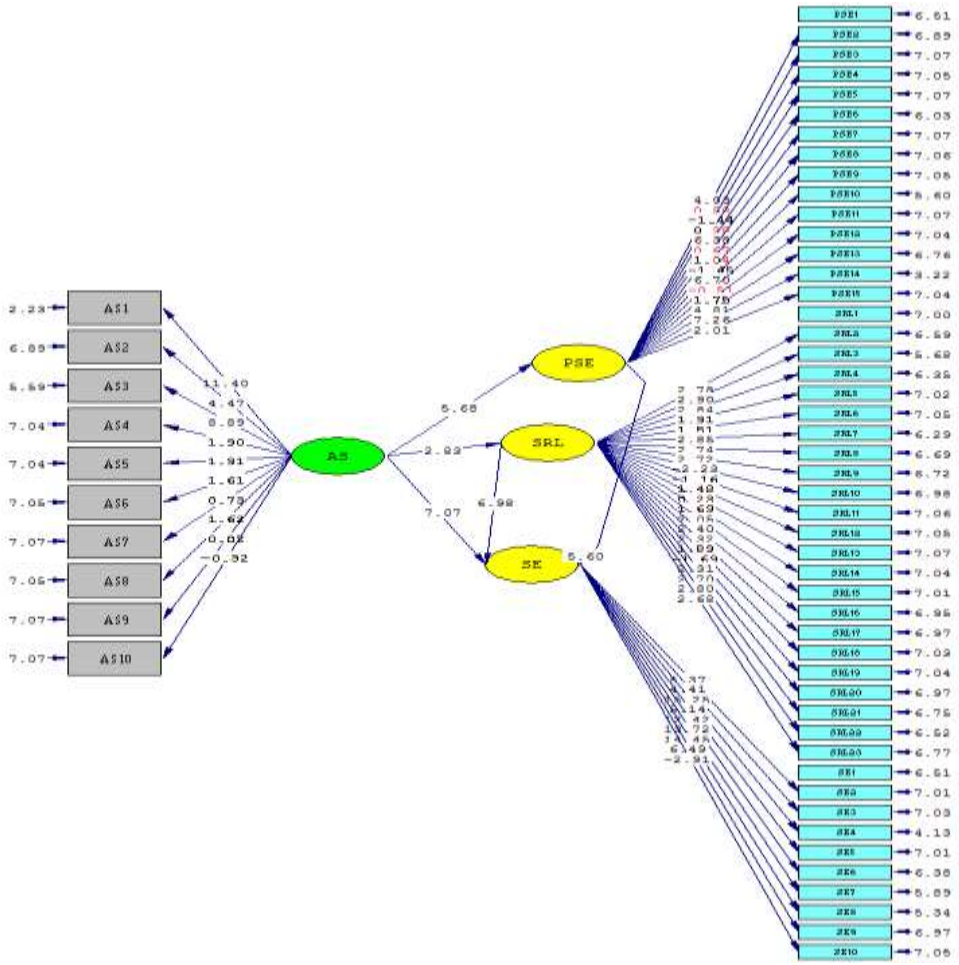

Figure 2. Structural model of research in significant mode

In Table 4, path coefficients and significance levels of the research variables are presented. As can be seen, the path coefficients for each of the six relationships are significant at the level of 0.05 (t greater than 1.96 and t smaller than -1.96).

Table 4. Results of direct relationship and coefficients of significance in the model assumptions

Path	Symbol	Path coefficient	Significance level	Test result
School environment perceptions……. Academic seriousness	PSE……. AS	0.59	5.68	Pass
Self-regulated learning……..Academic seriousness	SRL…… AS	0.44	2.83	Pass
School enthusiasm……Academic Seriousness	SE…….. AS	0.70	7.07	Pass

Also, as shown in Table 5, the direct and indirect relationships between school environment perceptions, self-regulated

learning strategies, educational seriousness and the mediating role of school enthusiasm are presented in the final model of research, which indicates the direct and indirect relationships of variables with each other.

Table 5. The relationship between total variables in the main research model

Type of relationship	Direct relationship	Indirect relationship	Total relationship
PSE with AS	……..	0.59×0.55=0.74	0.32
SRL with AS	……..	0.44×0.65=0.74	0.28

Conclusion

The results of this study provide empirical support for establishing theoretical connection between meta-cognitive learning environments and academic achievement, driven by motivational beliefs within the classroom, and in fact, this study examines some of the factors that can directly and indirectly affect the academic achievement of students.

As it was observed, meta-cognitive demands were a positive and significant predictor of academic achievement. This means that if the students learn more about meta-cognitive knowledge and use meta-cognitive strategies such as planning strategies, information management, debugging, and assessment of the learning process, their academic success and achievement will be higher. This finding is consistent with the findings of Urom Rood (2000), Skitica (2002), Ababaf (2008) and Rahmani (2001).

Also, meta-cognitive demands were a significant and positive predictor of task and expectation. The meta-cognitive demands point to the fact that the teacher wants students to learn how to learn, how to solve problems and try to create new solutions, know problems in learning the lesson and how to learn better. In fact, in this way, the teacher both helps to create and develop metacognitive awareness and knowledge, and enables students to use supervisory strategies and thus share their meta-cognitive strategies. This method makes it possible for an individual to perceive the value of performing a task or learning a subject, and hence increases his interest in that task or subject.

Class interactions such as student-teacher discussions and discussion among students also had the ability to predict academic achievement. In fact, class interaction refers to how students communicate with each other and with the teacher. In this context, students discuss with each other and with the teacher about how to learn, how to think about issues, how to solve problems, and how to use different ways to solve a problem. Also, if the student does not understand a subject, he/she raises it with the teacher. Different scholars emphasize the importance of discussing and exchanging the ideas in a

learning environment (Thomas & Kane Me, 2005; Kaboukso, 2009) and its impact on the improvement and development of meta-cognitive skills (Hogan, 1999, Oswan, 1988; Thomas and McRuby, 2001), and understanding and acquisition of basic concepts and memory enhancement (Boyle and Nicole, 2003

On the other hand, class interactions were a positive and significant predictor of motivational beliefs about the value of task and expectation. Also, class interactions were a negative and significant predictor of test anxiety. In justifying this finding, it can be said that the creation of active learning environments where students interact with each other is related to high student motivation compared to traditional classroom environments, and expands and develops their mental power. (McGuichi, 1990).

Such environments create a stronger motivational force for learning in learners (Nicole and Boyle, 2003). This finding is consistent with previous findings. Researchers have indicated that the quality of interaction between the professor and students affects academic motivation and self-efficacy (Coquely, 2000). Students who have more positive perceptions of teacher encounters have higher academic motivation scores than students who have negative perceptions of their master's behavior.

According to the findings of the research, students' perception of the classroom structure directly influences motivational beliefs, thus, it can explain the changes in academic achievement. In fact, when students have a positive relationship and interaction with their teachers, they will be more inclined to engage with academic and educational experiences and learning activities, thereby increasing their academic achievement. Besides, according to this finding, it can be said that when the students' perception of the class is such that their duties and tasks are varied and challenging, they choose the mastery goals and consider the classroom and the duties more profitable, and as a result, will have better academic achievement. This finding is consistent with the findings of Grene et al. (2004) and Blackburn (1998).

Also, when the student realizes the classroom as an environment that strengthens his/her autonomy, he/she considers the content of the lessons more profitable for his/her future, and chooses the goals of mastery that emphasize the deepening of learning, will have better academic achievement. In fact, when students are aware of their educational and learning deficiencies; can talk about these shortcomings and obstacles freely, and they manage to overcome them, they can take control of their own learning and increase their self-efficacy, and thereby improve their progress. self-awareness and self-regulated learning can explain social adjustment. To explain these findings, it should be acknowledged that since self-regulated learning strategies emphasize the fact that students

personally adjust their learning process which leads to students' self-learning and strengthens their sense of independence, self-esteem, success and ultimately adaptability, and students also acquire the skills and abilities to formulate and plan their own learning process, so they have the ability to evaluate learning and think about it (Aflakifard, 2020).

Generally, creating such environments in addition to the growth, improvement and development of meta-cognitive skills of students will also help their academic achievement and success. With regard to the novelty of this concept, research on such environments is a new area that can be considered as an issue to scientific-research efforts. What distinguishes this research is the indirect teaching of meta-cognition to students and the active and key role of teachers in the classroom. In fact, the meta-cognitive knowledge that students acquire by themselves will be more sustainable and generalizable. Also, the results of this study show that classroom features can be considered as one of the most important predictors of meta-cognitive patterns in the educational system.

The present study was accompanied with some barriers and limitations. Student scores cannot be the best scales for academic achievement. Therefore, if there are standardized tests, the use of the results will result in more scientific accuracy. Also, to study the effect of these environments on academic achievement more precisely, it is suggested that in future studies, specific course scores such as mathematics or physics should be used. In addition, given the fact that the present study is conducted on a sample of high school students, it is suggested that similar studies be carried out in other educational levels such as junior high school (guidance), pre-university and university courses so that the results obtained can be generalized more accurately.

Finally, it is suggested that experimental research be carried out and the effect of the meta-cognitive learning environment on learning and academic achievement should be investigated. It is suggested to use self-regulated learning strategies for students .In education and teaching, teachers should adjust learning strategies and curriculum elements according to individual differences and the context and environment in which students are located.

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