

## **The Relationship between the Perceived Classroom Environment and Thinking Methods among Secondary Stage Students in Amman Governorate Schools**

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**Abstract:** The purpose of this study was to investigate the relationship between perceived classroom environment and thinking style among secondary stage student in Amman directorate in addition to explore the differences in the perceived classroom environment and thinking style according to gender, grade, specialization and the average. To achieve the study goals, the researcher used My Class Room Inventory (MCI) and Abu Hasten inventory for thinking style. Whereby both the instrument had appropriate validity and reliability indices. Besides, available sample was selected consist from 192 male and female student were studying in the school of the second Amman directorate in the 2nd semester of 2009/2010 year. After the data had been collected, the statistical analysis was conducted and achieved the following result: The competition dimension had the higher means (3.88) whereas the friction dimension had the lowest mean. The hierarchal thinking style was in the first rank with means (4.20) whereas the conservative thinking style was in the last rank with means (3.59). There was significant correlation between classroom environment and the thinking style. There is significant difference in the level of the friction among males rather than female. Also there is significant difference in satisfaction, difficulty, friction and homogeneous, the 2nd secondary student had higher level comparing to the 1st secondary class. There are significant difference in all thinking style dimensions except judgmental, conservative and external, the second secondary class student were higher in all of them.

**Key words:** Clinker, microstructure, classroom, environment, competition, Jordan

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### **INTRODUCTION**

Students spend much time inside classrooms during all stages, so the quality of the classroom environment with which students interact is of a great importance in specifying the quality of the educational and practical outputs.

The classroom environment includes both the concrete classroom environment including the furniture, desks, chairs, boards, light, ventilation, among others and the psychological classroom environment that refers to the general atmosphere of the classroom during the occurrence of the educational situation. Such an environment is affected by the educational moments that the teacher creates and to which the students respond. Additionally, this environment is to which the levels of interaction with the teacher and the student interaction and the student-teacher interaction through intermediary educational experiences are related (Qatami, 2002).

The effect of the classroom environment extends to whatever the learner cognitively, psychologically and performance-wise learns through his or her interaction

with all the components of the educational process such as the learning motivation, the attitudes towards the learned material and the cognitive achievement and the methods of thinking (Lin and Crawley, 1987). This makes the mission of caring about the physical and psychological environments inside and outside the classroom as one of the essential missions that must be taken into consideration which will result in the releasing of the creative and innovative abilities.

The classroom environment also contributes in the formation of students' patterns of thinking. For example, one can find that the classroom environment might be of a group of features whose most well-known one is the interaction between students and the classroom environment that is the individual behaviors have a mutual relationship with the physical and social environments.

Also, students affect their environment and get affected by it (Ghanem, 2002). Besides, the concentration falls on the description of all the environmental circumstances, not focusing on some components which include the classroom environment, school environment, local environment and family environment from which

students come and the cultural environment within the limitation of the classroom circumstances and the classroom regulations and whatever privacy cultures that exist in it.

Despite of the implicit importance of the classroom environment and its effect on the students and the educational outputs including their methods of thinking, especially in the pre-university educational stages, one finds few studies that cared about studying the relationship between the classroom environment and the secondary stage students' methods of thinking. It has been found that the most darkness of these studies which the researcher revised are related to the methods of learning in the light of the academic and demographic variables or the classroom environment in the light of the same variables. Additionally, some revised studies cared about exploring the relationship between the classroom environment and the methods of thinking.

Tahon conducted a study on a sample of students (176 male and female students) of the Faculty of Education aiming at exploring their favorite methods of thinking and the extent of differentiation or lack of differentiation between the methods of thinking for Sternberg, the methods of the learning for Bejez and some charismatic features. The findings of the study showed that the subjects preferred the methods of thinking (Hierarchy, external, minority, legislative, liberal) to the methods of thinking (Internal, conservative international, chaotic and local), respectively.

Also, Ramdan (2001) conducted a study aiming at exploring the common methods of thinking of a sample of students in different educational stages. The sample was 417 male and female students of the 2nd secondary and the 2nd and 4th year students. The findings of the study showed that the common methods of thinking of the subjects were the executive, judgmental, local, progressive, hierarchical and minor. Also, male students were distinguished from the female students in the methods of thinking: local, royal internal, legislative and conservative

Additionally, Emran's study explored the relationship between of university students' ways of thinking and some charisma features. The sample of the study contained 349 male and female students from Al-Azhar and Ain Shams Universities. The findings showed that there were statistically indicative differences between the two university students in only the realistic method of thinking. Also, the findings showed some indicative relationships between some methods of thinking and some charisma features for males and females Abu Almo'ti (2005) compared the methods of thinking of both Egyptian universities and Saudi universities' students. The study

sample contained 238 male and female Egyptian students and 240 Saudi male students. He applied the measure of methods of thinking. The findings showed that there are differences between the methods of thinking that Egyptian students prefer and those preferable for the Saudi students and between what the literary majoring student's prefer and the scientific majoring students in both countries. Also, the results showed indicative differences between the males and females of the Egyptian sample regarding the methods of thinking while there were indicative differences among the Saudi sample regarding some ways of thinking.

Another study was done by Zhang and Sternberg (1998) which explored the relationship among the methods of thinking, the modes of thinking and the academic performance. The sample consisted of 212 male and female students upon whom Sternberg's list of the methods of thinking, Toran's list of modes of thinking and the degrees of the academic achievements using factor analysis, correlation coefficients and variance analysis. The findings showed a contrast between the factors of the list of methods of thinking of Sternberg and the factors of Toran's list of modes of thinking and that there is a negatively indicative relationship was between the academic achievement and methods of thinking (i.e., the international and the liberal) while the positively indicative relationship was with the conservative method of thinking.

Another study conducted a study aiming at exploring the preferable methods of learning of a sample of secondary stage students at Masqat Governorate and their relationship with gender, academic achievement and specialization. The sample consisted of 866 male and female students of the 3rd secondary grade who were chosen from the public schools in Masqat Governorate. The findings of the study showed that the best method of learning for the students of the third secondary grade in Masqat Governorate was the competitive method then the cooperative method was in the second place followed by and the individual method. Also, the findings showed statistically indicative differences at the level ( $\alpha = 0.05$ ) which is due to the difference of the specialization, i.e., the preference of the sample subjects-literary majors students of the individual method. Also there were statistically indicative differences at the level ( $\alpha = 0.05$ ) between the achievement levels (High intermediate and low) in the preference of the subjects of the competitive method.

Regarding the studies that tackled the classroom environment, Omran's studies aimed to evaluating of the classroom environment in Islamic Education course for the 1st secondary grade in Ram Allah and Biereh Governorates in six fields (Satisfaction, friction,

competition, the relationship with the teacher and harmony). To answer the questions of the study, a random sample was chosen; 373 male and female students distributed among the study variables. The findings of the study showed statistically indicative differences in the evaluation of the classroom environment in Islamic Education course due to gender field. The study showed that there are no statistically indicative differences for the field of competition. There are statistically indicative differences in the values of the classroom environment for the scientifically specializing students in the fields of competition, hardship and satisfaction.

AlShmari (2002) conducted a study to explore the relationship between Saudi university students' academic achievement, their specializations and their way of dealing with the social, classroom and the university psychological environments. The study aimed at exploring the method of learning and the level of the psychological and social classroom environment in addition to the relationships between the students at the Saudi universities. The researcher used the descriptive approach in the form of a survey to conduct his study. He tested a sample consisting of 360 students from three Saudi universities, 120 students from each. He also applied the method of learning and thinking measure and the measure of the psychological and social classroom environment on the three Saudi universities students. Nothing was found regarding any statistically indicative differences at that level for reinforcing the variables of university, major and the level of the academic achievement.

Kabha (2002)'s study aimed to explore the status of classroom sciences in Nablus and Jenin Governorates in addition to exploring the reality and the case of classroom sciences in the light of some variable such as gender, specialization, the location of school, the type of school and classroom. The sample of the study consisted of 555 male and female students distributed among these variables. The researcher found that there are statistically indicative differences in the evaluation of the environment of the classroom sciences due to the gender variable. These differences appeared within the two dimensions of satisfaction and friction. Differences were in favor of males.

There were statistically indicative differences in the evaluation of the classroom sciences due to the classroom variable. These differences appeared with the satisfaction dimension and were in favor of the 1st secondary grade. While there were no differences on the other dimensions: the degree of competition, the degree of friction, the degree of hardship, the degree of harmony, the relationship with the teacher.

There were no statistically indicative differences at the level ( $\alpha = 0.05$ ) in the evaluation of the environment of the classroom sciences within the dimensions of the

degree of competition, the degree of friction, the degree of hardship, the degree of harmony, the relationship with the teacher which is due to the type of school variable.

Studies that tackled the relationship between the methods of thinking and the classroom environment; Kariuki (1995) conducted a study aiming at exploring the relationship between the educational style followed in the college and the perception about the classroom environment in teachers colleges. The sample of the study consisted of 184 students and 10 teachers at one of the teachers colleges. The findings showed that the preferable educational style for students and teachers is the harmony where student's preferred dissimilarity style while teachers preferred imitation style. In their educational behavior, teachers did not show the fusion of the logical thinking, the organized thinking and the mental thinking while students preferred learning by showing motives that show the situation. The findings showed that there is a relationship between the different components of the classroom environment except for the two fields of directing to the duties and the effect of students and that both teachers and students recognize the teachers' support as an essential component in the classroom environment.

Abu Nmreh (2001) studied the relationship between the perceived classroom environment and the preferred learning methods for the talented students at the intermediate stage. The sample of the study consisted of 80 talented students in the 6th, 7th and 8th grades upon whom two measures were applied: the classroom environment and measure of the preferred methods of learning. The findings of the study showed that there is an indicative relationship among all the courses and the method of thinking. Additionally, the features of the environment that encourage the unity and comfort were tied indicatively to the productive and creative thinking. Through tackling the previous studies, one notices that there are few studies that cared about studying the relationship between the classroom environment and the methods of thinking specifically in the secondary stage of education. That is it is noticeable that most of the studies tackled methods of thinking were about university students which results in the importance of the present study.

**Study problem:** The present study problem lies in the study of the relationship between the perceived classroom environment and the methods of thinking for the students of the 2nd secondary stage in the capital Amman. More specifically, the present study aims at answering the following questions:

- What are the forms of classroom environment perceived by the students of the secondary stage in the schools of the capital Amman?

- What are the common methods of thinking for the students of the secondary stage in the schools of the capital Amman?
- Is there a relationship between the classroom environment and the secondary stage student's methods of thinking in the schools of the capital Amman?
- Is there a statistically indicative difference in the environment of classroom due to the variables of gender, grade and specialization?
- Is there a statistically indicative difference in the methods of thinking due to the variables of gender, grade and specialization?

**Study importance:** The importance of the present study results from the fact that it tries to specify the relationship between the components of the classroom environment and the secondary stage student's methods of thinking taking into consideration that the students are one of the most important sources in evaluation of the educational environment. Expectedly, the present study will come up with a group of recommendations from which those developers and policies makers benefit from and to provide a rich classroom environment. Besides, the presents study attains its importance from the fact that it treats a research topic in which very few studies dealt with especially in the Arab world which opens new horizons for the prospective research papers and for enriching literature of this field study terms are:

**Classroom environment:** It is procedurally expressed by the score which the student gets in each dimension of the ones of the measure of the classroom environment which are:

**Consent:** The extent of the students enjoyment in the study and their love for their class and the lesson they receive.

**Friction:** The students feeling of enmity and being upset from their mates.

**Competition:** The extent of student's willingness to excel among their mates and that his work be much better than others.

**Difficulty:** The extent of the difficulty the students face during their conduction of their homework.

**Homogeneity:** The student's feeling of his love for his mates and that there are friends.

**Methods of thinking:** Grigorenko and Sternberg defined thinking that it is a mental and cognitive process that directly affects the way of preparing and processing the data and the cognitive mental images inside the human brain. And thinking is procedurally defined as the score which each individual gets separately from the list of the methods of thinking study limitation are:

- This study is limited to the students of the secondary stage in the Amman 2nd directorate
- The present study is limited to the 2nd term of 2009-2010 academic year
- The findings of this study are specified by tools that are used and the truth of these tools and their stability

## MATERIALS AND METHODS

**Study community:** The study community consists of secondary stage students (1st and 2nd secondary) in the scientific and literary streams in the Capital Amman Education Second Directorate (CAESD) who study in the second term in academic year 2009/2010. According to the Statistics of Ministry of Education, Amman Second Directorate in the academic year 2009/2010, the total number of this directorate students is 4165 male and female students.

**The study sample:** A sample was chosen consisting of 250 male and female students who study at the schools of Amman Second Directorate, i.e., 6% of the total number of the citizens of the community.

**Study tools:** In order to achieve the objectives of the study, two tools were used: the first one for measuring the classroom environment and the second for measuring the methods of thinking for the students of the secondary stage and the following is a description for these two tools.

**Classroom environment measure:** My classroom Inventory (MCI) measurement was used which was translated by Alkilani and Al'mleh and it fits elementary grades as it does not require that high linguistic ability to be understood. It contains 265 articles. Each article has a gradual five evaluating scale (Very approver, approver, neutral, opponent, very opponent) taking the values (1-5). This study are distributed on five fields (Satisfaction, friction, competition the degree of difficulty and homogeneity). The measure truth and stability.

Alkilani and Al'mleh stated that it is possible to consider this measure adopted as true depending on the

truth of the original English one and depending on three referee's opinions to whom the Arabic translation was referred and who approved its truth. Also, the findings which the tool showed regarding the classroom environment met the expectations of the teachers of the students upon whom the study was conducted by the title: *The Evaluation and Development of Classroom Environment* by Alkilani and Al'mleh which is considered a further indication of its validity and truth. Regarding the stability of the measure, the original English version's coefficients of stability which was applied on the third grade in Australian schools between (58.0-81.0) for the secondary measures.

**Methods of thinking measure:** The researcher used the measurement of Qasem who developed the list of thinking methods of Sternberg and Wagner and it measures 13 methods of thinking and the list 65 words, 5 words per each method of thinking which are of self-decision type that asks individuals about their methods of thinking they use in doing things inside schools or university or home or study in the light of the five measure of response (Non-matching, very non-matching, I do not know, highly matching, completely matching) with the scores (1-5) and there is no total grade for the list but it is dealt with each branch measure or each thinking method.

**The truth and stability of the measure:** Hashem elicited the indications of the truth of confirming coefficient which the results indicated in the values of typicality. While the measure has its indications of truth due to the matching of its indications with the indications of the original measure. Regarding the stability of the measure, the stability coefficients' values ranged from (0.60-0.77) which indicates that the measure has suitable stability coefficients study variables are:

- Classroom environment
- Thinking methods
- Gender (male, female)
- Grade (1st and 2nd secondary)
- Specialization (scientific, literary, IT)
- Level of achievement

**Statistical methods:** In order to answer the questions of the study, the following statistical methods were used:

- Averages and standard deviations
- ANOVA and Shave's test for posteriori comparisons
- t-tests for separate samples

## RESULTS AND DISCUSSION

The present study aimed at exploring the relationship between the classroom environment and the secondary stage student's methods of thinking in Amman Governorate. After collecting data and statistically analyzing them, the researcher came up with the following results:

Regarding the first question which is related to the forms of the perceived classroom environment for the students of the secondary stage in Amman governorate schools, the averages and standard deviations were calculated and the results showed that the averages of the classroom environment is (3.09-3.88) and the highest average was for the field of competition (3.88) and the lowest one was for the field of friction (3.09). This shows that these averages were within the middle level and this finding matches many of the previous studies ones of Kbhha (2002). The researcher interprets this result by that the classroom environment in the governmental Jordanian schools still needs more care and providing qualified staff which will reinforce the aspects of the classroom environment.

As for the second question about the common methods of thinking of the students of the secondary stage in the schools of Amman Governorate, the averages and standard deviations of the measure of the classroom environment were calculated and the results showed that the averages of the classroom environment ranged from (4.20-3.59) and the highest average was for hierarchical method (4.20) and the lowest one was for the conservative method (3.59).

This result accords with what Mansi (2001) came up with that is he found that the legislative method is considered among the common methods of student's thinking who are described as they enjoy innovation, renewing, determination, planning for solving their problems and prefer problems that are not previously prepared. Also, they love more to build the system and the content for solving the problem, research according their own rules and they prefer problems and activities that are based on forming planning such as writing research papers, designing projects innovating new educational and commercial systems. These students also prefer some professions which enable them to apply their legislative method: a creative writer, scientist, artist, architect, policy maker, an investing bank manager.

Regarding the third question about the existence of a relationship between the classroom environment and the methods of thinking for the students of the secondary stage in the schools of Amman Governorate, Berson's

coefficient of Al2rtibat for the total degree of the classroom environment and methods of thinking for the students of the secondary stage was calculated. It was found that correlation coefficient was of statistical indication at the level (0.05) or less as correlation coefficient between the methods of thinking (Legislative, executive, judgmental international, local, liberal conservative, hierarchical, royal, minor, chaotical, external) (0.25, 0.37, 0.37, 0.34, 0.45, 0.23, 0.21, 0.36, 0.28, 0.18, 0.35, 0.35, 0.28) and all of these coefficients are indicative at the level 0.05 or less. Researchers also notice that the highest correlation coefficient which was for factor thinking which indicates the reinforcement of the classroom environment that accompanied the international directions r of teaching.

Obviously, there are no previous studies which tackled this result and the researcher interprets this by providing an active classroom environment which has many aspects that stimulate thinking and is embodied by the international mode. One finds that those of the international mode are distinguished by realizing the general picture or the problem and they do not care about details and ignore them. Additionally, they prefer working in the big issues, they prefer imagination and abstract thinking, they deal with generalities, they prefer to deal with vague situations, they do not prefer for routinized life or research and they prefer changing and renewing.

Regarding the 4th question; is there a statistically indicative difference in the classroom environment due to the variables of gender, grade and specialization? To answer this question, analysis of union variance and t-test were used one two separate samples and the tables showed that. Revising the averages, it was found that the level of friction for males was higher than for females and this result matches what Kbha (2002) came with that is males prefer friction more than females.

Also, it was shown that the difference reached the level of the statistical indication in the fields of satisfaction, difficulty and homogeneity between the students of the 1st and the 2nd secondary grades where t was -5.44, -2.83, -3.30 with an indication level  $<0.05$ . And by revising the averages, it was found that the increase was higher for the students of 2nd secondary in comparison with the 1st secondary. The researcher interprets this by that moving from a grade to another changes the student's perception of the factors the classroom environment specially that the students of the 2nd secondary are described as of maturity and bearing responsibility which contributes in their realization of the classroom environment in a better way.

Regarding the difference resulting from the variable of the grades in the perception of the classroom environment which did not reach the level of the statistical indication as all statistical values of F did not reach the level of the statistical indication for the variable of the specialization branch. This result matches what AlShmari (2002) which indicates that the perception of the students of the classroom environment does not have any relationship with their specialization.

Regarding the 5th question; is there a statistically indicative difference in the methods of thinking due to the variables of gender, grade and specialization? To answer this question, analysis of union variance was used and t-test for independent samples. It was shown that the differences between the methods of thinking did not reach the level of the statistical indication resulting from the gender variable. That is all values of statistical t did not reach the level of the statistical indication so there are no differences relating to the gender variable. This result is different from what Ramdan (2001) came with and the researcher interprets this result by the nature of the experiment that students of the secondary stage they passed through and which need enriching so as the students can get distinguished by their methods of thinking. Additionally, students study the same curricula and follow the same educational system.

There are statistically indicative differences in all fields except for the methods of thinking (Judgmental, conservative and external) which did not reach the level of indication. Regarding the fields in the statistical indication reach the level, one finds that students of the second secondary stage have an increase of using these methods. In spite of the lack of having direct studies, the researcher interpret those by that moving and developing from a grade to another specially reaching the secondary stage which reinforces maturation and thinking accompanied with responsibility.

So the difference in the methods of thinking did not reach the level of the statistical indication due to the variable of specialization. That is all values of statistical F did not reach the statistical level so there are no differences in the methods of thinking due to the variable of specialization. This finding is different from what Wittrock (1986) came with and that showed that the difference of the methods of thinking due to specialization. The researcher interprets this finding by that the methods of learning to which students are exposed might be the same based on memorization and reinforcement of the authority of the book, teacher and the being far from trying, researching and discovering which interprets that students think similarly though they are of different specializations.

### CONCLUSION

- The necessity of caring about the factors of the classroom environment as it is among the effective factors on the students' method of thinking
- Conducting more studies regarding the effective factors on the classroom environment and the student's perception about them in different courses and connecting them with studies that tackle the variables of self-efficiency perceived by students
- The importance of training teachers on the way of providing and preparing the classroom environment that stimulates students in its psychological and social aspects to affect their method of thinking
- The importance of fusing the different thinking methods of thinking in different classroom situation

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