

The Acquiring Level of the Mental Persisting Habit among Basic Fourth Class Students in Science Subject (An Applied Study at Basic Education Schools at the Syrian City of Tartous)

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Abstract: This study aimed at measuring the level of acquiring mental persisting habit among basic fourth class students in science subject, and investigating the impact of sex and environment on this acquisition. Furthermore, exploring the relationship between this acquisition and the critical thinking. To achieve research objectives, a descriptive approach was used. Two questionnaires were developed, one to measure persisting, and the another to measure critical thinking. Having checked and ensured the reliability and validity of these two questionnaires, both questionnaires were distributed to a random selected sample of (135) students from basic fourth class at schools in the Syrian city of Tartous. The obtained data then analyzed using descriptive statistics (Mean, Median, and SD) and inferential statistics (Correlation Coefficient and T-test) from SPSS package. Study results showed that study sample possesses a high level of mental persisting with female and male students have equal levels. There is a significant difference between rural students and urban students in their persisting levels with rural students being the highest. The results also showed a statistically significant strong positive correlation between persisting and critical thinking. A package of educational and teaching programmes are suggested in this study to boost persisting among basic education students in general with special interest to fourth year class students.

Keywords: Persisting, Critical Thinking, Acquisition Level, Basic Education Schools.

1. INTRODUCTION

A contemplative look to the educational systems in recent years provides a clear picture about significant changes took place in education sector, and criticisms of the traditional teaching methods that used in various stages of education (Al-Harthy, 2002, 7). One of these significant changes is the growing interest in developing " Habits of Mind" among students, particularly persisting since it is considered a characteristic of scientifically educated individuals. Modern education methods call for Habits of Mind, including persisting, to be one of the main goals in all levels of education, starting from basic education. Costa (2001, 12) argued that the negligence in using this mental habit causes a lot of deficiencies in the educational process results. Persisting means many things among them the commitment of a task that is mandated to the student until its completion, no easy surrender to the difficulties, the ability to analyze problems, and finally, the possession of stored ammunition of alternative strategies to solve problems (Nowfal and Rimawi, 2008, 85).

Many studies such as Hossam Al-Deen and Ramadan (2006) have showed that students rely largely on learning by heart and recalling in learning. Therefore, educational curriculum designers stressed the inclusion of persisting habit in curriculum. Amongst those curriculums that stressed the necessity of boosting persisting habit is the British National Curriculum.

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Science curriculums in Syria witnesses many reformed movements in light of the interaction between Science, Technology and Society (STS) (Zaytoon, 2009, 19). These reforms focus on thinking, work of the mind while learning, and problem solving. Especially science curriculum at the basic education stage, since it represents the ground of educational hierarchy in all countries over the world and the real start of a comprehensive development process of student's perceptions and intellectual skills. In addition, it is the stage during which personality traits are established. Due to the importance of the fourth class in the Syrian Arab Republic, as a class in which the student recognizes basic concepts for the next phase and it represents the beginning of abstract thinking, the current research is interested in studying the level of the acquisition of mental persisting habit among the basic fourth class students in Science subject.

Study problem:

The study focuses on the following two assumptions:

- ❖ The existence of persisting among basic fourth class students in science subject.
- ❖ The existence of correlation between persisting and critical thinking among the basic fourth class students in science subject.

This is why the study is entitled as: The Acquiring Level of the Mental Persisting Habit among Basic Fourth Class Students in Science Subject (An Applied Study at Basic Education Schools at the Syrian City of Tartous)

Study question:

The main study question is:

- What is the level of the acquisition of mental persisting habit amongst basic fourth class students in Science subject?

Study objectives:

This study aims at achieving the following objectives:

- To explore the level of the acquisition of persisting amongst the basic fourth class students in science subject.
- To identify the role of the gender in the level of the acquisition of persisting amongst the basic fourth class students in science subject.
- To discover the role of the environment in the level of the acquisition of persisting amongst the basic fourth class students in science subject.
- To investigate the relationship between persisting and the critical thinking amongst the basic fourth class students in science subject.

The significance of the study:

This study is considered of great importance for the following reasons:

- It tackles a key issue in the educational system (persisting habit). This will help in the development process of new techniques that help the improvement of the learning process for students.
- It examines the relationship between persisting and the critical thinking. Consequently, showing the impact of the critical thinking on the persisting habit acquisition, such link helps in developing the intellectual and learning skills for students.

Hypotheses of the study:

Ho1- There is no statistically significant differences between the mean scores of students on persisting measure attributed to gender.

Ho2- There is no statistically significant differences between the mean scores of students on persisting measure attributed to environment.

Ho3- There is no statistically significant correlation between the mean scores of students on persisting measure and the mean scores of students on critical thinking measure.

2. REVIEW OF RELATED LITERATURE

Acquiring mental persisting habit by students is considered of great importance since it is the habit of open mind to learn and acquire knowledge (Sabri , 2010). Costa (2001) sees it as the key to success which is linked to the activity and action; where it opens practical opportunities that enable the student to practice this mental habit actively while learning. This will prompt the achievement motive for the student. This is confirmed by many studies as Al-Rabgee (2005), Al-Kodat (2014). This in turn leads to a positive impact on student's performance as shown in many studies (i.e. Khoon (2005), Iraqi (2007), Culler (2007) Al-Talhi (2014)). Moreover, it gives the student the opportunity to see the path of his own mind, discovering how his/her mind works during solving problems, and modifying other mental habits that deem unproductive or useless for his life . This is confirmed by Burgess study (2012). persisting is viewed as a useful habit for students since it gets him/her to used to determination, perseverance and taking responsibility until the job entrusted to him/her is completed as indicated by the study of Weirsema & Licklider (2009). According to Al-Otaibi (2013), this leads to the growth of academic self-concept. Persisting integrates with other habits of mind to train the student to plan carefully in the light of the requirements of the task he/she is doing, evaluating his performance in the light of the criteria laid down for himself/herself, and gaining the ability to combine the capabilities of critically, creatively, mathematically and scientifically thinking according to the study of Rayani (2012) and the study of Squire & Jan (2007). in addition to the capabilities of self-regulation to reach to the best performance, and encourage the student to possess the will to use mental capabilities and skills in all educational and life activities, until it becomes a habit of thinking that the student does not get tired in when exercising. This is confirmed by Amor study (2005) and Al-Karaki study (2007). Said (2006,430 - 431) argues that this adds a funny atmosphere to learn as each student will think in his/her own way no matter how strange or unusual for others.

3. METHODOLOGY

Population:

The population for this study is all students of the basic fourth class at elementary stage studying at the public schools at Tartous city in Syria for the educational year 2015-2016.

Sample:

A sample is taken randomly from the public basic education schools in Tartous city (Syria) run by the Directorate of Education in Syria. A sample size of 135 students of the basic fourth class is selected. Of them,68 are taken from rural region schools and the remaining (67) from urban region schools. The geographical and gender division of the sample is shown in table 1.

Table: 1

Gender	Number	Environment (place of study)	Number
Male	68	Urban	67
Female	67	Rural	68
Total	135	Total	135

Tools (the questionnaires):

This study used two tools; the first tool was persisting scale developed by the researcher in 2015 and used to collect data from the sample. It contained 30 items and each item contained three responses: always, sometimes, never. These responses are coded and the corresponding scores are as follows: affirmative items, always is coded 3, some-times is coded 2, never is coded 1. And for negative (opposite) items, always is coded 1, sometimes is coded 2, never is coded 3. The second tool was critical thinking scale developed also by the researcher based on Watson & Glasser's category for critical thinking. This tool was used to measure the critical thinking skills among the sample members. This scale was designed to measure five skills of critical thinking which are: recognition of assumptions, interpretation, inference, deduction, and evaluation of arguments. This tool contained 80 items (16 items for each skill). 1 mark allotted to correct response, and 0 mark allotted to incorrect response.

Variables:

The two dependent variables are Persisting and Critical Thinking.

The independent variables are: gender (Male / Female) and environment: place of education (Rural / Urban).

Delimitation of the study:

The study is delimited to:

- The basic fourth class students at elementary stage are the target group.
- Public schools at Tartous city in Syria are taken for this study.
- A sample of 135 basic fourth class students are taken.

Data analysis and interpretation:

➤ Results related to answering the main question of the present study: What is the level of the acquisition of mental persisting habit amongst basic fourth class students in Science subject?

To answer the main question of the study, responses of the basic fourth class students on the persisting scale was analyzed. The arithmetic mean and standard deviation of the students' responses on the scale as a whole are calculated. The results are shown in table 2.

Table: 2

Mental persisting Habit	M	Std	Acquisition level
	2.59	0.26	high

From table 2 we can see that the calculated value of arithmetic mean of the grades ($M=2.59$) with a standard deviation ($Std=0.26$). Hence the level of the acquisition of mental persisting habit among the fourth class students in science material is high.

➤ Results related to answering the hypotheses of the present study are presented below:

- Ho1- There is no statistically significant differences between the mean scores of students on persisting measure attributed to gender.

Table: 3

Gender	N	Mean	df	t-value	p-value	Significance status
Male	68	78.09	133	0.401	0.69	S (0.05 Levels)
Female	67	77.55				

The results of T-test presented in table 3 shows that the calculated value of $t=0.401$ and $p=0.69$ ($p>0.05$). Hence the null hypothesis (H_01) is accepted. It is concluded that there is no significant difference between male and female students of the basic fourth class in their persisting in science subject.

- Ho2- There is no statistically significant differences between the mean scores of students on persisting measure attributed to environment.

Table: 4

Environment (place of education)	N	Mean	df	t-value	p-value	Significance status
Urban	67	77.99	133	-0.242	0.003	S (0.05 Levels)
Rural	68	80.66				

As we can see from table 4, the calculated value of $t=-0.242$ and $p=0.003$ ($p<0.05$). Hence the null hypothesis (H_02) is rejected. It is concluded that there is a significant difference between urban and rural basic fourth class students in their persisting in science subject in favor of rural students.

- Ho3-There is no statistically significant correlation between the mean scores of students on persisting measure and the mean scores of students on critical thinking measure.

Table: 5

Variable	R-value	p-value	Nature of correlation
Persisting	0.83	0.000	Positive (0.01 Levels)
Critical thinking			

As can be seen from table 5, the R-value is significant at 0.01 level, and $p=0.000$ ($p<0.01$). Hence the null hypothesis (H03) is rejected. It is concluded that there is a significant correlation between the persisting and the critical thinking. The relationship is strong and positive in nature.

4. DISCUSSION OF THE RESULTS

The current study showed a high level of mental persisting habit among the basic fourth class students, with mean value of (2.59) and a standard deviation value of (0.26). This is due to the nature of the existing curriculum of science subject, which includes activities and educational tasks beyond students' thinking abilities. Non-class activities call for search in school library and the Internet to find the answers and appropriate solutions. Furthermore, the preparation of some experiences, growing and cultivating of certain plants, homework assigned by teachers to students in science subject, preparation for tests. All these tasks require insistence and perseverance to be accomplished, this is why students showed a high level of persisting in this study since such tasks call for students to be persistent to a large degree. This result is similar to the results of Burgess study (2012) and Al-Kodat study (2014), where they found that the level of acquisition of habits of mind, especially persisting is high.

This study also indicated that male and female students at basic fourth class have approximately equal levels of persisting in science subject. The results showed that Male students have bigger mean value (78.09) than their counterparts (77.55), but this slight difference is not statistically significant. This might be due to many factors such as sampling process, the nature of the curriculum, teaching methods and school activities which applied to male and female students equally. In addition, teachers who teach science subject usually follow the same training courses and adhered the school plan, which is already set by the management of each school during the scholastic year. Teachers transfer skills and train students equally. This result is similar to the result of Nowfel study (2006) and Al-Lala study (2015), where they found that there is no significant difference in persisting due to gender (male, female).

The study showed that there is a significant difference between urban and rural basic fourth class students in their persisting. Rural students have better persisting mean value (80.66) than urban students' persisting mean value (77.99). This result is attributed to the methods used by the school teachers in the rural areas. It is found that teachers have a high efficiency and use modern methods (i.e. collaborative learning, strategies of developed thinking and habits of mind), either directly or in combination with the curriculum. Furthermore, teachers in the rural areas are new graduates from the department of child education (classroom teacher division), while teachers in the urban areas are graduated from Institute of Teachers Preparation, and most of them are old with little knowledge about the new techniques and methods in teaching modern curriculums. The Directorate of Education appoints old teachers who graduated from the Institute of Teachers Preparation in the urban areas, and appoints teachers with new expertise in the rural areas.

The study showed a significant correlation between persisting and critical thinking among the basic fourth class students in science subject. This correlation is very high and positive in nature. This strong and positive correlation might be ascribed to students themselves, while they exercise mental persisting habit in performing educational tasks entrusted to them, they try out many strategies and mental skills to solve the problem they face. Once they found that a specific strategy is ineffective, the students convert to another one. These strategies and mental skills are: defining the problem, gathering information, Analysis of the facts, take the appropriate decision, conclusion, evaluation of arguments. All of these are some of the critical thinking skills. This was confirmed by Delphi experts (Delphi) referred to in (Nowfal & Rimawi 2008, 79) who argued that persisting is one of the habits of mind that is necessary to practice critical thinking. The result of this study contradicts the result of Khoun study (2005) where it found that persisting correlates with

achievement, and also contradicts the result of Alkodat (2014) where it claimed that persisting correlates with achievement motive. But the present result is similar to the result of Al-Karki study(2007) where it found a correlation between persisting and critical thinking.

5. CONCLUSION AND RECOMMENDATIONS

The present study showed that the basic fourth class students have a high level of persisting in science subject, and the acquisition of persisting is equal for both male and female students. In the same time, the acquisition of persisting is not affected by the environment (urban, rural). The study also showed that persisting and critical thinking are positively correlated. It indicated that students, who practice critical thinking skills, carry out educational tasks very well. On the other hand, students who possess a high level of persisting in their education duties, possess a high level of critical thinking.

Based on the findings, the following recommendations could be made:

- There is a need for paying attention to the persisting as a habit of mind, and integrate it in the learning and education process through developing the educational programs offered to students.
- Training teachers to develop persisting methods among all students in basic education stage in general and the basic fourth class students in particular.
- Conducting more studies regarding the persisting habit in order to develop new techniques that help students in acquiring it.

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