

**Review Article****Reasons and Suggested Solutions for Low-Level Academic Achievement in Mathematics\***Yousef Mathkal Abd ALGANI <sup>1</sup>  Jmal ESHAN <sup>2</sup> **Abstract**

This study tackles a worldwide problem, manifested in the low-level academic achievement in mathematics, by placing mathematics in a real life context beyond the border of book publications. It discusses the important role that mathematics plays in practice, as well as the effects of poor performance in mathematics on the academic career of students. The three pillars of the educational process are summarized in this article. In addition, the reasons for low-level academic achievement in mathematics are categorized in five divisions: student-related factors, teacher-related factors, curriculum-related factors, school-related factors and family-related factors. The article also states the stages in which mathematics goes through during school study, which are acquiring a strong foundation, practising mathematics, and the self-stage. Then it goes on more specifically to discuss the stages in which the teaching of any new concept or subject in mathematics must pass through. The researcher followed the qualitative approach based on in-depth interviews. The study ends up with suggested solutions for the problem of low-level achievement in mathematics for the student, teacher, parents and school.

**Keywords:** Academic achievement, math's anxiety, learning difficulties

**1. INTRODUCTION**

The future of any nation relies on education that combines ethical quality and the social practices of its citizens, which in require taking a profound interest in the educational system. Educationists believe that no one can gain ground in any field until he acquires an essential knowledge of mathematics. Besides, high proficiency in mathematics “enables complex democratic states to have critical technological knowledge in order to function properly” (Jameel & Ali, 2016, p.124).

Moreover, mathematics is considered to be one of the most difficult subjects, which is why the academic level of students in this subject is poor. The poor achievement means that the student does not receive the good marks that qualify him to move from one stage to another successfully and efficiently, the marks obtained by the student measures the level reached by the extent of the benefit achieved during the current stage of teaching. The problem of academic achievement is one of the problems that plague parents, teachers and those who carry out the teaching process as a whole, in addition to the student himself. It has many negative effects in the future on the student himself, on the whole generation and the society as a whole. Both teachers and the students must pay good attention to this weakness and begin to treat it at an early stage. However, no matter how hard the educational system tries, there will always be some poor academic performance, which, according to Muhammed Al-Zoubi (2015), is “a performance that is adjudged by the examiner and some other significant as falling below an expected standard”. He also stresses that academic failure is not only frustrating to the pupils and the parents, its effects are equally crucial on the society in terms of lack of manpower in all fields of the economy and politics” (Al-Zoubi, & Bani Younes, 2015). Besides,

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it negatively affects students' academic career such as "examination malpractice, low thinking ability, low rate of research making and low good standard of living" (Bamidele, 2019).

It is well known that the dilemma of low academic achievement in mathematics is inevitable, widespread, and even global. In addition to this, it is relevant to all academic levels starting from elementary up to university and beyond. However, this article is an attempt to shed light on the reasons behind such a disturbing dilemma, hopefully generate English and Arabic scholarly works to tackle the problem and find solutions as well.

### **1.1. Research Question**

What are the reasons for low academic achievement in mathematics by Arab students as members of a minority in the State of Israel<sup>†</sup> who are moving up from the intermediate to the high school level? The researcher follow the qualitative approach based on in-depth interviews and recommendations of previous studies and observation to obtain the maximum benefits and give accurate qualitative results based on interviews.

Educational achievement is one of the most important aims of the educational process, as it is the basic criterion in the judgment of pedagogical success. However, the low level of educational achievement is one of the most important problems that hinder the modern school, because it has serious negative effects on the school and the community as well. Anyone who has experienced teaching can recognize this problem in almost every semester. There is always a group of students who are unable to keep up with the rest of students in understanding the curriculum. This group often turns into a source of disturbance and inconvenience, which may affect the educational process in the classroom or cause general disorder within the school.

Before delving into the factors behind the low academic achievement level, it is worth mentioning the three pillars of the teaching process, namely: teacher, student and educational environment (Mohammad, & Mohammad, 2016).

The first pillar is the teacher who leads the process of education to achieve the desired objectives of the developed curriculum, away from memorization and indoctrination in the in-class performance via his\her technical and educational role. In this way, the teacher seeks an improvement in trends and the acquisition of the basic skills that contributes to the education of science students characterized by critical and creative thinking. The teacher is to be totally prepared for intellectual production in all areas of his life. Through appreciating and respecting students, motivating them and encouraging them to creativity and thinking, all the aspects of a human educational personality will be achieved. The second pillar is the students (learners) interested in the curriculum, following all its subjects and lessons with passion, and eager and motivated to learn. In addition to having a healthy body, they are aware of their role in the educational process, seek to achieve it, and finally, have a great desire to become a conscious scientific personality capable of thinking and being creative.

The final pillar is double-sided, in which the first side is the school environment. It promotes the existence of an integrated educational school environment, equipped with many educational aids and tools that achieve the objectives of the curriculum. This environment should balance between the characteristics of the materials, with due consideration to the fact that mathematics needs to be taught early, which helps to develop a schedule that includes math classes at the beginning of the school day, while avoiding its teaching at the end of the day. The other side is the home environment, where it requires a home that grants each member the right to learn freely, keeping up with both school and teachers continuously in terms of students' daily homework, monthly tests, vulnerability, or failure. On the other hand, the reasons behind low academic achievement could be basically embraced under five main categories, namely: student-related factors, teacher-related factors, curriculum-related factors, school-related factors and family-related factors (Algani, 2018; cited in Rashid, 2015).

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<sup>†</sup> According to the Isreali Education Ministry (2018).

### **1.2. Student-Related Factors**

Mental abilities, health and psychological state, as well as social adjustment, are factors that contribute to the level of educational attainment. A student with a low level of mental abilities is likely to have low academic attainment, in addition to health and psychological deterioration that necessarily affects the level of productivity of the individual in general and the students' scientific performance in particular. The limited ability of the student in social adjustment makes him/her more isolated and less interactive with a reduced level of knowledge acquisition, which leads to a low level of academic achievement (Ferla, Valcke, & Cai, 2009; Naji, 2002).

### **1.3. Teacher-Related Factors**

Those reasons are manifested in scientific competence, teaching experience and appropriate methods of teaching. The low level of scientific competence of the teacher, which is necessarily reflected on his/her educational performance, may negatively affect the motivation of students to acquire the knowledge he/she offers, due to the students being (or awareness) aware of the teacher's incompetence. Moreover, the lack of teaching experience affects the overall image that the students form about a teacher who lacks some of the basic skills for the transmission of scientific material to the students, and thus affects their academic achievement (Naimi, 2010; Naji, 2002).

### **1.4. Curriculum-Related Factors**

Those factors are summarized in the clarity of objectives, presentation of the scientific material and the extent of students' interaction with the content and the ability to measure cognitive performance. Taking into account that the curriculum is a major component in the educational process, the lack of clarity in terms of the objectives, the way of presentation and treatment of scientific material contributes to the emergence of a cognitive barrier in the students. This will eventually lead to student reluctance of study and constitute a negative feeling associated with the presented material (Naji, 2002).

### **1.5. School-Related Factors**

These factors include classroom environment, infrastructure, availability of facilities and scientific laboratories. The school environment that lacks adequate infrastructure and a convenient classroom environment which provides an acceptable degree of students' learning as well as appropriate educational aids, will have a lower educational-attainment level. In the absence of environmental attractiveness of the school, students cannot wait to leave the school. All this is reflected negatively on the students' cognitive gains and performance. Not to mention that an overcrowded classroom makes it impossible for all students to participate (Naji, 2002).

### **1.6. Family-Related Factors**

Family-related factors are summarized by social stability, financial status, and scientific and cultural level. The lack of social and financial stability of the family negatively affects the student's motivation and attitudes towards school and education. Failure to meet the basic needs associated with food, housing and personal expenses contributes greatly to the student's preoccupation with thinking about working at the expense of study (Einat Heyd-Metzuyanim, 2015; 2016).

Scientists distinguish between two patterns of learning, procedural learning and conceptual learning. Procedural learning is a sequence of actions for solving math problems (Rittle, Johnson & Wagner, 1999), which is a "learning that involves only memorizing operations with no understanding of underlying meanings" (Arslan, 2010). Conceptual learning on the contrary as defined by Rittle, Johnson and Wagner is a "explicit or implicit understanding of the principles that govern a domain and of the interrelation between pieces of knowledge in domain," and involves understanding of learning operation and interpreting concepts and relations between them (Arslan, 2010).

Einat Heyd-Metzuyanim (2015; 2016), in her articles about the impact of parents and the surroundings on learning mathematics and its relationship with learning patterns and the fear of mathematics, concluded that the positive support of parents leads to the development of learning mathematics among students and increases their motivation to study mathematics. She also pointed to the strong relationship between social pressure and the traditional method of learning, which leads to a

fear of mathematics and math tests which she sees as a vicious cycle: Ritual Learning → Difficulties in mathematics → math anxiety → Ritual Learning.

Many researchers have made it clear that parents, environment, colleagues and teachers have a close relationship to the pattern learning of the students (Algani, 2018). By the same token, a statistical study revealed that “the majority of students strongly agree that mathematics is naturally a difficult subject and through strictness it can never be taught” (Jameel & Ali 2016, p.113-114). Moreover, the same study concludes that “the viewpoint of teachers is that the lack of exercise and drill is a major cause affecting the acquisition of concrete and abstract mathematical concepts while the parents consider the low level of student’s attention as a major cause hindering high achievement in mathematics” (Sarhan, 2017).

Furthermore, another study revealed the five most important reasons that lead to the low level of academic achievement of students in mathematics according to teacher estimations. The reasons are the following in a descending order: Health impairment, behavioral problems, lack of self-interest in study, lack of a sense of belonging to the school that leads to low interest in study, and the lack of teachers’ knowledge of modern educational and psychological theories, which all lead to students’ poor performance (Barakat & Hirzallah, 2010, p.17). However, the fact that mathematics is a cumulative science in which the following knowledge or skill can be learned only if the student has understood the previous knowledge or skill, makes the lack of understanding and fear of mathematics a general problem. Besides, the abstract nature of mathematics makes it difficult to learn, as it is independent and weakly connected with the physical world, because it is based on abstract rules and concepts that require prior understanding in order to put them into practice.

Algani (2018) argues that learning mathematics, during years in school, goes through three stages manifested in: strong foundation, practising mathematics, and finally, the self-stage (Algani, 2018). The first stage is the strong foundation, which includes the ability of students to understand basic mathematical concepts such as calculations, counting and others. It is worth mentioning that this stage is also called ‘sensory learning’. It means that the teacher teaches and examines the content of the curriculum and its skills through concrete objects, such as cubes, tools and colors, in which dealing with all these tools is through sense and action. The second stage, practicing mathematics, depends upon the first one. Mathematics, as explained earlier, is a science that relies on adding new information to the previous information. Thus, if the former information is not strong, the added one will be weak by default. Furthermore, if the students’ base is strong in the ‘sensory-learning phase’, in addition to practicing mathematics and computational processes easily during the second phase, transition to the third stage would be easy and automatic.

Moving to the final self-stage, which requires that the students have passed through the previous stages successfully, students in this stage try to review their lessons and try to solve homework themselves relying on their abilities and skills acquired through the previous stages (Algani, 2018 as cited in Rashid, 2015, p.21). However, Mohammad & Mohammed (2016) Nitiri (2001), Plummer, (1995), Schneider, & Buckley (2002) state that teaching any new concept or subject in mathematics requires passing through certain stages as follows:

### ***1.7. Teaching for an initial understanding of the subject***

When a student starts learning a new subject or concept in mathematics, it is not enough for the teacher to give a lecture on the subject. The student would not be able to absorb and understand a new, unfamiliar topic if the teacher dominates all the time in the class. If problems often encountered by students are not explained by the teacher, failure to understand the subsequent procedure is inevitable. However, this does not mean that the provision or presentation of information must be excluded absolutely, as there are times when teachers have to resort to them to help them understand. Besides, teachers should direct questions to students constantly in order to ensure their understanding as well as eliciting questions from them and encouraging them to participate in discussions.

### ***1.8. Teaching to deepen understanding and comprehension***

There is no single way for students to learn a new subject in mathematics. Teachers have to adjust their style and modify it in the light of the situations they encounter. They also have to use more than a method and have to integrate it to achieve the ultimate goal, which is to develop the

students' understanding of new ideas successfully. However, teachers and students commit a fatal mistake when trying to cover a large amount of mathematic material in a short time, which leads to a disruption in the learning process. Teachers and students should avoid speeding to learn a new topic because the development of the process of learning new concepts is a slow one that needs a continuous discussion and an interaction between the efforts of the students and teachers at the same time.

The constant goal is to develop a broad mathematical understanding based on a solid and coherent background and to nurture the student's continued interest in the subject in order to make it possible to reproduce and appreciate the learned material, in addition to acquiring an increased ability to think independently and to ensure the highest possible level of student involvement. Understanding the new ideas and relationships in mathematics is a precondition for mastering learning, as mastering a new subject in mathematics requires more than just understanding. Instead, the subject should be familiar to students and become part of their mathematical background. This is done only by allowing students to work and think independently, studying diversified examples, and solving different equations. New concepts, in general, are not mastered unless they are found in different contexts, and mathematical rules and relationships are mastered only by continuous application.

### ***1.9. Teaching with a view to transitioning learning and training***

Mathematics involves concepts, principles, theories, and patterns of mathematical thinking and manipulation that can be applied to other subjects in mathematics and beyond. Learning transmission means that the performance of a task or the educational experience in a particular situation affects the performance of a subsequent task or learning a new experience. It means that learning in a given position affects learning in another new position, and the transmission of learning may be a positive transition if performing a task facilitates or helps to perform a second task. Transmission of learning may be negative when performing a previous task disables or interrupts a subsequent task performance.

### ***1.10. Learning for education retention and continuation***

Every newly learned subject in mathematics will be forgotten regardless of the degree of proficiency unless it is maintained via repeated application and training. This is particularly true of skills and mathematical relations; skills require structured training, while relationships and concepts need to be reviewed and applied at multiple intervals. The means of learning for the sake of permanence and continuation are training, review and application.

First, the modern view of learning mathematics considers training as an essential means of achieving desirable controls, as well as emphasizing concepts, meanings and relationships. If understanding is to be guaranteed, many calculations must be done not only accurately but also easily and quickly if they are to be useful. Nevertheless, in order to do these calculations easily, it is necessary to practice the regular and repeated training. If learning mathematics is to be effective, it must be accompanied by understanding along with the efficiency in calculations. Second, review is linked with training, since both are characterized by repetition and are intended to consolidate information, concepts or relationships and differentiate between them due to the objective of each because training aims to make some processes relatively automatic. Review aims to confirm and understand the details and to organize the important things and see them in a coherent manner in order to understand the relationship between the different parts of each other, and the relationship of these parts to the unit as a whole. That is to say, revision is concerned with ordering and linking elements together and taking a fresh look at the subject studied.

Finally, after students learn efficiently, there is the problem of keeping what they have learned ready in their minds and at their fingertips. To avoid this, skills must be practised and ideas should be stimulated from time to time, even if students have moved on to learn a new topic. It should be noted that training and practicing should not be intensive and concentrated but should be repeated at different intervals, and the same goes for the application of principles and ideas.

On the other hand, the academic solutions against failure that students may opt for could be summarized in ten points, according to Al-Zoubi & Bani-Younes (2015), and Algani (2018) as following:

1. Endeavor to discover how to set objectives, plan well and oversee time carefully. Currently, these are accessible through books, Internet and TV programs. In addition, the student can take advantage of holidays before the tests to do this.
2. Prior to study, creative and reasonable planning must be made, since success does not occur all of a sudden or by some coincidence. Thus, planning is fundamental for success and does not require much time; rather, it needs precision. Moreover, planning ought to be adaptable and simple so that the student can change it.
3. Search for the genuine explanation behind failure, and exploit it in order to find clear principles for success.
4. Give attention to the essential needs by focusing on a healthy eating routine to have the needed energy.
5. Take a break every once in a while to be active since memory needs motivating forces to keep concentrating with eagerness.
6. Pick convenient companions or good examples to keep students from recurrent absence.
7. Never underestimate your capabilities if you fail, be aware of the reasons behind failure.
8. Have a good early sleep before exams to be able to concentrate.
9. Disregard any distraction during learning, to be able to learn fast and efficiently.
10. Prepare a convenient environment for proper learning, keep warm in winter, cool in summer, and avoid any disturbance.

However, there are various methods teachers, parents and schools may resort to in order to overcome such a problem, starting with those which teachers opt for:

- Encouraging students to get the highest marks and motivate them by giving them gifts or satisfying a wish for them.
- Observing students constantly, taking appropriate action to help them raise the level of achievement.
- Communicating with parents and trying to understand the problem.
- Employing untraditional methods, such as projectors, interactive boards, through which students can participate in solutions.
- Conducting diagnostic exams and trying to identify and address failures.
- Using worksheets and monitoring the student's weaknesses points.
- Performing post-treatment exams to observe the difference.
- Granting students, a chance to ask and urging them to do so, which instills confidence in them.
- Avoiding assigning too much homework.
- Identifying the individual differences among students, as each student has a certain comprehensive capacity, which should be taken into consideration in exams, or when students are required to answer questions.
- Verbal reinforcement when students solve equations or answer questions, by saying words such as: Excellent, wonderful.
- Giving students additional grades when they solve equations or answer questions.
- Linking the mathematics lesson to reality to make it easier for the student to remember.
- Respecting students enhances their self-confidence. (Sarhan, 2017)

Solutions for the parents to opt for:

- Parent cooperation with the school is an essential step for preventing the low level of academic achievement.
- Continuous encouragement and enhancement of self-confidence.
- Respecting the student's abilities and personality, and avoiding comparisons between him/her with his\her peers in terms of the academic achievement. (Ibrahim, 2016)

Solutions for the school to employ:

- Schools "should endeavor to employ more training and qualified teachers in the field of education to handle the teaching of mathematics with a wholeheartedly and a serious hand in order to make the teaching and learning ... more effective" (Bamidele, 2019).

- Schools should “endeavor to provide the school with enough teaching and instructional aids on teaching mathematics in [order] to prevent fatigue and boredom and to make ... teaching ... real, and more meaningful to the pupils” (Bamidele, 2019).
- Consequently, it may be concluded that when all pillars of the teaching process fulfill their function, the existence of the problem will be prevented in the first place, in addition to being the solution when the problem occurs. That is why the ultimate solution for this problem, and most of the problems on the world, is to function as properly as possible in all aspects of life and to prevent undesirable bad consequences.

## 2. METHODOLOGY

Life stories expose the significance and subjective interpretation given to his life by an individual, and to certain events that occur during the course of his life (Plummer, 1995). In this research work, I am trying to expose the integration experience of intermediate level pupils into Grade 10 and to describe the emotional state of four pupils of the Arab sector in Israel. Raising their personal stories is intended as information that can be used as a parameter for the effective improvement of their experience in the transition between the intermediate and the high school level. Location of the participants was carried out through personal acquaintance with their teachers and parents through whom additional research participants were found.

The collection of research data was done through semi-structured interviews conducted with each of the participants alone in a study room in the school. Each interview extended from half an hour to fifty minutes. The appointed time of the interview was fixed in advance, and at the beginning of the meeting, each pupil received brief information about the subject of the interview and was asked to agree to its recording, with the explanation that the research was anonymous and confidential. Agreement was given verbally by the pupils, parents and teachers. The personal questions made use of the narrative interview technique that allowed for the presentation of stories and film scripts of a mathematics lesson that can explain the experience of pupils in the transition from the intermediate to the high school level.

### 2.1. Participants

The research included four Arab pupils during their first term in high school who are taking five units of mathematics. All of them are originally from villages inhabited only by Muslims and are of the same socio-economic background. According to the report of their teachers, their grade range in the final exams of Grade 9 was 80-100.

## 3. RESULT and DISCUSSION

In this section, the findings of the interviews are presented in an attempt to understand the low level of achievements of Arab pupils in the transition from the intermediate to high school level. The research findings indicate five categories: parental influence, teacher influence, social influence, friend influence, and learning style of the pupils. In addition, the challenges that faced the interviewees according to their perception are presented (all the names of the interviewees are fictitious).

### 3.1. Teacher influence

Teachers who support and encourage learning as a form of unconventional research and achieve significant teaching in class, strengthens the attitude of the pupils towards the study material. When Hamid was asked, he replied that: "My teacher takes advantage of the errors of my classmates to explain every point. He explains homework assignments and teaches geometry through games. He also tries to relate to each one of us and I love his lessons", " The teacher encourages us and follows us, teaches us mathematics with games, and constantly communicate with our parents, and respect us" said Yusuf – another student.

### 3.2. Social influence

There is a certain approach which claims that the existence of social interaction in itself creates a resource for the individual. In addition to this is the attitude towards social capital as an

expression of shared norms and trust that derives from the existence of social networks. Hamid, a pupil specializing in computer studies in school, says that: "It is fun for me to take a 'selfie' in the computer laboratory, and my relatives, friends and parents call me a special engineer or a fine engineer. I feel pleasure and satisfaction, and I am working hard to be an engineer".

Here we can divide the social aspect into two subcategories:

(a) *Parental influence*

In the present research, parental influence was found to have influence on the aspirations of the pupil. From the research data it appears that all the interviewees were the children of parents with a high level of education which provided them with motivation.

Yusuf, who was asked to tell about himself, began to speak about his educated family: "We are an educated family and if you wish I will tell you about each one and their professions. My father is a retired teacher, my mother is a teacher, my elder brother is a program engineer in Intel, and his wife is an English teacher. My brothers have high grades in school, and I am interested in studying program engineering at the Technion<sup>‡</sup>. I have already heard about the Technion from my engineer brother who encourages me to study there". In a traditional Arab family, the fathers are the most important authority in the family and serve as the central decision makers in it. In the present research, we see the involvement of the parents of Sammy, a five-unit mathematics pupil with specialization in physics in Grade 10 in his decision making: "My parents want me to study medicine, and I believe I will be a successful doctor".

(b) *Friend influence*

According to one of the interviewees, the support of his friends influenced the improvement of his achievements and the realization of his dream (study at the Technion).

Fadi, a pupil of five-unit mathematics, says that: "I was in despair and told my friends last year that I could not go on any longer (to get a high grade in mathematics) and they encouraged me by saying 'you can study more, we will help you and study together'. They helped me, and I understood all the material and received a grade of 100".

### 3.3. Learning style of pupils

Learning style is of great importance in the understanding of the study material. Hamid says that: "I am not satisfied with the material that the teacher transmits in the lesson. When I return home, I go into the Internet and YouTube to see film strips that explain the material in depth because there is a lot of material that I do not understand in class and do not want to know about it verbally but to understand it in depth".

## 4. CONCLUSION

This research is conducted in order to examine the achievements of low-level pupils in transition from the intermediate to the high school level in Arab schools in the State of Israel. In addition, it is meant to examine the challenges that face these pupils in the transition to high school and the factors that influence them. The discussion of the research findings will be carried out in response to the research questions. Therefore, we shall first deal with the findings that relate to the integration of Arab pupils in high schools.

Family influence exists on pupil aspirations. From the research findings, it appears that all the interviewees under research are the children of parents with a high level of education which serves to motivate them. The awareness of the parents and their positive support, the conceptual learning style of the pupils, and social ties as well, have a great influence on the pupils, on their style of learning and their understanding of the study material. This is evident in the grades and the number of study units for the Bagrut<sup>§</sup> examinations that the pupils undertake in high school and in the support of society through the social media. The great influence on the style of learning and the positive support encourages them. In addition, the support of their friends constitutes a fundamental basis for advancement in the achievements of the pupils, and teachers who apply the principles of

<sup>‡</sup> Israel Institute of technology.

<sup>§</sup> is a certificate which attests that a student has successfully passed Israel's high school matriculation examination.



significant learning increase the love of the pupils for mathematics which is the cause for greater achievement.

This study sheds light on a critical problem that is widely prevalent, which has bad consequences on various levels: low-level academic achievement in mathematics. After discussing the problem with most of its aspects and the interviews, the final decision was to provide suggested solutions for every pillar of the teaching process, students, teachers, parents and school, which maps the road for all who suffer from the problem and gives them the ability to deal with it. Remarkably, all solutions represent a single main principle, which is to keep functioning properly, and which is also considered to be a precautionary procedure.

In other words, to solve the problem, or to prevent it, students have to set objectives and to plan properly with due consideration to time, to figure out the real reason for their failure, to take multiple breaks while studying, to choose good friends, to have confidence, to sleep early and avoid distractions, and to prepare a convenient environment for proper learning. Moreover, teachers have to encourage students to get high grades by multiple means, to observe their students and to take proper action for any problem, to contact parents, to employ creative teaching methods, to conduct diagnostic and post-treatment exams, to employ worksheets, to encourage students to participate and ask questions, to avoid too much homework, to identify individual differences, to inform students verbally, respect them, give them additional grades when they make an effort, and to link mathematics to reality.

Parents, on the other hand, should cooperate with the school, encourage students and enhance their self-confidence, respect students and avoid comparing them with their peers. Finally, schools should employ qualified teachers, and provide the school with proper teaching aids. It is evident, then, that all solutions are simple, available and easy to apply, while the results would greatly affect the whole society and the country, as well as the students' way of thinking, personalities and their future success.

## 5. REFERENCES

- Algani, Y. (2018). Applying creative skills in teaching math at primary school stage. *Journal of International Economy and Business*, 6, 26-33.
- Al-Zoubi, M., & Younes, M., (2015). Low academic achievement: causes and results. *Academy Publication*.
- Arsalan, A. (2010). Teaching mathematics and its applications, *An International Journal of the IMA*, 29(2), 94-107.
- Bamidele, A. (2019). Causes and effects of poor academic performance of primary school pupils in mathematics in akinyele local government area of oyo state. *Academia*.
- Barakat, Z., & Hirzallah, H. (2010). The reasons behind the low level of academic achievement in mathematics among students in the lower elementary stage from the teachers' point of view in Tulkarm governorate. *Al-Najah Journal*, Al-Njah Uni, Nabils. 3(5), 43-55.
- Ferla, J., Valcke, M., & Cai, Y. (2009). Academic self-efficacy and academic self-concept: reconsidering structural relationships. *Learning and Individual Differences*, 19, 499-505.
- Heyd-Metzuyanim, E. (2015). Vicious cycles of identifying and mathematizing: a case study of the development of mathematical failure. *Educational Studies in Mathematics*, 504-549.
- Heyd-Metzuyanim, E. & Graven M. (2016), Between people-pleasing and mathematizing – south african learners' struggle for numeracy. *Educational Studies in Mathematics*, 91(3), 349-373.
- Jameel, T., & Ali, H. (2016). Causes of poor performance in mathematics from the perspective of students, teachers and parents. *American Scientific Research Journal for Engineering, Technology, and Sciences (ASRJETS)*.6(3), 57-68.
- Marjoribanks, K., (2002). Family background, individual and environmental influences on adolescents' aspirations. *Educational Studies*, 28(1), 33-46.
- Mohammad, B., & Mohammad, I. (2016). The low level of academic achievement in mathematics of some students in the elementary stage (hafr al batin). *Journal of International Economy and Business*, 4, 25-45.
- Naimi, A. (2010). *Low academic achiever students in the schools of the united arab emirates*. Al Ittihad Newspaper. Emirat.

- Nitiri, D. A., (2001). Access to higher education for nontraditional students and minorities in a technology focused society. *Urban Education*, 36(1), 129-144.
- Plummer, K. (1995). *Rethinking methods in psychology*. London: Sega Publications.
- Rashed, F. (2015). Factors behind the poor academic achievement in mathematics of the preparatory stage students at al-ramadi city schools in Iraq from teachers and principals point of view. Middle East University. Iraq.
- Ray, B. (2010). Academic achievement and demographic traits of homeschooled students: A nationwide study. *Academic Leadership*, 8 (1), 1-44.
- Rittle-Johnson, B., & Alibali, M. W. (1999). Conceptual and procedural knowledge of mathematics: Does one lead to the other? *Journal of Educational Psychology*, 91(1), 175-189.
- Sarhan, I. (2017). Low academic achievement in mathematics. *Journal of Developmental and Behavioral Pediatrics*, 10(2), 45-56.
- Schneider, M. & Buckley, J., (2002), What do parents want from schools? evidence from the internet. *Educational Evaluation and Policy Analysis*, 24(2), 133-144.