

Parental Involvement In Students' Mathematics Achievement

of Fourth Grade Students at Al-Shaqab Independent Primary School for Girls

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June 20, 2009

ABSTRACT

The purpose of this study was to identify the effect of parental involvement in students' mathematics achievement. The study was conducted at Al-Shaqab primary independent school for girls. Doing homework is one of the major problems in this school. According to survey data collected by the math teachers in the school, about 60% of the students were not doing homework.

The investigator selected one class of 24 students in grade four. This class was chosen because of the diversity of learners, two students are of special needs. Many students in this class have a high record of uncompleted homework.

The method for this investigation focused on contacting parents directly by text messages during the period 8th of March 2009 to 20th April 2009, in order to inform them about the required homework.

A comparison of score on the unit test before and after the intervention showed that there was no significant improvement in student scores. These findings strongly support other research (Pezdek, Berry and Renno, 2002) showing that parental involvement did not affect student achievement when comparing the students' scores in unit test before and after the study; however, remarkable improvement in students' motivation towards class participation and in homework completions was recorded.

The findings from this study indicate that parent involvement was clearly affecting the percentage of homework completed. 74% of the parents responded well to the text, messages while 26% of the parents either responded weakly or did not respond.

Before this study, only 55% of the students solved homework, but this percentage was significantly increased up to 78% during this study, while the times of students' participation per week increased from four to six. When a correlation test was run between the percentage of homework completions and the strength of the parents' response a very strong direct relationship was observed. As parents' response increased, the percentage of completed homework and class participation were increased.

This study provides information for parents, teachers, and school administrators attempting to implement family involvement initiatives, as well as implications for further research about effective methods for parents contact in Qatar.

Introduction

Why did we choose this topic?

This topic in education has received much attention in recent decades and many schools tried different methods to enhance parents involvement in their children's education. This encouraged us to look up some literatures in the internet about this subject. We found out that education research in the USA over the past three decades has established a direct correlation between increased parent involvement and increased student achievement and especially among elementary school children, adding to that same results were obtained in other parts of the world.

Most teachers, parents, and students accept that homework is an essential and important part of the learning process but others feel that homework is not effective enough to justify its widespread use.

The study was conducted at Al-Shaqab Independent Elementary School which is located in a district of the city where students' academic achievement may be considered below average, due to some students' family background be it academic or social. Added to that the lack of interest of the students in doing the homework on a regular basis, in spite of the fact that the teachers of the school have been trying their best in encouraging the students to do their homework on which certain marks are awarded for their academic assessment.

The aforementioned encouraged us to look into anything that may help the school management in enhancing the students' academic achievements of which homework execution is an essential factor.

Literature Survey

Parents play a vital role in their children's education. The parents' support can be capitalized on by their children's schools. Educational research has focused on the role that families play in their children's educational development over the past three decades has established a direct relation between parent involvement and student achievement (U.S. Department of Education, 2008).

Henderson and Mapp (2002) reviewed a wide range of studies on parent involvement (more than 51 research studies and literature reviews). They found that "students with involved parents, no matter what their income or background, were more likely to earn higher grades and test scores and enroll in higher-level programs; be promoted, pass their classes, and earn credits; attend school regularly; have better social skills, show improved behavior, and adapt well to school; and graduate and go on to postsecondary education" (p.7).

Many research studies indicate the positive relationship between parent involvement and student academic achievement (Grolnick, Benjet, Kurowski, & Apostoleris, 1997; Gutman and Midgley 2000; Shaver and Walls 1998; Epstein & Sanders, 2000). Another study found a strong positive effect on student achievement when parents work with students on homework (Van Voorhis, 2003).

In a research on the effects of parent involvement in homework, a meta-analysis of 14 studies showed that training parents to be involved in their child's homework results in (a) elevated rates of homework completion, (b) fewer homework problems, and (c) possibly, enhanced academic performance among elementary school children (Patall, Cooper, & Robinson, 2008). However, several studies (Cooper, Robinson, & Patall, 2006; Haas & Riley, 2008) have found that such results were not obtained at the middle school level where an inverse relationship between parental involvement and homework completion was recorded. A recent meta-analysis by Cooper, Robinson, and Patall (2006) indicated, in

general, a positive relationship between educational outcomes and homework; but, the strength of the relationship depended on some factors such as the student's grade level and the amount of time that student was committed to homework submission.

A report by Henderson and Berla (2006) covers 66 studies, reviews, reports, analyses, and books. Of these 39 are new; 27 have been carried over from previous editions. An ERIC search was conducted to identify related studies, and this report presents a collection of research papers on the importance of family to a student's achievement and education in school and the community. It was found that there is a strong indication between student achievement and the extent to which the family is involved in his or her education.

A study that examined the effect of homework time specifically on mathematics achievement, (Pezdek, Berry, & Renno, 2002) found that increasing the accuracy of parents' awareness of their children's mathematical skills may be a sensible first step toward enhancing the poor mathematics performance of children. Participation of both parents and teachers to help with homework was found to increase the depth and quality of learning (Hatch, 1998). Providing greater motivation, responsibility, sense of purpose, and confidence, all these factors could contribute to increase student achievement with homework completion (Hatch, 1998).

Parental involvement appears to be part of the solution in improving students' homework completion. The schools' mission is to promote the importance of parental involvement and should work on the classroom and school environments to improve children's adjustment and engagement (Simmons-Morton & Crump, 2003). Parents should be very much involved in the lives of their early adolescent children, assisting them and preparing them for the modern life (Simmons-Morton & Crump, 2003). The proactive parents in supporting their children with school work, enhances improvement of the student's behavior and social adjustment (Cordry & Wilson, 2004). In general, parent involvement is essential in homework completion to provide an encouraging environment and periodic rewards for assignment completion (Cooper & Nye, 1994).

The most challenging task faces educators today is how to improve parent involvement (Vandegrift & Greene, 1992). One factor that influencing parental involvement is that most of the parents lack the training to offer continuous involvement with their child's homework (Cooper & Nye, 1994). Another factor is parents' personal beliefs about the causes of school achievement and their ability to help their child (Hoover-Dempsey & Sandler, 1997), In most cases, parents spend more time watching television than talking about school issues with their children (Clevenson, 1999). To improve their involvement, parents should establish a routine for their child and observe their progress to help in homework completion (Xu & Corno, 2003).

Many parents advised that they do not receive enough information about school and what's going on at school (Clevenson, 1999). This lack of information can be summarized into concerns surrounding initiation, appropriateness reliability, follow through, lack of clarity and usefulness of communication, and a lack of teacher knowledge of students' needs (Munk, Bursuck, Epstein, Jayanthi, Nelson, & Polloway, 2001). According to Munk (2001), inconvenient opportunities to communicate, differing attitudes of parents and teachers toward homework, and teachers' limited knowledge about the student strengths and needs are factors cause communication problems.

Effective communication requires a two-way flow of information; because of that, clear communication between student, parent, and teacher is important to show the benefits of homework completion (Coutts, 2004). Research suggested different ways for teachers to keep the communication open-ended such as phone calls, e-mail, or a homework hotline (Munk, et al., 2001). This communication should start out at the beginning of the year when the educators sharing their

homework policy (Heitzmann, 1998). Most schools develop efficient structures for getting information out, but few of them develop similar structures to ensure receiving a feedback. The daily communication and feedback between home and school is the most widely used or requested service by parents (Callahan, Rademacher & Hildreth, 1998). For some schools, improving communication involves technology such as e-mail messages and interactive phone systems. Using such ways of communications will guarantee clear home/school communication with parents (Warger, 2001).

Tobolka (2006) communicated with parents through the Internet. He found that electronic communication enhance students' interest in their coursework and provides a clear picture for the parents about daily class activities and parents felt more involved in their student's school activities and more connected to the teacher. Students increasingly felt that it was important that they turned in their work and homework--they all wanted to have positive notes about their week sent home.

Clearly, parent involvement is important to the success of students, and communication with parents is essential to support that involvement. This study will add to this body of research by establishing whether text messages to parents of fourth grade girls in Qatar increases parent involvement, homework completion, and/or student achievement.

Procedure

A Grade 4 class was selected for this research. In this class, according to survey data collected by the teacher in the first semester, at least 60% of the students did not do the homework regularly. This topic was selected because homework is an important issue in math. Because most of the students were not doing homework. Sending a written message for the parents was not the effective method to reach the parents in this school because most of parents claimed that they never received any letter from the school.

The study aimed to identifying the effectiveness of parent involvement in doing in mathematics of fourth grade students at Al-Shaqab Independent primary school and because of that we decided to choose the text messages as a parents' contact method.

The method for this investigation focused on the involvement of the parents in their children's homework as per the following procedure:

- Text messages were sent to the parents to inform them about this research asking them to be involved in the homework. The parents received a text message for each assigned homework.
- The class teacher checked the homework.
- Check how many students solved correctly.
- Comparison of the test results before and after this research was carried out to assess if any changes in the students performance as a result of this research.
- Analyze the collected data

Question

Does parent involvement increase student's achievement in mathematics at the Grade 4 level?
The answers and the results will be outlined at the end of this research

Method

For this research, we used a mixed-method approach, combining qualitative and quantitative methods (Creswell, 2003; Onwuegbuzie, Jiao, & Bostick, 2004; Tashakkori & Teddlie, 2003). We chose to combine methods for two reasons: first, because the nature of the data from different data sources

differed in kind and second, because we felt this combination might provide stronger evidence related to our question (triangulation; Johnson & Turner, 2003).

Quantitative data sources included test scores, frequency and degree of homework completion, and number of times the student participated in class over a week's time. Qualitative data included the nature of the parents' responses. By establishing a scale from no response to excellent response, we were able to assign a number to represent the quality of parental response and thus were able to relate it to other qualitative data.

Standard statistical tests were performed on the quantitative data. A t-test was performed pre- and post-treatment test scores (O'Mahony, 1986; Press, Teukolsky, Vetterling, and Flannery, 1992). This test showed that there was not a statistically significant change in the scores, which was not unexpected over a small sample and a short time period (see results and discussion). We also did a correlation test between two sets of data, the strength of parental response and the degree of student participation in class as measured by the average number of times the student responded in class over a week's time. The results from this test showed a very strong correlation (see results and findings).

Frequency tables allowed us to discover the strength, change, and relationship among several different variables; for example, the number of students who completed homework before and after treatment, the amount of student participation before and after treatment, and the percentages of parents in each response group. These analyses allowed us to view the data in clear and understandable formats.

Results and discussion

The method for this investigation focused on contacting parents directly using text messages during the period 8th of March 2009 to 20th April 2009, in order to inform them about the required math homework.. methods of parents contact used before were not effective with all parents. Some parents claimed that they never received any letters from school. We decided to use the text messages as a direct communication with parents. During this period students were asked 20 times to do different homework. Number of the sent text messages equals to 15 messages, one of the messages was to solve review sheets which include 10 pages asking them to solve two pages each time, but we checked 5 times for the same message.

The findings from this study indicate that 74% of the parents responded well to the text messages while 26% of the parents either responded weakly or did not respond at all as shown in fig.(1). Parents' response was recorded based on a daily checking of doing homework. (If the student solve 85% or more = excellent, between 75% to 84%= v.good, 60%-74%=good, 40%-59%=weak, below30% no response)

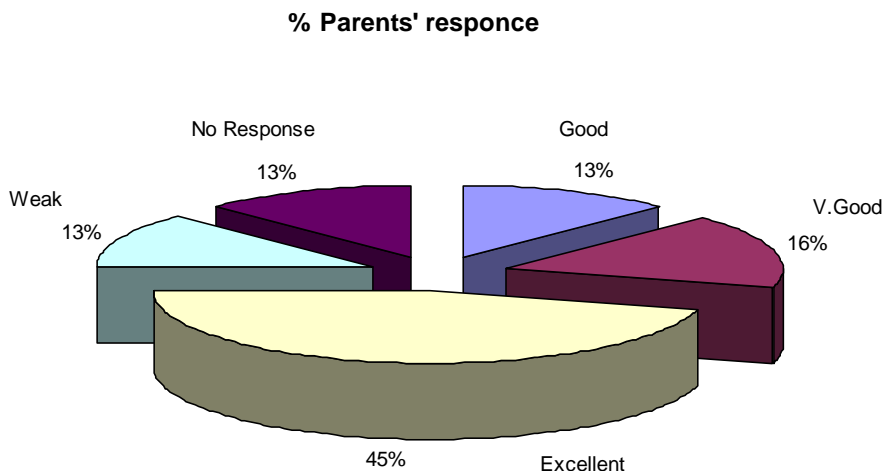


Fig.(1) -
% parents' response

The findings from this study indicate that parent involvement was clearly affecting the percentage of homework completed. Before this study, only 55% of the students solved homework, but this percentage was significantly increased up to 78% during this study as shown in fig.(2).

Parents' involvement does not mean that all students have solved correctly the whole homework. In some cases, 60% of incorrect answers were recorded. This may be due to that some parents are not qualified enough to help their children in doing homework or due to the misunderstanding of what they have to do to really involve in their children education.

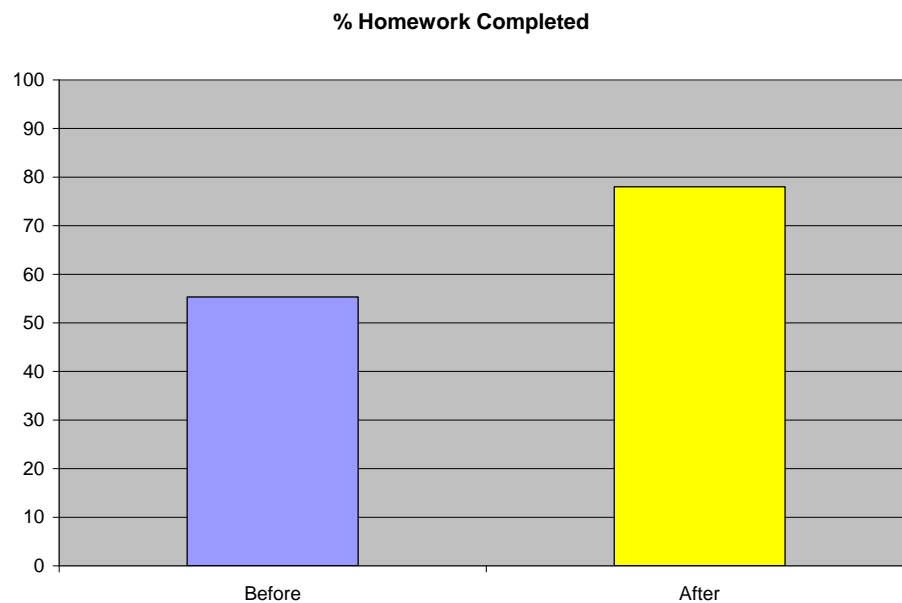


Fig. (2)

(Comparison of % Homework completed before and after sending text messages)

A remarkable improvement in students' motivation towards class participation was recorded as shown in fig.(3). Times of students' participation per week increased from four to six. When a correlation test was run between the percentage of homework completions, class participation and the strength of the parents' response a very strong direct relationship was observed. As parents' response increased, the percentage of completed homework and class participation were increased as shown in fig.(4).

These findings strongly support what Hatch (1998) conclude that when parents and teachers participate and help with homework, the depth and quality of learning increases. By adults providing greater motivation, accountability, sense of purpose, and confidence, these factors alone could contribute to increase student achievement with homework completion (Hatch, 1998).

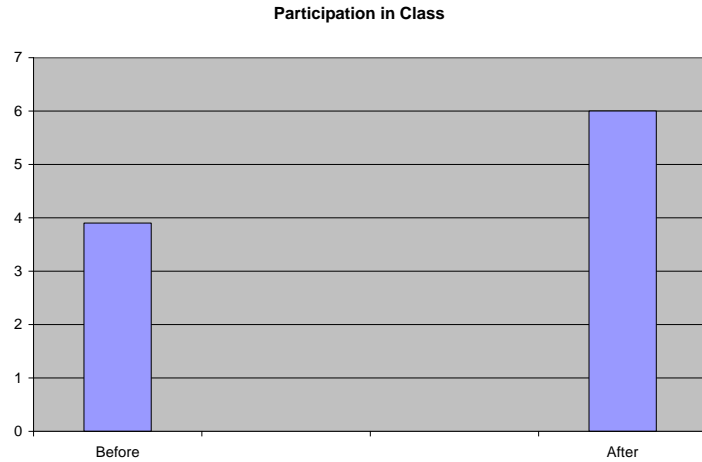


Fig. (3)

(Comparison of % class participation before and after sending text messages)

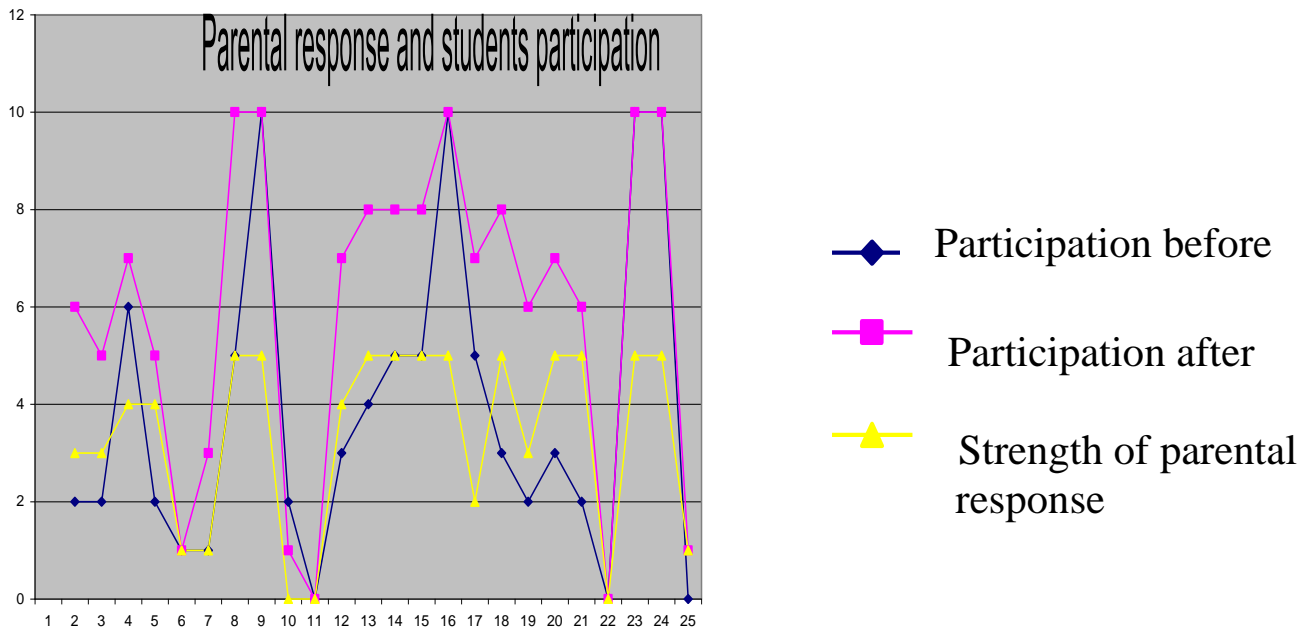


Fig. (4)

(Relation between strength of parents response and students' participation in the math class before and after sending text messages)

A strong positive effect on student motivation and enhancement the poor mathematics performance in the class was observed when parents work with students on homework and it appears that parental involvement is to be a part of the solution in improving students' homework completion.

A comparison of the scores on the unit test before and after the intervention showed that there was no significant improvement in student scores. About 25% of the students' marks were dropped down by (5-30)% but for the other 75% the marks either remained the same or increased by (10-40)% for some students. When relating the students marks to the strength of parents involvement, a strong relation can be observed. All dropped marks were referring to those students with weak or no responded parents. Significant improvement in students' achievements was not recorded in the research period given as it was short, a month and a half. Furthermore, we have to take into considerations the material explained during the research period depends on some math basics which the students do lack these skills.

The findings from this study indicate that parent involvement was clearly affecting the percentage of homework completed and increase the motivation to class participation. Consequently, further research needed to be done to implement family involvements effectively.

Conclusion

The most challenging task faces educators today is how to improve parent involvement. Effective parents involvement require a lot of work by both educators and parents. Although success will not come easy, the rewards are too great for a school.

This research linking parent involvement to a variety of positive student outcomes such as homework completion and class participation. The finding from this study indicates that parental involvements enhance the students' participation in math class and increase the percentage of completed homework

In general, parents' response when using text messages was remarkable compared to that when using letters to parents. The results obtained were positive, but still many factors need to be study. These factors include parents ability to support and participate effectively in their children education.

This study provides information for parents, teachers, and school administrators attempting to implement family involvement initiatives, as well as implications for further research about effective methods for parents contact in Qatar.

Recommendations

- For general action, further studies should be conducted on large samples.
- Investigate different methods of parents' contact.
- Extend the research period to study other factors affecting students' performance results.
- Adapt after – school programs for homework assistance for those students who have not received any support from their parents.
- Adapt programs in school to teach both educators and parents about effective methods of communications.

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