Investigate the Students' Interest in the Subject of Mathematics at Elementary Level in Khyber Pakhtunkhwa

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Abstract

Education is the knowledge of utilizing one's potential and abilities towards the betterment and the safety of the country. The current study was designed to investigate the interest of the students in the subject of mathematics at elementary level in Khyber Pakhtunkhwa. The current study was significant in this way that the students came to know the worth of mathematics but also for future researchers who intended to explore the benefits of mathematics at secondary and at higher secondary level of Khyber Pakhtunkhwa. All students of government primary schools in Khyber Pakhtunkhwa constituted population of the study. The scope of the study was delimited to the elementary schools in District Kohat. The study was further delimited to the subject of Mathematics for 8th class of the government schools of district Kohat. Four elementary schools were taken for sample of the study. In this way forty students were taken randomly through simple random sampling techniques as sample of the study. To achieve the objective of the study a questionnaire was developed for the students. Data was collected and analyzed by using different test. Conclusions were made in the light of the objectives and recommendations were given.

Keywords: *Education, Development, Mathematics, Practical, Elementary*

Introduction

The future of our state depends upon the system of education we give to our children and the way in which we bring them up, as future citizens of Pakistan. Education does not mean merely academic education. There is immediate and urgent need for giving scientific and technical education to our people in order to buildup our future economic life and to that our people trade science, commerce, trade and particularly, well planed industries. At the same time we have to build up the character of our future generation. We should try by sound education to instill into them higher sense of honor, integrity responsibility, and selfless service to the nation these are the words of Quaid-e-Azam. In these words he had emphasized the vital and most significant importance of education.

He had also set the goals to be achieved by our educational system. The Quaid had also been emphasized that the basis of Pakistan in Islam. The foundation stone of whole structured of the country constitutes that, which made, had accepted that Pakistan is an Islamic state. These constitutions put the responsibility of preparation of the people to live according to the tents of Islam. This could be done through education. If we wish to bring some drastic change in our total social system then, it is necessary to change the educational system. The improvement of educational system depends upon the quality of teachers.

The quality of education is directly related to the quality of its teacher. As the commission of national education said that, "No systems of education can rise above the teachers who serve it, and its quality depends upon the quality and efforts of teachers". Education is a direct National building activity and if leaders of thought and action on the various walks of life are to be produced, the country's best talents must be used in the teaching profession.

Education for All is the primary objective of Islam. The 1st literacy Campaign was launched with the first revealed verse of Quran. Islam was the first religion, which democratized Education. Quran and the sayings of Holy Prophet (PBUH) highly emphasizes Knowledge. Besides this at several places in the Holy Quran learning and the learned people have been praised."Oh prophet ask them, can those who know and those who do not know be equal?" (Zumar: 39:9).

According to UNICEF (2007) more than 113 million children have no access to school due to poverty, finical limitations, gender disparities, rural/urban imbalances and low priority of the education are the main hurdles to the UPE achievement.

We should also be aware of the wide importance of Mathematics, and the way in which it is advancing at a spectacular rate. Mathematics is about pattern and structure; it is about logical analysis, deduction, calculation within these patterns and structures. When patterns are found, often in widely different areas of science and technology, the mathematics of these patterns can be used to explain and control natural happenings and situations. Mathematics has a pervasive influence on our everyday lives, and contributes to the wealth of the country. These applications have often developed from the study of general ideas for their own sake: numbers, symmetry, area and volume, rate of change, shape, dimension, randomness and many others. Mathematics makes an especial contribution to the study of these ideas, namely the methods of

- precise definitions;
- careful and rigorous argument; representation of ideas by many methods, including symbols and formulae, pictures and graphics;
- means of calculation;
- And the obtaining of precise solutions to clearly stated problems, or clear statements of the limits of knowledge.

Review of Related Literature

The schooling system in Pakistan is mainly divided in Primary level, Elementary Level, Secondary and Higher Secondary level, University and Higher Education. The researcher opted to focus on Elementary level and more specifically the subject of mathematics. The main reason for studying mathematics to an advanced level is that it is interesting and enjoyable. People like its challenge, its clarity, and the fact that you know when you are right. The solution of a problem has an excitement and a satisfaction. You will find all these aspects in a university degree course.

Mathematics and calculation have been associated from earliest times. In modern times, the need to perform rapid mathematical calculations in war time, particularly in ballistics, and in decoding, was a strong stimulus to the development of the electronic computer. The existence of high speed computers has now helped mathematicians to calculate and to make situations visual as never before. Also this calculation has developed from numerical calculation, to symbolic calculation, and currently to calculation with the mathematical structures themselves. This last is very recent, and is likely to lead to a major transformation. These capacities change, not the nature of mathematics, but the power of the mathematician, which increases perhaps a million fold the possibility to comprehend, to argue, to explore.

The imagination of mathematicians is also stirred by its rigorous nature, which forces them to follow through the logic of their ideas. There are many examples of mathematicians producing apparently strange and inapplicable theories, noting simply that this is the way the mathematics seems to go, only to find these vindicated perhaps decades later by surprising applications. A recent example is the theory of knots, which was developed as a part of pure mathematics since 1870. A wonderful advance in 1985 showed how the theory could be applied in physics in relation to quantum theory, and in biology in relation to the way DNA unknots itself before dividing. Similarly, modern notions of chaos and fractals were pioneered by mathematicians in the early years of this century. Now fractals are a practical tool for compressing data on computer discs.

The study of mathematics can satisfy a wide range of interests and abilities. It develops the imagination. It trains in clear and logical thought. It is a challenge, with varieties of difficult ideas and unsolved problems, because it deals with the questions arising from complicated structures. Yet it also has a continuing drive to simplification, to finding the right concepts and methods to make difficult things easy, to explaining why a situation must be as it is. In so doing, it develops a range of language and insights, which may then be applied to make a crucial contribution to our understanding and appreciation of the world, and our ability to find and make our way in it.

Mathematics allows an almost perfect grading, commencing with exceedingly simple work and leading the students by degrees to harder and harder problems. In the subject of mathematics, the mere repetition of works or phrases will not hide the ignorance of pupil. There can be no difference of mathematical work that is either right or wrong, and it is usually a very simple matter to find out whether or not it is right. Mathematical reasoning done by studen6ts is entirely original thinking and not the reproduction of ideas previously heard or read. It is an undoubted truth that the mental qualities cultivated by mathematical study alone are not sufficient to insure ability for solving practical problems but on the other hand, it is evident that without these qualities one can hardly hope for success in the affairs of life. A German mathematician said, "God created the numbers only. The rest of the universe is created by man". A man had to count and measure in order to solve his problems at the primitive age. In the ancient times the study of mathematics was considered indispensable. Plato had written at his institution "who so ever is ignorant of geometry is not allowed to enter the institution (Beaudry & Capblle's, 1998).

Mathematics is a subject where you learn to do things, and you need feedback on whether your own approaches are the correct ones, in relation to both detail and overall plan. The use of continuous assessment is often an advantage, since in real life you are tested on the quality of the work you can produce, as well as the ability to do that work quickly and under pressure. It is becoming more important for you to show to a prospective employer that you can produce well thought-out work to a high standard, and that you can communicate what you know, both in writing and orally (Bolrian, 1987).

Research Methodology

Population

All students of government primary schools in Khyber Pakhtunkhwa constituted population of the study.

Delimitation

The scope of the study was delimited to the elementary schools in District Kohat. The study was further delimited to the subject of Mathematics for 8th class of the government schools of district Kohat.

Sample

Four elementary schools were taken randomly for the sample of the study. Out of four selected schools 40 students (10 from each school) were taken randomly through simple random sampling technique as sample of the study.

Research Instrument

To achieve the objectives of the study a questionnaire was developed for the students.

Pilot Testing

Pilot testing was done to test the validity and reliability of the questionnaire; Questionnaire was tried out on the students of one elementary school.

Validity of the Instrument

The questionnaire was validated through experts in the relevant field.

Reliability of the Instrument

For determining the reliability of the instrument, Cronbach's Alpha and split half methods were applied to calculate internal consistency of these items. The results of the pilot test were analyzed using the Statistical Package for Social Science SPSS version 12.0. The result value was $r = 0.997$ using both the methods.

Results and Discussion

Researchers administered the questionnaire; the data was collected and tabulated. The description of every table is given here.

Table 1:   Interest of Students in Mathematics

| Description	Yes	Yes %	No	No %	Total
Students likeness for Mathematics	26	65	14	35	40
Students Preference for Algebra.	28	70	12	30	40
Students Preference for Geometry	9	22.5	31	77.5	40
Student Preference for set	6	15	34	85	40
Students Likeness for formula	35	87.5	5	12.5	40
Student Likeness for diagrams	2	5	38	95	40
Students likeness for operations	4	10	36	90	40
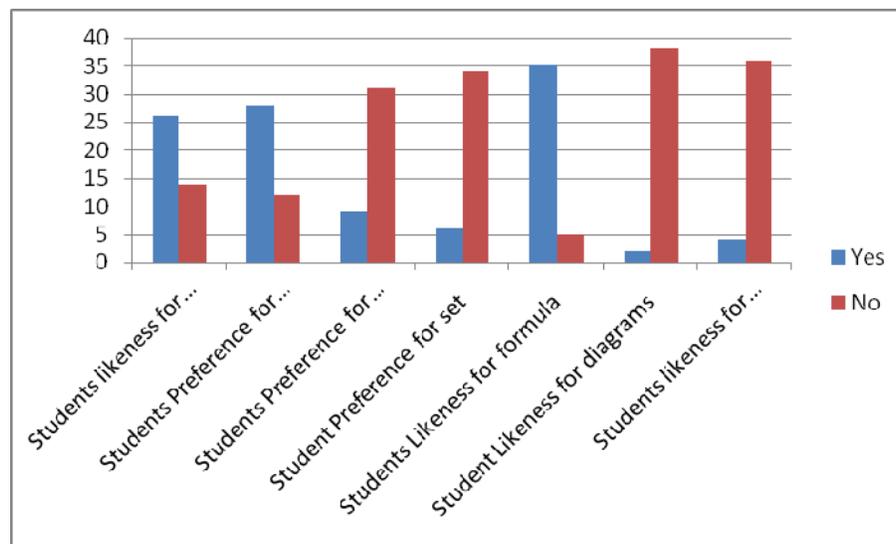
Graphical representation of the results

In our sample of 40 students, 26 (65%) take interest in Mathematics. They prefer Mathematics over other subjects. Only 14 (35%) students do not prefer Mathematics.

Out of the three main sections of Mathematics (70%) students like Algebra, (22.5%) students prefer Geometry while only (15%) students like Set Theory. (87.5%) students feel easy formula, (5%) students like diagram, while (10%) students like Mathematical operations.

Table 2: Curriculum of Mathematics

Description	Yes	Yes %	No	No %	Total
Suitability of curriculum	**24**	60	**16**	40	40
Application of curriculum	**21**	52.5	**19**	47.5	40
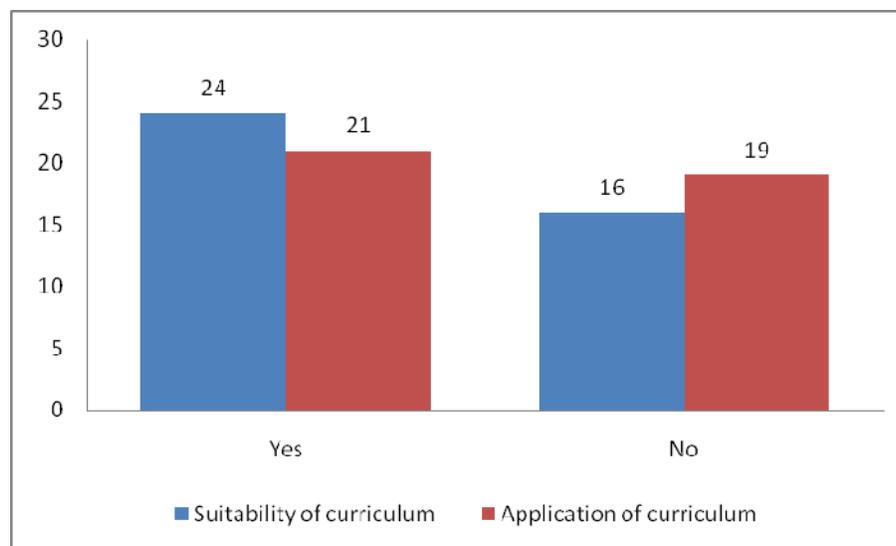
**Graphical representation of the results**

Out of 40 students, (60%) students think that curriculum of Mathematics at Elementary level is suitable to their mental level. The applicability of curriculum in the daily life is favored by (52.5%) students. They think it is being applicable to solve their day to day life problems.

Table 3: Showing regularity and attitude of teachers

Description	Yes	Yes %	No	No %	Total
Teacher's regularity in the class	**38**	95	**2**	5	40
Teacher's absenteeism	**2**	5	**38**	95	40

Teachers use of physical punishment	**19**	47.5	**21**	52.5	40

Graphical representation of the results
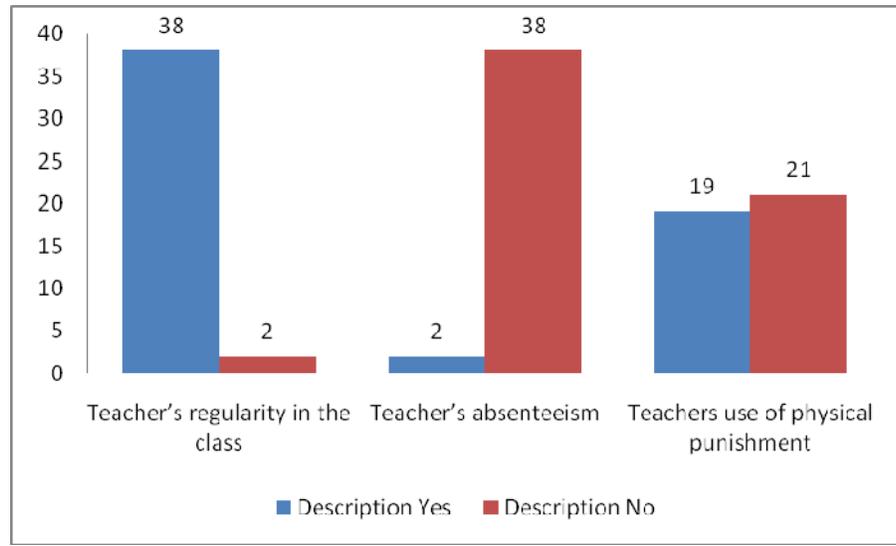
38 Student (95%) say that their teachers attend their classes at proper times while 5% are not regular 47.5% accept physical punishment while 52.5% are against it.

Conclusions

In the light of the discussions, following conclusion was inferred.

1. It was concluded that % students have interest in subject of mathematics.
2. Results showed that 70% students preferred Algebra in mathematics which showed that students have greater interest in learning Algebra.
3. It was concluded from the results that students do not have their interests in learning geometry. This is the reason that students are weak in making diagrams and other operation related to the geometry.
4. Students feel easy to use direct formulas for solving the problems of mathematics.
5. Results also showed that curriculum at elementary level is suitable and it is being applicable for solving the daily life problems.
6. Teachers come into the class regularly and they were not in favour of punishment.

Recommendations

In the light of conclusions, following recommendations were made;

1. The teaching profession should be made attractive to attract the talented people in this profession.
2. Arrangement should be made for the provision of instructional material as well as audiovisual of visual aids.
3. In the selection of teachers for professional institutions, background in the subject of mathematics should be given top priority.
4. Mathematics classes should consist of thirty to forty students.
5. There should be guidance facilities for elementary school students.
6. Special attention is required for geometry because it has an important role into daily life of human beings. Contents related to the geometry should me more attractive so that students may get more understanding as compared to the other contents like algebra and set etc.
7. Attention should be paid for making the diagrams into the classrooms and questions should be included into the contents related to the diagrams so that students may get skill of art as well.

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