

**Pakistan Mathematical Society
Newsletter**

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EDITORIAL

Recently there has been a mushrooming of centres of excellence in mathematics and allied sciences. Unfortunately none of the newly established centres is self-sufficient in its faculty to conduct advanced studies and research. There is an appalling dearth of qualified mathematicians in Pakistan. Even the few mathematicians, which we have, are quite scattered and are trying to run their own centres. This approach is not at all conducive for the promotion of research and advanced studies in mathematics. Past experience makes it amply clear that these centres are not coordinating their efforts to achieve their declared objectives.

Apparently the School of Mathematical Sciences established under Government College University (GCU), Lahore, has been functioning satisfactorily. It is known that the School of Mathematical Sciences is almost staffed by foreign faculty members who are inducted under the Foreign Faculty Hiring Program of Higher Education Commission (HEC). Since the School of Mathematical Sciences (SMS) is still in its infancy, it is not possible to predict its future.

Another centre, called the National Centre for Mathematics (NCM), is also established under GCU, Lahore, by HEC. Until now its objectives seem unclear and its corresponding modus operandi is undefined. What is the rationale of establishing two centres of excellence under GCU, Lahore, when GCU does not have qualified faculty even for one centre is best known to those? It will probably be more beneficial for the growth of mathematics if SMS and NCM are merged together and consequently their efforts are coordinated. Indeed our objectives vis-à-vis research and advanced studies shall remain illusive and untenable if we do not get rid of the prevailing cronyism and adhocism.

Editor's Note

The Society's newsletter has been registered with the Centre International del'ISSN, France and it has been allocated ISSN 1816-2215. The full title of the newsletter is Pakistan Mathematical Newsletter. The abbreviated key title will be: Pak Math Soc Newsl. The current newsletter is the 12th newsletter and accordingly it has been allocated the following description: Issue # 2, Vol # 4, 2005. Four issues per year of the newsletter are published in January, April, July and October.

Reader's are invited to send their reports, comments and/or articles for inclusion in the newsletter at the following address: Information Secretary, Pakistan Mathematical Society, Department of Mathematics, Quaid-i-Azam University, Islamabad, Pakistan.

STATE OF MATHEMATICS IN PAKISTAN

Professor Dr B.A.Salemi

IT is a matter of common knowledge that mathematics is the core subject for the advancement of science and technology; and hence its appropriate nurturing is the joint responsibility of scientists, mathematicians and technologists. To develop analytical thinking among the young people, mathematics has always been made a compulsory component of the curriculum for all students up to the end of their schooling all over the globe. This single fact is sufficient to demonstrate the indispensability of mathematics for the promotion of rational thinking, development of scientific attitude and technological advancement.

A cursory view of the education in Pakistan will convince one that the situation in regard to the promotion of mathematics is indeed deplorable and needs immediate remedial measures. To begin with, we give an overview of the prevailing state of mathematics education in our institutions. Undoubtedly the pivotal role in education is played by the teacher, who is apparently quite disgruntled with his present emoluments and working conditions. Consequently he has lost his interest in education and has become devoid of professional commitment. He is constantly grumbling about his working conditions, social status and other facilities. Usually he is running after trivial assignments to make both ends meet. That is why he cannot exhibit professional devotion and academically helpful attitude towards his studies. Indubitably he can be restored in his professional commitment by allowing him better fiscal terms and better working environments. To provide him stimulation and to make him aware of his role in the national development, he should be provided proper status and the appropriate opportunities for self-development to enable him to regain his lost fervor.

Text book is the second most important item in the education process. Unfortunately this item has been hopelessly ignored by our educational planners. Most of the junk material available in the market is, in fact, sub-standard and hence is useless. Therefore, the labour invested by students in learning from such textbooks is sheer wastage of time and money.

Curriculum is the third most important segment of the education system. It is indeed painful to know that the syllabi are usually designed by those who have authored some extremely low quality books. Therefore the curriculum is based on the material which is included in the books authored by the so called specialists. This is indeed a condemnable approach in which national interest is sacrificed at the altar of personal interests. Needless to say that utmost care must be exercised in the choice of experts who design the syllabi and the experts who author books. To remedy these lacunae, it is suggested that right type of experts should be selected to prepare modernized syllabi to improve the lot of mathematics. Furthermore, to give an orientation to teachers in modern syllabi, refresher courses and workshops conducted by experts should be organized frequently. It is also proposed that a carefully selected team of specialists be assigned the responsibility of writing, reviewing and producing, textbooks. Since the man behind the gun is more important than the gun itself, it is, therefore, strongly recommended that the utmost

caution be exercised in the choice of experts to bring about overall revolution in our mathematics education.

Last, but not of least importance, part of education system is the prevalent mode of examinations meant to assess the knowledge and competence of students. The examination system in vogue embodies plenty of snags but the most prominent one is the style of setting question papers in which, only the students' cramming power and not his intelligence, is judged. It is perhaps better to change from the annual system to the semester system because the latter does not let the students become slack but rather keeps them vigilant throughout their studies. In enforcing this system of examination, the greatest hurdle is our present socio-political culture. It is really not easy to resist the political pressure for indulging in wrong doings and hence it requires critical thinking before the changeover can be instituted.

6th NATIONAL SEMINAR: FOUR-YEAR BS PROGRAMME

THE Pakistan Mathematical Society holds four national seminars on mathematics annually. These seminars form part of the activities, which the PakMS, formed in 2001, organizes to help improve the state of mathematics education in the country. The Pakistan Science Foundation is supporting the PakMS efforts in organizing the national seminars. The sixth national seminar was organized at the Allama Iqbal Open University, Islamabad.

Professor B.A.Saleemi, a well-known academic of national stature, was the speaker at the sixth national seminar on mathematics. He is the current President of the Society and Professor and Dean at the Air University, Islamabad.

There is a need to open the four-year Bachelor Degree Programme for discussion at the national level, said Professor B.A.Saleemi. He said that HEC should recognize that the change from a two to four-year degree programme is a paradigm change and it requires a comprehensive plan for its gradual implementation.

Professor Saleemi said that the programme will affect a wide range of people and therefore there will be academic, economic and social consequences - repercussions that should be thought over properly. The shift from the old system of two-year degree programme cannot be changed overnight, he added.

There are insufficient numbers of adequately qualified teachers who are readily available to adapt to the new four-year programme. Besides, for such a programme, a requisite infrastructure has to be created before its implementation.

The training of teachers will take effort and time before they can be ready to take up the task of teaching the new four-year syllabus. The fee structure also has to be changed, as it

will put extra financial burden of another two years on the parents, he emphasized.

He also reiterated the importance of picking the right people for developing the four-year degree programme. Professor Saleemi said that the curriculum for the new degree programme has to be created by carefully selected experts.

Professor Saleemi highlighted the shortcomings of the programme if created and implemented without considering all its aspects. At the end of the seminar, the resolution that HEC should consult the Pakistan Mathematical Society before developing a comprehensive four-year degree programme was adopted.

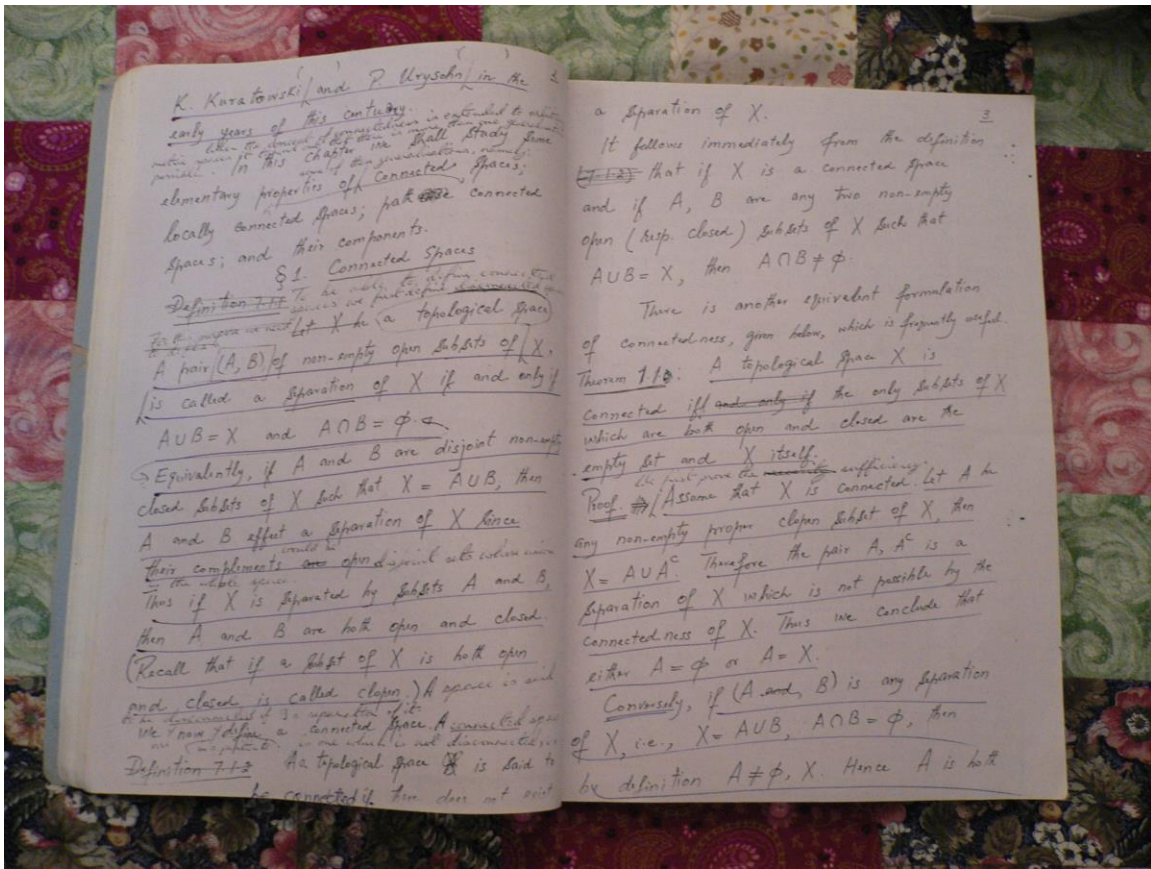
A MANUSCRIPT UNPUBLISHED

Professor Dr Qaiser Mushtaq

DR. NOOR MUHAMMAD breathed his last on 13th April 2004. He was born on 15th April 1951 in Haripur and earned his first degree from the University of Peshawar in 1971 with mathematics and physics as his major subjects. He obtained his masters degree in mathematics in 1973 from Quaid-i-Azam University, Islamabad. He worked for his PhD from 1979-83 at Moscow State University, Russia. His main area of research was a branch of Functional Analysis, namely, C^* -Algebras.

Out of his PhD thesis, he produced a number of research papers on elliptic pseudo-differential operators over C^* -Algebras for compact manifolds. During his stay at Abdus Salam International Centre for Theoretical Physics, Trieste, Italy, as a postdoctoral fellow, he also worked on P-Commutative Topological Algebras. One such work was in collaboration with the late Professor A.B. Thaheem and it is reproduced in the book "Symmetric Topological Algebras and Applications" by Maria Frgouloupoulou, University of Munster, Germany. He had also published papers on topics in approximation theory, derivation on topological algebras and multipliers of topological algebras. Dr. Noor Muhammad produced 20 M.Phil. students since his PhD in 1983. Functional Analysis depends heavily upon topology, especially the branch of Functional Analysis that Dr Noor Muhammad specialized in. His lectures notes on a first course on functional analysis, a copy of which is still available, are topological based.

On my return from Brunei Darussalam in February 1999, he as one of the pure mathematicians in the department developed a closer relationship with me as a colleague. He was writing a book on topology. Of and on he used to talk about it during our informal but regular meetings in the Tea Club and tell us how he had worked on it on his own and that he did not want to publish it in co-authorship with anyone. The manuscript stemmed basically from his lectures notes. He used to tell us that he would welcome suggestions. On a number of occasions, he wanted me to look at his manuscript for editing.



He was very concerned about certain malpractices and under-the-counter academic dealings going on in the department. When I took over as Chairman of the department in January 2002, he joined me wholeheartedly in bringing about academic reforms. The majority in the department supported these reforms but those who lost monopoly over the department and whose interests were at stake opposed them. The departmental meetings, which were as frequent as at least two per month, became battlefields, especially in the last few months of my tenure.

Unfortunately, that was the time when Dr Noor Muhammad, was diagnosed with heart ailment. Soon after, he had heart surgery, which he barely survived. His friends in the department advised him to take at least a semester off. I managed to arrange a substitute, namely Dr Akbar Azam. He was the sole Functional Analyst available in Islamabad and was kind enough to accept the responsibility and help the department as a visiting lecturer.

After about a semester's respite, Dr Noor Muhammad restarted lecturing in the department. He regularly attended the meetings although they were tension causing for all of us and more so for a heart patient like Dr Noor Muhammad. I remember he was very tense in the PhD Committee Meeting that he attended one day before he passed away. Dr Noor Muhammad could not take the pressure any more and asked for leave half way through. Next morning, I heard the sad news of his death.

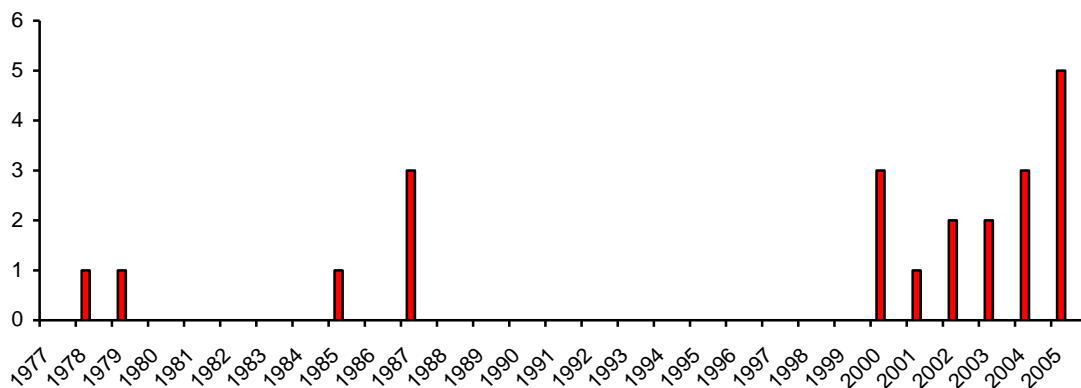
He could not live even a couple of weeks more to marry off his daughter, enjoy driving in his newly bought Toyota car, and publish his book on topology. His untimely death has devoid the Mathematics Department, Quaid-i-Azam University, of the sole Functional Analyst. I hope that his daughter, who is about to finish her M.Sc. in mathematics, will one day publish her father's book.

HISTORY OF MATHEMATICS CONFRENCES IN PAKISTAN

Professor Dr Qaiser Mushtaq

RESEARCH is a global activity. Our researchers do not get sufficient opportunities on a regular basis whereby they can interact with researchers from mathematically developed countries. Thus they work virtually in isolation. Realizing this need, the Pakistan Mathematical Society committed itself to organizing international conferences regularly every year. It has thus organized the series of the 1st, 2nd, 3rd, 4th and 5th Pure Mathematics Conferences in 2000, 2001, 2002, 2003 and 2004. It will eventually bring about a qualitative change in the mathematical research activity in Pakistan and inspire our young researchers for research.

It is indeed pleasing to place on record that the series of Pure Mathematics Conferences have gained a momentum, which with the passage of time has grown. In the past six years mathematical activities have increased in Pakistan. The following graph depicts the frequency with which conferences of national and international stature have been taking place in Pakistan since 1977. It shows that after a gap of about twelve years, since 2000 when the series of International Pure Mathematics Conferences began, the number of conferences per year has increased.



PhD PROGRAMME IN PAKISTAN

Professor Dr Qaiser Mushtaq

IN a bid to produce more doctorates in all disciplines of science, social science and art, the Higher Education Commission launched an intensive programme last year in the public sector universities in a bid to produce more doctorates. Some 5,000 candidates have been enrolled as PhD scholars in various institutions since the programme began in 2004. In Quaid-i-Azam University alone, 56 scholars are currently studying for PhD degree in mathematics.

A deceptively long list of PhD experts with many inaccuracies of names has been displayed on the web page of HEC. One such list concerns mathematics and statistics. The list contains 82 names in total. Excluding the repetitions, statisticians and those who are at the moment abroad, the total number of experts in mathematics in Pakistan is 53, of which 34 are applied mathematicians, 19 are pure mathematicians, and of these only 5 have produced doctorates in Pakistan since 1947.

The first PhD in mathematics was produced by Professor Q.K.Ghori in 1971 at Quaid-i-Azam University. The university, which was established in 1967, took the leading role in producing PhD in mathematics. It has so far produced 35 PhDs in mathematics. The theses at Quaid-i-Azam University as per rules were of international standard because they are all refereed from three foreign external examiners, although it is a different matter that the standard is going down due to the fact that these theses are now sent to mediocre experts. Before the HEC had embarked on the programme of producing doctorates in mathematics locally, it should have looked into the question why only about half a dozen experts produced doctorates keeping in mind that there was previously no monetary incentive attached to the production of a doctorate.

They way students are selected for the scholarship for doing PhD is defective. For instance, the non-subject specific outline of the test does not evaluate the true worth of candidates in the area of doctoral research. Also a race has began amongst lecturers to act as supervisors for PhD students because of the monetary benefits attached with it. There are supervisors who are terribly weak in research and lack adequate experience in guiding even MPhil dissertations. It also has a political dimension. Faculty members take advantage of these students and instead of guiding them towards their research, they use them as a political weapon.

A lecturer who could not supervise one PhD for a long time is now supervising 8 to 10 students. At QAU alone, 56 scholars are enrolled for PhD in mathematics. Most of the students registered are unhappy with the supervisors. Many supervisors have weakened the evaluation system by including the names of foreign referees who are not so experienced and are from countries which are not academically developed. The programme is likely to backlash due to incompetent and fraudulent supervisors.

The following is the list provided by the HEC of 53 experts in mathematics who are considered capable of supervising scholars for PhD in mathematics.

Designation-wise PhD Supervisors

Professors	14
Foreign Professors	13
Pakistani Foreign Professors	03
Associate Professors	09
Assistant Professors	10
Lecturers	03
Total	52

Organization

Number of PhD Supervisors

Karakurm International University	01
School of Mathematical Sciences	11
Lahore University of Management Sciences	06
Baluchistan University of Information Technology & Management Sciences	01
National University of Science & Technology	04
COMSATS' Institute of Information Technology	05
Quaid-i-Azam University	07
Ghulam Ishaq Khan Institute	03
Punjab University	02
Bahauddin Zakaryia University	02
Karachi University	01
Urdu University	01
University of Engineering and Technology	01
Islamia University of Bahawalpur	02
Government College University	01
Malakand University	01
NCBAE	01
Government Intermediate College	01
Jamia Mohammad Sharif	01
Total	53

CONFERENCES/EVENTS

Following the happy tradition set by PakMS, many other organizations are now actively engaged in organizing international conferences and national seminars. To keep the members of PMS well informed about the latest mathematical activities, we enlist below some of the prominent events which are likely to occur in the near future.

LUMS International Mathematical Conference

LUMS, in collaboration with the School of Mathematical Sciences, is organizing an International Mathematics Conference from Nov 27-30, 2005, at Lahore. For further information, visit the website

<http://www.lums.edu.pk>

6th International Pure Mathematics Conference 2005

Pakistan Mathematical society has decided to hold the 6th International Pure Mathematics Conference 2005 from 20-22 August 2005 in the Best Western Hotel, Islamabad. For further information visit the following website www.pmc.org.pk

First Kashmir International Conference

The First International Conference on Science will be organized at Azad Jammu & Kashmir University from 23-24, September 2005. To get more information, the would-be participants are requested to visit www.ajku.edu.pk