

Features

Professor A. W. Mailvaganam Memorial Lecture — 2001

Mailvaganam and his place in the sphere of education

By Professor P. P. G. L. Siriwardene

I came to first know Professor Mailvaganam in 1942 when I entered the University of Ceylon in its inaugural year when the University College which prepared for University of London degrees now had the status to award its own degrees as a new university. My subjects in my first year included physics and this enabled me to have the benefit of this excellent teacher. Professor Mailvaganam was of impressive stature with qualities of leadership and would inspire his students and colleagues.

He was an excellent teacher whose measured delivery and pace of teaching and clarity of thought and expression helped immensely to be understood by his students. He would enter the Physics Lecture Theatre, the very place we are present now, for which we should be very thankful to the organisers, ideally constructed for teaching with its multi-tiered student seating, ample table space for teacher demonstrations and sliding blackboards. Professor Mailvaganam would walk in to this theatre without a note in his hand and speak with authority on the subject a manner so necessary for students to accept without doubt what was told, and this was certainly an important characteristic of a good teacher.

Professor Mailvaganam had in his style short sentences and pauses and his own characteristic twist of his neck. We understood he had picked up this mannerism from his Cambridge days at the famous Cavendish and we suspected that it attributed to Lord Rutherford the renowned nuclear physicist "at the feet" of whom Professor Mailvaganam was always proud to say he had worked. The twist of the neck did infect Dr. Mutucumarana a young lecturer at that time who took our lectures in modern physics. Professor Mailvaganam was engaged in cosmic ray research and the large magnet of the Physics Department intrigued us as students. We hoped we would have a chance to see it. The cloud chamber experiments tracking cosmic rays was also associated with by other academic staff in the department such as Drs. Appapillai, Dahanayake and others. Professor Mailvaganam had proceeded to Cambridge University on a Government scholarship for the PhD and returned to the Ceylon University College in 1937.

In my first year I did meet Professor Mailvaganam for the first time when during a physics practical he called me up and inquired whether I was applying "to do" physics honours. Dr. R. L. Hayman - my physics teacher at St. Thomas's College had spoken about me and I felt very happy about this. I had however decided "to do" chemistry. However I did Physics not only in my first year but also for the degree as my subsidiary subject and came in close contact with the Physics Department for much more time. There were Dr. Appapillai and Mr. S. P. Baliga who taught us, the former very sound in his quiet way and Mr. Baliga too with no pun meant, very sound and with his high pitched voice and periodic raised arms as if in surrender! Those were fine days with knowledgeable teachers, helpful and with devoted teaching ability and attitude.

For the lectures P. A. S. Perera who had some isotopic resemblance to the professor but in national dress would set up the demonstrations There were other laboratory staff too. There was

the trusted Jamaluddin who we would often hear the professor call, there was the vitriolic Nagamuttu who found it difficult to fit in and there was the mild P. S. Perera in charge of the workshop and also gave a great deal of help to university sports. I will also always remember the laboratory attendant Girigoris mischievously quiet and strong favourite with students hunting for information.

I remember of course my physics colleagues, M. L. T. Kannangara, Osmund Jayaratne, P. C. B. Fernando, George Dissanaiké and several more.

Professor Mailvaganam was of strong character and held strong views and beliefs. He also had his likes and dislikes. He was helpful to hardworking students and had little time for those shirking responsibility. I remember one of our batchmates, the best we would say out of our lot, losing out not due to anything academic but on a matter of the heart! Professor Mailvaganam believed that a teacher's function is not only to teach but to get the best out of a student's potential.

Professor Mailvaganam was a devout Hindu and very religious. He was a regular worshipper at the Bambalapitiya kovil. He was simple and unassuming and would speak to students and colleagues very informally while yet revealing his strong character and sense of purpose. We would see him walk to the university along Thurstan Road from his Police Park Avenue home when his personal car, a Triumph was not available.

Although a scientist, more so a physicist is not expected to be so, Professor Mailvaganam was very superstitious. He was an eminent scientist blended into culture and religion. I remember his incredible stories especially during 'firewatching' which we had regularly those war years. The university had its precautions including firefighting provision and a senior don would with about eight students stay the night.

The chemistry professor's room was used as the centre. The students had the benefit of listening to senior dons of different faculties. I remember Professors Ludowyke J. L. C. Rodrigo and others and Professor Mailvaganam was one. He would relate his experiences but would also relate some eerie experiences. I shall never forget Santiapillai who came quite late for firewatching nor the brief conversation with the professor. This is what we heard. "Why are you late?" "I had to attend a funeral, Sir" "Did you take a bath?" "No, Sir" "Clear out" and Santiapillai vanished!

I came to know Professor Mailvaganam well since I became head of the chemistry department. There were tensions between physics and chemistry before and these disappeared. Professor Mailvaganam would visit my room for chats and vice versa. We both supported 'science in swabasha'. There were also Drs. Dahanayake, Osmund Jayaratne, A. C. J. Weerakoon and some others too and there were also others in the faculty who opposed it vehemently. Swabasha was seen by us as useful to extract the talent available in the Country. Some would say the schools needed to be developed but could we wait that long? We would have lost large numbers of available talent. The Swabasha supporters emphasized the need for English.

It is over forty years since then and we are still talking of teaching English. Have the schools come up to the standards some wanted? Have our students become bilingual? English is essential in the acquisition of knowledge and communication. Also the swabasha educated I now find are very fluent in the language, they are very confident and capable and those who have had the benefit of English are in useful occupations and important positions. The country has had many useful pronouncements and even policy decisions. We seem to be faltering in planning and implementation. We can only hope that the present systems will help us to overcome those earlier deficiencies. The higher education system has seen changes since Professor Mailvaganam's time and since most of my time. Changes have been quite rapid and will be changing more. We are now living in a time of fast change in a fast developing knowledge world. Technology is developing fast in an increasingly competitive world and a free market economy. Good and better management is becoming more and more essential and the management of change is important.

The interdisciplinary nature of modern learning makes compartmentalised departments such as physics or chemistry irrelevant and many universities have developed interdisciplinary and multidisciplinary schools of learning such as the molecular sciences, the biological sciences or life sciences. The two-tier first degree system too needs review with respect to structure, content, and duration. Universities may consider single tier first degrees progressing from a broad and general education and covering transferable and workplace skills, communications and management skills, project and problem-solving skills to specialisation.

The changing job structure requires a broad range of skills in addition to technical abilities. Training for specific jobs is becoming more difficult and the training must be to make one employable. Knowledge alone is not enough. Knowledge with skills are needed. Higher education systems need to expand with non university higher education institutions incorporated in the system. Many of these non university institutions would be in the private sector relieving the bottle-neck to state-universities admission and reducing state funds. The individual institutes will provide courses of student choice such as in business studies, technological and industry studies, communication technologies, management studies, accountancy, finance and banking, free market economy and national development disciplines, and others. These institutes will need accreditation and may award their own degrees or be affiliated to a university for award of degrees.

The broadening and diversification of higher education have become necessary due to the large numbers with abilities and aspirations seeking it and these numbers will keep on increasing. Continued expansion is needed in higher education's role in human resource development. Society too needs more and better educated people. Education is a great liberator, it is also a great equaliser. It is unfortunate that planning systems are often weak and implementation even weaker. Policy announcements giving high hopes often end in failure and disappointment. Commitment and detailed planning, not least political will, are essential for successful implementation.

The purposes, shape, size and structure of a higher education system are essential factors to be considered, and so also the funding. It is a sad fact that universities have been set up for political expediency with little or no prior study. These institutions meant for higher learning and

scholarship require careful assessment of need resources and indeed their successful continuity, before decisions to set them up are taken. Careful planning is essential but inadequate planning is often the case. Moreover in order to optimise the use of limited resources a planning system for higher education is all the more important.

While universities should have more and more appropriate interdisciplinary and multidisciplinary courses, double (or more) subject degrees should be available. These combinations need not be restricted to, for example, the science based but may include appropriate disciplines in the humanities, social sciences or other. Specialised areas such as the environmental sciences, information and communications technologies would enter such combinations. An engineering degree with economics, a chemistry degree with economics or agriculture with environmental science are other illustrations. Modern learning cannot be compartmentalised. A mishap in education has been the separation of the 'arts' from the 'sciences'.

The student admission system of the future to higher education should be appropriate to a hugely increased and more varied cohort of students being admitted to a large and more diverse higher education system which offers a greatly extended range of courses both full-time and part-time. The increasing complexity of the labour market, with the need for a variety of training courses for mature employees as well will greatly contribute to this wide range of provision. The rapid expansion of student numbers will increase not only the complexity and diversity but also the flexibility of the higher education system. The average age of the students will be higher than at present because continuing education for upgrading those already in employment and for those looking for jobs or changing jobs becomes widespread. There will be interchange between periods in employment and in higher education due to the fast changes in knowledge and technology and changing job structure. These will require universities to get prepared with short courses as updating and refresher courses.

A modular system is appropriate to broaden the scope of training and provide choice. A module is a specific type of learning resource with clear objectives and constant feedback on progress. Modules allow the grouping of related skills into a meaningful course and students and employees can group them to suit their needs. Employees can select particular modules to update their knowledge and skills in the same employment or when changing jobs. Employers can send their employees to follow particular modules when skills need updating or new skills are required. These courses will be fee-paying and a source of income to the university. These course systems work well in industrialised countries but can also help others in their industrial and agricultural development. Agro-based industries and the biotechnologies are becoming increasingly important.

Moreover in a free market economy industrial development, both processing and manufacturing, has to increase or else the services industries alone will only help the more industrially advanced to get more advanced.

The increase in mature students in the universities can have a beneficial effect on student behaviour, commitment and discipline as a major spin-off.

Universities need to pay more attention to the quality of their academic courses and research. Curriculum and course preparation require care and the objectives must be clear. The university itself must be clear in its mission. The practice of individual teachers being solely responsible for courses they conduct is insufficient. So also is it even when a course of study is revised.

The department or school of study, the faculty and the University Senate all have a responsibility. When a university states that standards are maintained or the degrees are of high standard it is quality that we are after. Quality in education must be maintained and quality assessment systems, performance indicators have to be available. The information must be available to the community as well, to parents and students themselves. Transparency in education is necessary.

If education quality suffers, what we call standards suffer and soon a university will not be able to sustain itself. Academics often feel that they are the experts and dislike been told what to do. This is a misinterpretation of academic freedom.

University teachers require periods of updating pedagogy and educational technology both of which are essential components of the teaching-learning process. A highly qualified academic may not necessarily be a good teacher. The quality of the teaching staff is the single most important factor in determining the quality of university teaching and scholarship.

The teaching-learning process is changing fast. The responsibility lies more with the student than before, the teacher being more of a guide and facilitator. The teacher is becoming less of a dispenser of knowledge. The system of "lectures and notes" is getting modified. More self-learning and project work are done. Educational technology plays an increasingly important role.

Staff development is an important function of a university and staff development plans that are regularly updated need to be available. An important factor is the age profile of the teaching staff to ensure a sufficient 'mix' of age. The curriculum is a continuous process and requires constant updating. The rapid changes in knowledge make this necessary with careful identification of what to include and what to discard. Good planning of academic courses becomes even more important than before. Planning would not only require an understanding of the resources available but also of the management of a constantly changing process.

The computer has introduced benefits to the teaching-learning process. Computer -aided instruction and computer-aided learning are available. Computers are helping information statistics and monitoring and evaluation in education. Computers are helping libraries which are becoming increasingly electronic with access to information with remarkable speed.

Universities embrace teaching, learning, scholarship and research. Scholarship is essential and involves the analysis, evaluation and critique of knowledge, the presentation of that knowledge in ways to develop new perspectives, and the extension of knowledge. Research is an extension of knowledge and part of scholarship. University education must rest on the foundation of sound scholarship.

While individual research is highly necessary group research should be encouraged. Group research helps continuity even when a member of the group is no longer available and it helps interdisciplinary and multidisciplinary research which are becoming more widespread and useful. Cross-disciplinary research must be encouraged and this can combine appropriate inputs from various disciplines. Also, interdepartmental and inter university research will enable quicker and even better quality research results and the more efficient use of expensive resources.

The country's research institutes should where appropriate, be part of the research network to prevent duplication of effort and wastage of resources. Time is such a resource, a non-renewable one. Public-private sector research e.g. with business and industry and agriculture is increasing and also helping research funding. Research is becoming more guided and increasingly goal-oriented and becoming less important for personal advancement. Research needs assessment and this should be a basis for research funding. The universities need a review of their research degrees and guidelines to enhance quality and usefulness.

Engineering and science courses include a period of practical training in industry. This helps students to become aware of industry practice and workplace requirements. Universities require formal linkages with industry if such training is to be a regular part of the curriculum. The teaching staff too needs to spend periods with industry. Sri Lanka not being highly industrialised cannot offer a wide range of student or teaching staff placements but agriculture, agrobased industry and the biotechnologies are also available to help countries that are primarily agricultural.

(Continued Tomorrow)
