



## Doing Science on a Small Island State: the Challenges for the University and its Surroundings, and the Role of Xjenza

Alfred J. Vella\*<sup>1</sup>

<sup>1</sup>*Faculty of Science, University of Malta, Msida, Malta*

“We have the honour to submit to the Government of Malta and to the Royal University the Report which we were invited to prepare. The immediate occasion of our appointment was due to the serious and indeed critical state of the finances of the Royal University. There can be no doubt about the accuracy of that description.” (Zarb, 1958).

So begins a 34-page report written by a 5-man commission headed by Sir Hector Hetherington, then Vice Chancellor of the University of Glasgow and Professor of Philosophy, which report is dated 11<sup>th</sup> September 1957. I was 7 then and in ten years’ time I would be about to start my own education at RUM to complete a degree in physics and chemistry.

What has this got to do with the Jubilee Year of Xjenza, you may ask? Let me proceed to read to you some further extracts from the same report and the connection will become clearer.

For context, you will need to remember that at this time, the whole University was sited within this Valletta campus, minus the ground floor, which was being used as a Girls’ Secondary School; courses were offered on a biannual basis and the student body was about 300. University “autonomy” had been declared by the Colonial Government 10 years previously by a statute in 1947. The Evans Building, at the bottom of Merchants Street, was still under construction and the lecture rooms and big laboratories were soon expected to, as the report notes, “afford some valuable relief” to the cramped conditions at the St Paul Street site.

As a side note, I cannot help but tell you that I was a Junior College student at this building during 1966–68: I still recall the anatomy department and its cadaver refrigerators in the basement, packed with white to greenish human remains reeking of formaldehyde. This provided a constant opportunity for bravery and

bravado to those of us who dared peep inside the fridges or on the chopping tables.

The construction of Evans Laboratories was seen by Hetherington et al. as making it more difficult for the Government to consider building a larger structure for the University, due to the spend on the Evans. Still, they write that “we are certain that, if the University develops as we hope, the accommodation plans now in mind will break down within a very few years. . . and a good deal of money will have been wasted.” This prediction came to pass rather quickly since the foundation stone for a new University was laid at Tal-Qroqq almost exactly 7 years later on 22<sup>nd</sup> September 1964, when independent Malta was only one-day old, which is 52 years and 2 days ago.

This is what the Commission had to say about the state of Science at the University, and by implication, in Malta as whole:

“It is difficult to describe the present position of science in the University: one can, in effect, say that judged by the standards of most other Universities, science has hardly made more than a beginning. Both in equipment and in the depth of its scientific courses, the University seems to offer little more than is offered by an ordinary secondary school in the United Kingdom. Mathematics gives promise of development. But apart from that, the main present business of the Faculty of Science is to provide a certain amount of basic science preparatory to other degrees. For example, pre-medical sciences (chemistry, physics and biology) are taken in the University. Even there, it seems to us doubtful whether the standard is sufficiently high to form a satisfactory foundation for the much more firmly organized work of the clinical departments. Hence the strengthening of the Faculty of Science appears to us to be one of the main and first concerns of the University of Malta. . . it is clear that

\*Correspondence to: Alfred J. Vella (alfred.j.vella@um.edu.mt)

it cannot achieve (this aim) unless it is staffed by professors and lecturers who themselves are, fundamentally, trained scientists.”

I joined the BSc degree course in 1968: there were 12 of us then and this was (if I recall correctly) the third group that had taken science at University, not as a pre-requisite to medicine or architecture but as an end unto itself. The teaching staff recently employed by Rector Borg Costanzi, were either British academics or freshly graduated Maltese holders of PhD degrees obtained from top UK institutions. All our tutors were trained scientists, not medics or other professionals doing their best to teach mathematics or physics or chemistry without the benefit of a proper grounding in the disciplines. In the short span of 10 years, the University, and indeed, the island nation had turned a page and scientific subjects were finally being studied and taught seriously. This was mainly for purposes such as secondary school teaching (a hugely important undertaking), working in the hospital laboratories or customs, or for enterprises involved in milk, wine, beer or food making or in drinking water production and so on. Mind you, this was not quite “doing science” as in blue sky researching at the frontiers of the disciplines, but it was providing for Malta, a crucially important corps of competent individuals providing services without which a modern, technically sophisticated nation was never going to make it. Incidentally, the faculty of engineering was established at about this time: this was another important development necessary for the building of a modern society, and it also helped establish the discipline of engineering locally on a scientific, mathematically sound basis.

The teaching and practice of science in Malta suffered a setback, resulting from the ill-conceived suppression of the Faculty of Science (together with that of Arts and Theology) during 1980 to 1987, although some science teaching survived within medicine, engineering and education faculties. The Faculty was fully restored shortly after, now including the new disciplines of computing and IT and with this rebirth, a new development materialized, which may not have been noticed and is rarely, if ever, commented upon: namely, the faculty was re-established with an almost all-Maltese, mostly young, teaching complement who were all scientists!

Xjenza was born from amongst this group of University individuals and their freshly generated cohorts of BSc, MSc and other science-related graduates, nearly all of whom were either in higher studies or busy populating the job market. In the mid 90's, doctoral candidates pursuing work here were still rare on the ground but no longer totally absent.

Serious research in science could only take root in Malta when the University began churning out BSc and

MSc graduates in sufficient numbers that at least a few of them would not immediately end up in employment with local manufacturing, industries, the teaching profession or the scientific branches of the civil service or local authorities. Instead they stayed on at the University as research assistants or in doctoral programmes. The numbers involved could not be very large because only about 12% of total undergraduate students follow science, technology, engineering or mathematics (STEM subjects) and most of these are quickly absorbed by employment opportunities where science is a requirement or an added benefit.

The number of students that remain to continue studying and researching as postgraduates are now finally increasing, as they also find another crucial factor, financial support, mainly via government scholarship money that until recently was largely absent. Much as the stipend system was helpful in promoting general tertiary education in Malta, it unwittingly created an anomalous situation where students who may have spent a period dedicated to postgraduate science research at the University were not only not given a stipend, but actually charged a fee for staying on to do this work. So, until very recently, the odds were still stacked against the development of a research culture on the island insofar as the University, a principal actor, was concerned.

Finally we have turned another important page, this time thanks to EU funds, which, through the various scholarship schemes, are channelled towards the support of research activity at the University and in other entities in Malta. This has allowed the indigenous research effort in the physical, biological and engineering sciences to take off within several faculties including science, medicine, dentistry, engineering, built environment and others. It has also helped quell the flow of UM bachelor and master graduates to foreign universities in search of doctoral qualifications from abroad. We also now see inflows of students from foreign institutions looking for research opportunities locally. The Science in the City activity is an excellent occasion to showcase the range and depth of scientific research being pursued locally. What we desperately need is to enthuse as many of our young folk as possible, and to find effective ways and means of propelling them towards science and technology. Science in the City is of course mainly about that. As is the other great experiment happening at Kalkara: namely, Esplora, the interactive science centre, the brainchild of the Malta Council of Science and Technology. May this initiative fire the imagination of as many young minds as possible, drawing them to the marvels of science!

Xjenza has been on the scene during this interesting yet tumultuous period of science in Malta and in my view, it has been an important presence. Even though

seasoned local scientists would tend to turn to the principal high impact journals for publication of their work, Xjenza permits outlets for expression of good research outcomes from early stage researchers. It represents the first credible and durable publication platform in which serious science can find peer-reviewed communication, and especially science which is principally of local interest. Certain papers appearing in Xjenza may possibly be of marginal interest to the international scene, but these same could be of considerable interest locally. For this reason alone, Xjenza deserves to remain per-

manently on the scene. May the journal serve the local scientific community for many years to come: indeed may it become an important player not only in the dissemination of scientific information by open access, but perhaps even venture into the provision of open science, thus serving as a role model for this practice in the region.

### References

Zarb, S. M. (1958). Editorial. *Scientia*, 24(1), 3–10.