

Maximising research potential

By IAN JEROME LEONG

WITH more than 300 published scientific papers to his name, Albert Einstein is not only regarded as one of the greatest geniuses to have contributed to the knowledge of science but his findings continue to be the foundations for much modern research.

Among his most famous quotes is, "Wisdom is not a product of schooling but of the lifelong attempt to acquire it".

It is for this ongoing quest of wisdom that universities the world over invest a substantial amount of time, energy and resources into their research activities.

In October last year, however, the Malaysian Government announced as part of Budget 2016 a RM2.4bil reduction in annual allocations for institutions of higher learning (from RM15.78bil last year to RM13.37bil this year), signalling a massive blow to the administrative functionalities and, more importantly, research capabilities of local public universities.

Upon the announcement, student groups and educators were nervous about the move as it could adversely impact student and academic faculty development, raise tuition fees, impede universities' competitiveness on the global stage and in the long run thwart quality research outcomes.

Value of imperative study

Prof Azirah Hashim, executive director of the Asia-Europe Institute at University of Malaya, says, "The ethos of universities is to be at the forefront of research, teaching, human resource, talent production and problem-solving."

Very often, though, quality research outcomes go hand in hand with having a sufficient budget to fund extensive research - one of the deciding factors that separate distinguished universities from the rest.

This phenomenon can be represented in a circular chain of events where significant research findings will lead to international recognition, more lucrative grants and funds, the ability to improve university facilities and education programmes, more students and academicians, and resources to spearhead more compelling research activities.

But besides the monetary aspect, good research contributes ideas and solutions at the societal level for the betterment



All research, even blue skies, is important for the betterment of society, so universities should not let a lack of funding discourage progress in higher education.

of humankind.

According to Prof Azirah, producing research that is of high quality and integrity as well as better understanding of society's needs and finding suitable solutions are important in a globalised and competitive world.

"It is the task of researchers and universities to develop research that is important to society, justify this importance to funding committees and ensure that money is spent on projects that are truly beneficial to the society," says Prof Azirah.

Prof Bujang B. K. Huat, dean of the School of Graduate Studies at Universiti Putra Malaysia, agrees with this statement and says quality research will help build society's trust and

confidence in local higher education institutions.

"Research is the academic arm for universities to reach out to society and, in a way, a manifestation of integrity.

"The public expects universities to contribute in many aspects and be the problem solvers to the nation's economic, cultural and social crises," says Prof Bujang.

Prof Graham Kendall, vice provost (research and knowledge transfer) at The University of Nottingham Malaysia Campus, says intellectual property by universities will help the local and

national economy, paving the way for job creation through mechanisms such as spin-out companies.

James Then Khong Lek, managing director of CryoCord, a stem cell bank that has a subsidiary collaborating with local universities in stem cell research for therapy in non-communicable diseases, says, "I am particularly concerned when research funds are cut as good research is the foundation for the country's future.

"Researchers who face limited funding often need to share resources, lengthen the research timeframe or cut down on their scope of study," says Then.

Sustainable procedures

Prof Bujang believes universities must not concentrate too much on the negative effects of a budget cut nor allow it to deter them from making progress in higher education but instead act upon contingency plans to achieve set research goals and optimise productivity while operating on minimal funds.

"What the budget cut means for the wider university community is that we must look upon such challenges as a test of our resilience in finding other solutions," he says.

Prof Azirah echoes Prof Bujang's view and says, "Universities must not be reliant on a single source of

Contesting for funds

AMONG the biggest challenges researchers face when attaining sufficient research funding is convincing potential investors that their studies will indeed be beneficial to society.

But it is only through adequate funding that researchers can bring forth discoveries in their respective research fields.

This has been a persistent problem throughout history as in the case of Alexander Graham Bell in the 1870s, who resorted to borrowing money from the wealthy father of one of his students at Boston University as well as his assistant Thomas Watson to develop his harmonic telegraph.

In current times, the problem lies particularly true for blue-skies research, where the results of studies are not immediately apparent, when the research is purely scientifically and curiosity driven, or when the research does not have a clear goal.

Apart from factors that include timeliness, discussion opportunity or the failure to present research ideas effectively, if the ambitions of the study seem too grand or if the ideas seem too unconventional, there is a strong chance that the research proposal will be scrapped.

As research proposals are expected to specify definitive goals, there is a possibility that companies and funding bodies accept proposals that are deemed safe or likely to yield short-term results, and perhaps favour mediocrity.

Thankfully, blue-sky research is still ongoing and there are companies and funders willing to provide monetary aid to less popular research ideas, be it for beneficial returns in the long run or as a form of corporate responsibility.

However, not only must companies and funders continue to support and be open to such research but more grants are needed to enable the possibility of genuine scientific leaps.

funding as there are many grant-giving bodies prepared to fund worthwhile research.

"Budget cuts encourage researchers and universities to look for other sources of funding, be it the private sector, foreign countries or international organisations, and engage more in a competitive and transparent research funding environment," says Prof Azirah.



Funding cuts may very well lead to a more competitive research environment.

Stepping up amid adversity

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Collaborations between universities and external funders will create a win-win situation for all who are involved in the partnership.

According to Then, private companies and small medium enterprises are not well equipped and do not possess the expertise of universities.

He says, "Collaborations are the natural pathways for private companies to advance and be competitive, enabling access to advanced technology and technical know-how."

Current undertakings

Fortunately, public and private universities in Malaysia are adjusting to the cutback of funds.

These efforts include synchronising internal operations and income-generating entities to strengthen universities' financial systems, motivating and encouraging creativity among researchers, as well as intensifying involvement in both local and international grant processes, collaborations and environments.

Although the budget cut has no direct effect on private universities, Prof Kendall says how many companies operate and private higher learning institutions are no different.

He adds that though competitive, opportunities for government research grants are available, motivating private universities to increase the number and quality of research proposals as having these additional funds will make a difference.

"We are always seeking to diversify our income streams as we need to provide value for money as well as a good experience for anybody who wishes to invest in the

university - whether they are students investing in their future, or governments and businesses investing in research and development," says Prof Kendall.

Forthcoming possibilities

While a reduction in funds can weaken the growth of Malaysian research, there may be a reason to be optimistic about the health of higher education in Malaysia and its research findings in the long run.

Prof Bujang believes universities of the 21st century that claim to be among global educational players will strengthen internal income generation capabilities and not be pessimistic in conforming or adapting to new rules and policies, be it due to internal or external factors.

Prof Azirah says the budget cut may very well force universities and researchers to be more competitive and those who are willing to step up to the challenge should at the end find their efforts rewarded in terms of higher quality output.

She also believes the more universities are able to diversify in their grants and funding, the broader the research horizons, possibly expanding to include more internationally focused research ventures.

Five months into the year, it is still too soon to conclude if the overall reduction in funding has affected the general research quality of universities in Malaysia.

Nonetheless, universities that place high importance on research will be able to find new pathways and strategies to overcome such challenges as it is part of their culture and mission to contribute to society.