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GLOBAL CHALLENGE FOR UNIVERSITY RESEARCH AND PH.D'S

WITH increasing globalisation of economy driven society, universities across the world are under increasing pressure to meet diverse and conflicting demands. India can boast of a huge base of educational system capable of producing any number of trained personnel in a short time with insufficient infrastructural facilities. This has been amply shown by the number of graduates and postgraduates in science, technology and agriculture produced in the last two decades. Private colleges and universities have taken the role of knowledge producers of modern economy, more often than not compromising with quality. But universities mostly funded by central and state governments have been caught in a dilemma : how to impart employment worthy education with short term goals and at the same time, remain as sources of knowledge in the long term.

University research, mostly carried out by Ph.D. research fellows under faculty supervision, similarly is attempting to meet the needs of world economy while maintaining an "international standard". This puts us to face a stark question : Do we need and should we produce so many Ph.D's on so many topics as presently our Universities are producing ? Indeed, a correspondent has raised this very question in this issue. Do our Ph.Ds meet the expectations of potential employers? Can they think and take up a challenging problem independently as is required by an R & D organisation, mission oriented project of a public institution or in an university ? Or simply they want a permanent job in a government /autonomous institution or university to produce more Ph.DS ? Again the debate on basic vs. applied research, relevance to the country or its people, or future potential for universal applicability or simply "basic" research for the shake of new knowledge is not new. This question has been raised many times by many academic bodies of a number of countries including India. Decades ago, scientists were divided, as are now, in their strong

personal views. I can recall such views once appearing on the pages of Nature/Science where Nobel laureate Wilkins of double helix fame (we forget to mention Wilkins shadowed by Watson and Crick) opined that scientists should be given sufficient grant to do good science and forget about what they are doing so long they do good science. In other words, they may live in an ivory tower completely isolated from society and people. They may not even ponder about future use and possible misuse of their discovery or knowledge generated. On the other hand, equally great scientists like Jacques Monod, a Nobel laureate of operon model fame, had an opposite view. In his view, scientists should also have society consciousness, awareness of happenings around them and a sense of social responsibility.

Here comes the question of topics chosen for Ph.D. research. Granted that science is universal and any new findings add to our knowledge. But any new information gathered even by painstaking hard work may not be useful or necessary even for knowledge sake. For example, one may count all the hairs on a bear by dilligent painstaking labour. But this new knowledge is of no value either as 'basic' or as applied research. Again I remember one correspondence on pages of science. Here a not so famous scientist questioned the necessity of a Ph.D. research by a woman scientist of U.S.A. on 'Carbohydrate metabolism in the alimentary canal of South African cockroaches." The correspondent knew this researcher personally and wrote against relevance of such type of Ph.D. study, adding further that the researcher's own child suffered from malnutrition almost amounting to child abuse while the mother scientist was studying cockroach nutrition. The point is that even if this research was not carried out at all, the world science will be where it is. Even if this knowledge is called 'basic' as it has no immediate applicability, it is not the base like that of a tree, a structure or a theory on which elaborate superstructure can be built and added on for years to come

like an evergrowing tree. The result : since it is neither fundamental nor applied, this type of so-called "basic" equates to "useless". We know what is true for American cockroaches is mostly true for also South African cockroaches. Can we not raise for most Ph.D. students a slogan like "think globally but act locally" to select your Ph.D. programme similar to they say for environment protection. What the international employers (for a Post-doc/Associate/Expert) look for is the expertise in current techniques and tools employed to tackle a problem, not so much to the problem on which the candidate worked for Ph.D.

Now, majority of scientists with Ph.D. can not go abroad or get an academic appointment or a lucrative employment in R & D of private organisation. The next best thing is teaching jobs in schools and colleges. The market here is also not so prospective for all Ph.D.s as supply is more than demand. Leaving aside this monetary aspect, the question is then : is a Ph.D. a better teacher than a non-Ph.D. It is expected that during Ph.D. research grinding, the candidate has been conversant with searching current literature, keep track of new discoveries or trends through library and internet search, by attending seminars / workshop etc. When they join colleges as teachers, it is naturally

expected that they will keep the habit of keeping them afresh and upto-date with knowledge in his subject of teaching so that he can inspire at least some students to take up science as a career in future. Lamentably, however, most Ph.D. teachers fall prey to the tradition of giving the same course year after year and confining themselves in the syllabus, exam and private tuition. Thus, a college teacher with a Ph.D. is not necessarily a better teacher than other without a Ph.D. Again, some are not sincere, as they have always the sense of pride and deprivation as they think they should have had landed in a better job like their lucky friends.

Can a developing country like India can afford to spend so much public money and valuable formative 5-8 years of educated youth on such Ph.D. research ? Or is it a luxury or indulgence government or the candidates' families can afford in such a competitive world ? And lastly, the unfortunate unemployed youth with Ph.D.s describe their plight as the following : Junior Fellow → Senior Fellow → Post-doctoral Fellow → Frustrated Fellow → Poor Fellow.

It is now really time to rethink about our Ph.D. programmes in universities and recognised institutions. □

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