



Invited Article

REGULATING INDUSTRY PROJECTS OF M. PHARM STUDENTS- NEED OF THE HOUR

Interaction of industries with knowledge base of academic science is important for development of advancement of technology. But what is currently lacking is the willingness from both sides to understand and respect each other's core objectives. Academia need to appoint man-power on war footing that could take Collaborative modes like Consultancy, Contract research, Public – private partnerships in a big way especially in their institutions. Academia need to educate highly trained, independent scientists and to carefully align and integrate their education with ground breaking fundamental research. Industry on the other hand should support the research in the academic institutions through innovation and practical use of advanced technologies. Unfortunately, instead of identifying price-less talent in the industry and making efforts in getting them into academia, the colleges have always believed in utilizing the industry facility at their cost and never ever keen in drawing the ideas and innovations into the academic departments. It is academia's failure in recognizing and accommodating the industry expertise that is preventing the growth of advances in knowledge base as well as technology know how. Constant friction in personalities and also the ideas is bringing no benefits to either side although academia is losing heavily in the process.

It is often understood in academia that industry collaboration is limited to student being deputed to industry and does his/her project work with assistance from a student peer at the industry. Neither the academic guide nor the evaluators appointed by the university is at clear understanding with regard to the performance/work of the student carried out in the industry. Students often fail to explain with clarity with regard to work carried out by them for a period of one year in the industry. Majority of the questions during the examinations elicits answers like ... "cannot be disclosed", "industry secret", "work awaiting patent" etc. which is not acceptable as it defies the evaluation process of the university evaluation system. The embarrassment experienced by the examiners receiving such replies from the candidates has been communicated to the university on several occasions. There are oral directives in such cases to withhold and not accept the thesis, but such actions have not been initiated due to absence of written directives from the universities. Can the evaluation system be complete without proper description of work?

On the contrary industry always feels that they are doing more than what is expected and could have been done in the institutions. The candidate is made to run pillar to post on the pretext of educating/training and tuning them according to the needs of the industry. The situation is nothing more than exploitation of human resources and can raise the eye brows of the Human Rights Commission. It should be understood here that the academia on the pretext of covering-up their weakness or their deficiencies like inability to provide intellectual guideship and basic infrastructure to perform research would have taken the convenience of directing their student to carry out research project in the industry. Adding to the woes of the candidates there is absolutely no guidance from the academia about the actual research expectation that the industry is required to provide the candidate. Industry also has the feeling that the candidates are just sent to industry as no facilities exist in the academia for carrying out even basic research. Friction in the matter of the abilities of experts on either sides dampens the progress of work and also brings no novelties nor any interest in output of the project.

The quality of project in the wake of lack of proper expectations from the academia turn out to be so inferior that no journal accepts such non innovative, incomplete and unethical work. Candidate is always made to feel that he or she is being made to work on topics that has never has been done before. But the truth gets unfolded during the candidate's viva-voce University examination unattended by industry guide as they are never the part of university evaluation



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system. The lack of the industry academia interaction during evaluation needs to be worked out for bringing out projects that could provide improved novelty and usefulness to the industry as well as the academic departments. The following suggestions look worthy for adding value to research output.

- Two External Examiners to be appointed for Viva-voce: One from Industry and One from Academic Department.
- Provide clarity to the industry as a 'White Document' which clearly mentions the responsibilities of the industry in case they are willing to guide students in the industry for pursuing research work. In the absence of such documents/ lack of directions, industry guides award weak projects/ routine exercises like some experiments of 1st/ 2nd semester. Also responsibility is vested with industry and the common practice/ complaints of students that project work is actually done only during the last few months and rest of the year some other work unconnected with the project is entrusted to the students on the pretext of training! Also industry understands the importance of 'publications/ presentations' as part and parcel of candidate's fulfilment with regard to thesis requirements. In defence of industry that work is equivalent to obtaining a patent, then equal weightage be given to the academic institution as the student is working on behalf of college and is not on pay rolls of the industry. That is the true spirit of Industry-Academia interaction. Or else it is just 'exploitation'.
- Develop facilities in the academic department through support from the industry for carrying out research work. When candidate work in the industry for research project, only one individual from academia is benefitted; but if the same facility is developed by the industry in the college/ department many more individuals are benefitted.

Research in pharmacy colleges can be more successful and meaningful only if our policy makers on both sides of the fence (that we have created) – the industry and academia work together. The following recommendations of Pronk et. al are worth looking at [T. Pronk et al, Nature Biotechnology 33, 237-240 (2015)]

1. Openly discuss intended benefits, requirements and risks for both partners.
2. Consider which mode of collaboration optimally fits joint objectives.
3. Negotiate professional contracts on Intellectual property, confidentiality and publication procedures.
4. Retain full transparency within the academic research group about the terms and conditions of the collaboration and instruct scientists and students on the importance of confidentiality and Intellectual property rules.
5. Academia to contribute equally and monitor progress in the project frequently and communicate about alignment with joint and individual objectives.
6. Build relationships grounded in mutual trust and respect, acknowledge and celebrate successes, learn from mistakes.

Failure on any one of the Pronk's six recommendations can lead to massive devastations in the ideology and spirit of good research presentation. That is where our M Pharm industry projects fail to blossom in 90% cases!

This write up is an eye-opener not only for academicians and industry supporting our PG research students; more importantly for University and Regulatory forces about the realities on ground. Regulatory agencies should look in to the actual number of students pursuing 2nd year research in the department while sanctioning PG seats as it can be a clear indicator signifying the actual capabilities of the department.

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