

A STUDY ON THE IMPACT OF INDUSTRY – INSTITUTE PARTNERSHIP

SANTOSH NARAYANAN M

STUDENT

SECOND YEAR BBA

TIPS COLLEGE OF ARTS & SCIENCE

ABSTRACT

Increased competition and globalization motivate us to join forces to enhance the impact of the research conducted. Collaboration between organizations with different views can, however, be difficult to manage and needs awareness and skills to meet different expectations. This article will consider both a mutual industrial and academic perspective into the development of action research and, in six research project cases, empirically explore how the impact can be enhanced by considering certain key factors in the research process. How the phases of problem formulation, methodology, and results are managed is critical for the success of a collaboration and, thereby, its impact. Counter-productive forces that could dilute the progress over time need to be considered given that combining practical relevance and scientific rigour comes with challenges.

KEY WORDS: Globalization, academics, industry.

BRINGING INDUSTRY AND ACADEMIA TOGETHER

With the advent of globalization and opening up of Indian economy to outside world, competition among industries has become stiff. To solve their engineering problems, they look up now to engineering institutions. Similarly, there is an urgent need to prepare engineering students for jobs in multinational

companies, by exposing them to newer technologies and engineering methodologies.

These objectives can only be achieved well by bridging the gap between industry and the academic institutions. Better interaction between technical institutions and industry is the need of the hour. This will have great bearing on the engineering curriculum, exposure of engineering students to industrial atmosphere and subsequent placement of young graduating engineers in industries across the country.

Industries and institutes have been collaborating for over a century, but the rise of a global knowledge economy has intensified the need for strategic partnerships. The Institutes are imparting the basic knowledge and skill, but the Industry-Institute Interaction will enable to undertake research by staff and students relevant to the industry.

The Industry-Institute Interaction should be designed to run longer period for preparing the manpower of world class in the field of science and technology by inculcating the various skills required by the industry, thereby contributing to the economic and social development at large.

With several layers of collaboration being built by the government to develop the Make in India program, the manpower needs have to be fulfilled in order to

witness the required development. Though availability of manpower is abundant in India, well equipped manpower with employability skills is the need of the hour. There is a need to create avenues for a close academia and industry interaction through all the phases of technology development, starting from conceptualizing to commercialization.

INTRODUCTION TO THE STUDY

In the wake of quantum jump in technologies with global connectivity, the engineering Institutions have responsibility to provide not only the required skills and knowledge to their students, but also practical industrial experience. There is a consensual feeling that what is taught in the institute has no bearing upon what is practiced in the industry; that there is a high disconnect between academic study and industrial practice. Though this may be true to a certain extent, the fact is that because of the recent liberalization, privatization and globalization of the Indian economy the industries are being increasingly exposed to direct competition in a global market place and to become more competitive in this environment, they should improve and increase their quality and efficiency. In this situation, the industry has to respond by a two-pronged strategy of updating their technology as well as updating their human resources, by providing new experiences and competencies. The engineering institutions on the other hand in order to catch up with the new technology, have to involve industry in their various activities. This situation has created a symbiotic relationship between the engineering institutions and industry.

NEED FOR INDUSTRY INSTITUTE COLLABORATION

The educational reform of linking engineering education with the industry has been amongst the important educational innovations undertaken in this country. When it is realized that the engineering institutions and industry are so inter-dependent on each other, with the university engaged in educating engineers and the industry providing employment for these engineers, it becomes necessary to explore avenues for improved collaboration between these partners in national development. Additionally, there can be no doubt that we cannot have an active innovative technology without the continuous stimulation provided by research, whether basic or applied. Since the universities are traditionally the place for most research, and industry necessarily the place for most technology, what is called for is enhanced collaboration between the institute and industry.

GROUPING OF PARAMETERS TO EVALUATE THE EFFECTIVENESS OF INDUSTRY–INSTITUTE COLLABORATION

As Industry–Institute Collaboration involves a diverse set of activities and result in a variety of outputs, no single measure is able to capture the full range of such collaborations, and hence the success Industry–Institute Collaboration depends on the various parameters like participation of industrial personnel in seminar, involvement in curriculum design, summer training of students in industry, industrial problems as projects, consultancy to industry, involvement in teaching process, etc. This creates a lot of scope in increasing Industry–Institute Collaboration and thus the divide between theory and practice can be

narrowed. This has led to a positive shift in the thinking towards increased interaction with industries, however the Industry–Institute Collaboration Cell is needed to create a brand value and hence to increase the marketability of the students

These parameters according to their intrinsic characteristics are grouped in six broad categories for various types of Industry–Institute Collaboration are listed in Table 1.

Category 1 General Collaboration represents personal informal collaboration which helps to build up deeper levels of participation from industry.

Category 2 Academic Level Collaboration involves a more specific collaboration of industry with higher level of participation than General Collaboration in HEEI.

Category 3 Institutional Support Type Collaboration helps to overcome resource constraints of HEEI.

Category 4 Service Type Collaboration helps the HEEI to generate financial resources by providing the services needed by industries

Category 5 Cooperative Type Collaboration involves formal research agreement under which

original research is conducted in Industry–Institute Collaboration.

Category 6 Student Level Collaboration helps the students to identify the industrial problems, to understand the best practices and needs of industries, and to generate funds for co-curricular activities.

From the above study, we can conclude that for an effective Industry–Institute Collaboration, the following attributes are very important.

1. Resource persons
2. Inclination of resource persons in collaborations
3. Conducive environment
4. Infrastructure for minimum requirements of industries
5. Clear policies and guidelines

Table 1. Grouping of Parameters in Six Categories of Collaboration

Type of Industry-Institute Collaboration	Parameters
Category 1 General Collaboration	<ol style="list-style-type: none"> 1. Participation of industrial personnel in workshops 2. Participation of industrial personnel in conferences 3. Participation of industrial personnel in seminars 4. Participation of industrial personnel in guest lectures 5. Participation of industrial personnel in committees
Category 2 Academic Level Collaboration	<ol style="list-style-type: none"> 6. Participation of industrial personnel in teaching process 7. Conduction of continuing education for industries 8. Involvement of industrial personnel in curriculum design 9. Joint publication of papers with the industries 10. Representation of industrial experts as external examiners for students
Category 3 Institutional Support Type Collaboration	<ol style="list-style-type: none"> 11. Participation of industries in research fellowships 12. Contribution of funds to attend workshops by the industries 13. Donation of instructional resource materials by the industries 14. Donation of laboratory equipments by the industries 15. Contribution for infrastructure development by the industries
Category 4 Service Type Collaboration	<ol style="list-style-type: none"> 16. Utilization of specialized laboratory equipments of the institute by the industries 17. Conduction of training programmes for the industries 18. Participation in consultancy assignment of the industries
Category 5 Cooperative Type Collaboration	<ol style="list-style-type: none"> 19. Participation in joint project with the industries 20. Participation in joint research with the industries 21. Participation in joint patent with the industries
Category 6 Student Level Collaboration	<ol style="list-style-type: none"> 22. Participation in industrial visits 23. Participation in industrial project works 24. Participation in summer trainings 25. Participation in internships 26. Sponsor of medals and rewards 27. Contribution of funds for co-curricular activities

In general, faculty members should be encouraged to engage in appropriate outside relationships with the industries. Such outside activities can provide the individual faculty member with experience and knowledge valuable to teaching and research and also help students gain richer educational opportunities and experiences. It is the responsibility of the

Institutional administrators to establish appropriate norms and to assure the existence of an open environment for free exchange of ideas [4]. A minimum infrastructure for the requirements of industries should be established for the effective institutional participation in tests and investigations which lead to the extension of knowledge or to increase effectiveness in

teaching. As the Industry–Institute Collaboration involve a diverse set of activities, it is necessary that guidelines, which constitute institutional policy, should be developed for continuing and productive relationships between the institute and the industry [5].

CONCLUSION

Engineering education is a process of learning various technologies by way of practice. Tailor made training courses help the technician to show better skills of workmanship. Authors have tried to enumerate and explain the various ways of strengthening partnership between industry and institute. This linkage is to be built up to the desired level of strength and utility. For this linkage to be meaningful both the systems should understand each other's roles, and work for mutual benefit.

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