

Essential of Industry Supported Projects in Technical Education

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Abstract: The Primary objective of academic project is to build the student's skill set as per the industry demands. This paper focus on the objectives, expected outcomes, different project practices, and importance of industry supported projects in technical education and results obtained through it.

Keywords: Project Based Learning, academic projects, Industrial needs, Industry Institute Interaction, Times New Roman, 10 pt text justified: keyord1, keyword2, keyword3Times New Roman (Maximum 6 keywords)

1. What is academic Project?

The educational project is the framework in which institutes or universities pursue their mission, which in keeping with the principle of equality of opportunity, is to: 1) impart knowledge to students 2) foster their social development and 3) give them qualifications [1].

Project is part of academic and need to be completed to pursue a degree in technical education.

2. Objectives of academic project

Following are the objectives of academic projects,

1. To apply the knowledge gained during education
2. To enhance the skill set of the students as per industry needs
3. To prepare the students to work in industrial environment

3. Outcomes of the academic project

Following are the outcomes expected for computer science and engineering projects,

3.1 After successful completion of the project students will be able to design and construct a hardware and/or software system, component, or process to meet desired needs. (Bloom's Cognitive level 6th)

3.2 After successful completion of the project students will be able to analyze the hardware and/or software requirements of the system (Bloom's Cognitive level 4th)

3.3 After successful completion of the project students will

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be able to identify, formulate and solve a problem. (Bloom's Cognitive level 2nd)

3.4 After successful completion of the project students will be able to use different tools available in the market for coding, testing and deployment (Bloom's Cognitive level 3rd)

3.5 After successful completion of the project students will be able to demonstrate the software product using any one programming language. (Bloom's Cognitive level 3rd)

3.6 After successful completion of the project students will be able to communicate effectively through writing effective reports, designing documentation and effective presentations. (Bloom's Cognitive level 2nd)

3.7 After successful completion of the project students will be able to defend or argue or appraise the results obtained during project work (Bloom's Cognitive level 5th)

4. Project Practices

Most of universities like Shivaji University Kolhapur, Pune University, autonomous institutes and affiliated institutes expect the academic project work to be carried out in two semesters of final year of technical education which is undertaken preferably by group of 4-5 students who will jointly work and implement the project in the two semesters. The Project work is continually evaluated based on the contributions of the group members, originality of the work, innovations brought in, research and developmental efforts, depth and applicability, etc.

Traditionally, students are working on projects under the guidance of faculty members and completing their work in institute premises only.

Following are the some drawbacks found in traditional approach,

1. Students are not getting the industrial exposure. As quality of academic projects is poor as compared industrial one [2].
2. Faculty members those are guiding the project may not have industrial background. Hence project development may not be in systematic manner (i.e. lack of planning, designing, testing, optimized coding, proper testing, use of advanced tools, etc).
3. There may be lack of involvement by each team member in the development of project.

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If we consider the engineering graduate student then he/she is supposed to do one of the following after graduation,

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- i. Job in industry
- ii. Post-Graduation
- iii. Business/Entrepreneur

All above requires the proper skillset and technical knowledge. Academic projects plays vital role providing technical knowledge and foundation skills.

5. Some project practices applied in ADCET

A. Assigning multiple guides for a project group
Sometime guidance of single faculty may help the students up to the mark as limitation of working area of guide. Multiple guides (guide and co-guide) can be allocated to a project group where students can get benefit of multiple experts.

B. Focusing on sponsored projects

The industries are working on live projects and developing the products as per customer needs. Keeping this in mind there should be moreover focus in sponsored live projects. This will help the students to solve the real time problems which will meet the industry expectation.

C. Industrial Training / Internship

The industries always prefer to use advanced tools for the product development. Most of the advanced tools may not be part of academic. Students should use new technologies and advanced tools while developing their project. Industrial training or internship in an industry provides the hands on experience in advanced tools and technologies.

Industry institute interaction [3,4] helps to get opportunities like sponsored live project, industry supported project,

D. Industrial person as Co-guide to the students

It is always helpful for the students if they are getting guidance from the person who is currently working in industry. Students will be updated to recent technologies, industrial demands, best industry practices and exposure to the industrial development strategies.

For the same purpose institute can request industries as part of industry institute interaction or alumnus of the institute to become a co-guide.

6. Results obtained by applying practices mentioned in 5

Department of Computer Science and Engineering had interacted with 4 industries during academic year 2015-16. As part of this interaction, we received 16 industry sponsored projects out of 20 in 2015-16 and are shown in fig.1.

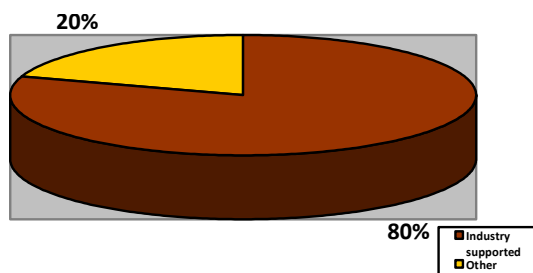


Fig.1 industry supported projects in 2015-16

As a part of industry institute interaction 21 students got industrial training in two different industries. Out of these 21 students 17 students got placed (as shown in fig.2) during campus interviews which show the essential of industrial support in project work.

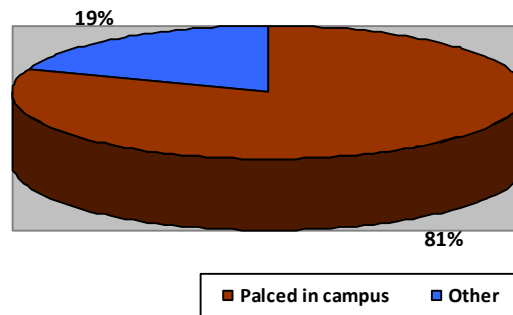


Fig.2 impact of industry support projects during campus interview

5. Conclusions

Industrial support projects helps to develop the students' skills and prepare them for work on industrial problems. A student remains up to date with current technologies and tools which is major requirement of an industry. This helps a student in campus drives to get select in reputed industry. In academic year 2016-17, we have allocated an industry expert to each group and waiting for positive better results.

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