International Journal for Research in Engineering Application & Management (IJREAM)
ISSN : 2454-9150 Vol-04, Issue-11, Feb 2019

Findings On HR Requirements And Techno-Managerial Skill Gap: A Study On IT- Industry In Management Education Perspective

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Abstract - The IT industry is heavily relying on various services associated with IT product development, delivery, and management. The management institutes provide a variety of academic programme for developing the techno-managerial skill through academic curriculum. The industry always looks for a skilled workforce. The management science higher educational institutes works for developing students as a skilled workforce through various management programmes. The IT industry requires human resource with updated skills up to the date. The job applications and mapping of required techno-managerial skills; is always an essential issue in the recruitment of techno-managerial jobs in IT industry. The gap in essential Techno-Managerial skills and the exact industry requirements is a crucial study to conduct to fulfill the skill sets gap. To fill the skill gap, this research focuses on identifying the major factors responsible for Techno-Managerial skills gap and to study the importance of implementation of various activities for skill development. Thus it will provide the path for development of skills required at the industry and the mechanism to be set up at an academic area.

Keywords: Skill Requirement, Skilled workforce, Skill Gap, Skill Development

I. INTRODUCTION

The 'Skill' is perfection which achieved through continuous efforts and well directed hard word. Each skill has its unique importance in performing the job. In the Information Technology and Information Technology Enabled Services (IT/ITeS); industry the soft skills, technical skills, and administrative skills are essential requirements for techno-managerial jobs. These skills are crucial to offering services associated with a product and its development. On the other side, the management institutes also offer a variety of options for skills through academic curriculum. The skills discussed are also been developed at management institutes. The IT/ITeS industry always looks for a set of updated skills. The techno-managerial Skill sets are still a significant hurdle for recruitment. Some of the techno-managerial abilities are listed below,

Sr. No.	Skill Category	Skills
1.	Techno-managerial Skills	Data Analysis, Programming, Project Management, Social Media Experience, Technical Writing, Time Management, Hardware,and Networking

The listed skills need to study in detail. But the scope of the research paper is limited to testing the Techno-Managerial skills. These skills tested on 'the factors responsible for the gap in skill required and skill possessed in the students' on the listed skills, 'Importance of Activities responsible for skill development among students' on the listed skills, 'Efforts taken for training for a recruit for Skill Development' on the listed skills. The study collects responses for the factors responsible for Techno-Managerial jobs, activities accountable for skill development and the training programs frequency. The research would lead to the identification of elements which are responsible for the skill gap, and the respondents will respond for the importance and implementation of various activities for skill development.

II. STATEMENT OF THE PROBLEM

The IT and ITeS industry heavily relies on services associated with the product and its development. The stakeholders from industry are Human resource Personnel, Technical Personnel, etc.. The HR and Technical Personnel

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are always in the process of development of the required skill sets to fill the requirement of skill sets requirements. The techno-managerial Skill sets development on a regular basis is must in the IT/ITES industry. It is due to the continuous technological changes. Also, in the management education syllabus, the curriculum periodically changes. The techno-managerial skills development process have to regularly change. But the speed with which the technological changes are taking place and the management syllabus change is drastically different for each field. The technology changes are fast, and these changes need to be accepted at a rapid pace to industry. This result in a decrease in the supply of techno-managerial skill sets of probable recruitment of candidates. The availability of techno-managerial skills in the industry is always challenging. This research focused on the study of the factors responsible for the skill gap and important activities accountable for skill development and the training programs frequency. In this study, the respondents are from the IT and ITeS industry, namely, HR personnel and Technical Personnel. The respondents will respond to the factors responsible for the skill gap, the importance of various activities for skill sets development and the frequency of the training programs.

3. The scope of the study

3.1 The study is limited to IT / ITeS industry respondents only

3.2 The respondents from the industry are HR and Technical Personnel.

3.3 The study is limited to Pune region only.

4. Objectives of the study

4.1 To study the factors responsible for the Skill Gap

4.2 To investigate the importance of academic activities responsible for Skill development

4.3 To analyze the frequency of training programs conducted in the said Industry.

III. RESEARCH METHODOLOGY

The study focuses on the analysis of the factors responsible for the skill gap and offers probable results for skill development. The type of research is a descriptive type, and the method is survey method. The study is focusing on collecting responses IT/ITeS industry HR Personnel and Technical Personnel. The respondents were asked to rate the answers for the following parameters,

Details of the Skills gap Parameters:- Table 1.0

Sr. No	Parameters	Remark
1	The factors responsible for the gap in skill required and skill possessed in the students	The responses collected from 10 factors mentioned in table 2.0
2	Importance of Activities responsible for skill development among students	The responses collected from 18 activities mentioned in table 3.0
3	Efforts were taken for training for a new recruit for Skill Development	The responses collected from respondents.

Factors responsible for Skill gap: - Table 2.0

Sr. No	Factors responsible for the Skill Gap
1	Hands-on practice for a live experience
2	Unawareness of required skills and its related activities
3	Importance of Activities responsible for skill development among students
4	Lacking in getting required online self-directed training programs
5	Unawareness of facilities available for skill development
6	Unawareness about skill upgrades requirement
7	The absence of Streamlined process for identifying skill gap

Activities for Skill development: - Table 3.0

Sr. No	Activities responsible for Skill development
1	Caselet / Situation Analysis (Group Activity or Individual Activity)
2	In-Class Test
3	Open Book Test
4	Field Visit / Study Tour and Report of the Same
5	Small Group Project & Internal Viva-Voce
6	Learning Diary
7	Scrapbook
8	Group Discussion
9	Role Play / Story Telling
10	Thematic Presentation
11	Written Home Assignment
12	Industry Analysis - (Group Activity or Individual Activity)
13	Literature Review / Book Review
14	Model Development / Simulation Exercises ((Group Activity or Individual Activity)
15	In-Depth Viva
16	Quiz
17	Student-Driven Activities
18	News Paper Reading

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IV. SAMPLE DETAILS

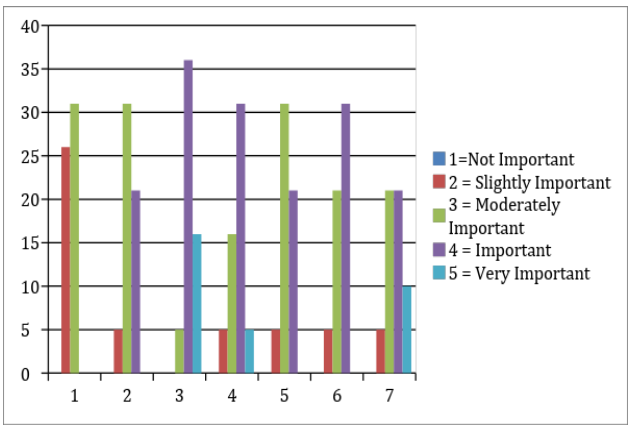
The study focuses on understanding the responses for administrative skill gap and offer feasible solutions for skill development. The research is descriptive research following the survey method for collection of opinion. The study is focusing on collecting responses from IT and ITeS industry's HR Personnel and Technical Personnel. The Unit of Analysis is HR Personnel and Technical Personnel. As per authorized website of IEEE standard calculations, the sample size calculated as follows (Considering Academic and Industry respondents). The approximate universe Population for the research is 100000, Margin error = +/- 5 %, Beta level error = 50%, Confidence level = 95%, Sample size = 384.Considering the scope of the research paper the final study sample size is 15% of calculated Sample Size, and it is 57 nos. Simple random sampling used at each stage, Sampling Method is Multistage sampling, Data Collection instrument is Survey Questionnaire, and Scaling method is 'Five Point Likert Scale'

V. DATA COLLECTION AND DATA ANALYSIS

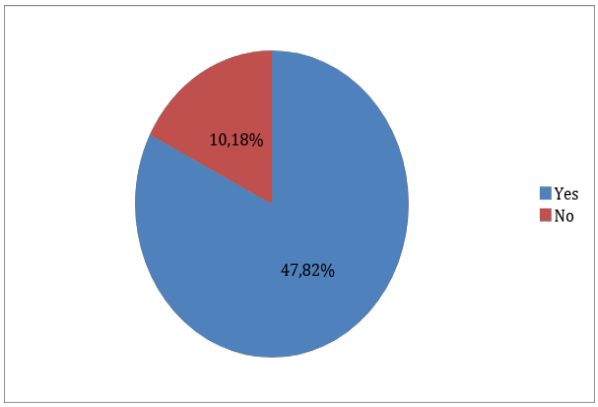
The opinions and views of the HR personnel and Technical Experts from various IT/ITeS companies from Pune, was collected in the form of online questionnaire, to understand the requirement of skills for the techno-managerial jobs. The data has been clean and made ready for analysis. After scrutiny and data cleaning, the process of data analysis is carried out to interpret the skill gap and factors responsible for skill gap.

The required skill set observed here for techno-managerial jobs are Data Analysis, Programming, Project Management, Social Media Experience, Technical Writing, Time Management, and Hardware & Networking. As per the respondentsopinion the importance of the given skills for said jobs are shown in the graph 1. The data shows that all skills mentioned are somehow important for the techno-managerial jobs because no any respondent selected the first option - not important. But the Skill - Project Management is very important for the job. The other skills like Social Media Experience, Technical Writing, and Time Management are also important for techno managerial jobs.

Skill Sets for Techno-Managerial:- Graph 1.0



Gap in the academic teaching and the skills set -- Pie-Chart 1

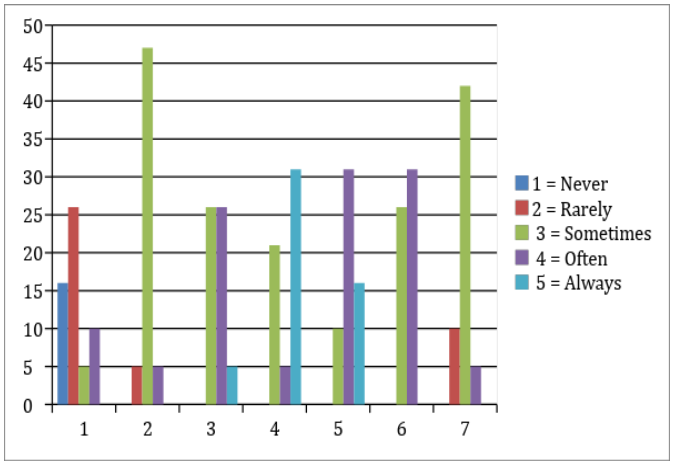


Q Do you think there is a gap in the academic teaching and the skills set required by the IT/ITES Industry?

The question asked to the respondents regarding skill gap they observe in academic teaching and the skill set required for the said position, as per the opinions 82% of the respondents were said "Yes," means there is skill gap.

There has provided seven options as 'Factors responsible for the skill gap" for the respondents to provide their opinion using five-point Likert Scales (5. Always, 4. Very Often, 3. Sometimes, 2. Rarely, 1 Never). The data has represented in given Graph 2.0; itis observed that the skill gap factor 'Hands-on practice live experience,' is not a major issue for the skill gap. But the factor no 2 and seven that is 'Unawareness of required skills and its related activities' and 'The absence of Streamlined process for identifying skill gap' are the moderately responsible for the skill gap. The skill gap factors 3, 4, 5 and 6 are mostly responsible for the skill gap; hence as per the opinion of experts that the students and academics need to give importance to the activities accountable for skill development. Thereis a lack of online self-directed training programs for skill development. There is a lack of awareness among students regarding facilities available for skill development. Also students are unaware about the required skill upgrades.

Factors responsible for the skill gap:- Graph 2.0



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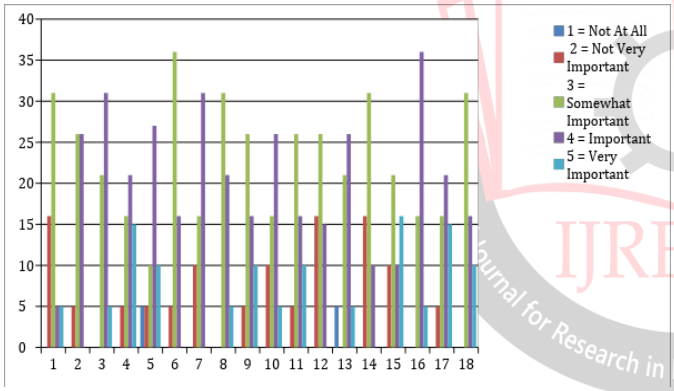
It has provided eighteen options as 'Activities Important for Skill Development" for the respondents to offer their opinion using five-point Likert Scales (5. Very Important, 4. Important, 3. Somewhat Important, 2. Not Very important, 1. Not At All). The data has represented in given Graph 3.0; it is observed that the Except Skill Development activity 'Small Group Project & Internal Viva-Voce' all other activities are not at all major skill development activity for skill development. The 'Learning diary' is somewhat important and 'Quiz' is important activities for skill development. Activity number 1,6,8,14 and 18, namely, 'Caselet / Situation Analysis (Group Activity or Individual Activity)','Learning Diary','Group Discussion','Model Development / Simulation Exercises ((Group Activity or Individual Activity)' and 'Quiz' are somewhat important activities for skill development. The activity number four i.e. 'Field Visit / Study Tour and Report of the same' are important activities for Skill development. The activity 4, 15, 17i.e. 'Field Visit / Study Tour and Report of the Same', 'In-Depth Viva' and 'Newspaper Reading' are Significant activity. In the overallanalysis, we can interpret that the activities 4, 15 and 17 are the activities which are must for skill development.

Importance of activities for Skill Development:- Graph 3.0



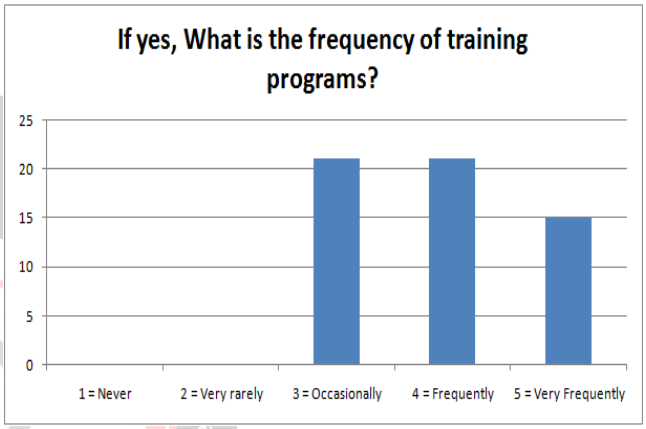
Considering the interpretations, the respondents then were asked to understand the responses for the efforts taken for skill development for a recruit.

Efforts were taken for Skill Development training for a new recruit: - Pie Chart 2.0

Q. Do you put efforts in providing training for the recruit candidates to develop their skills?

The question asked to the respondents regarding training the recruit for developing their skills. The respondents asked about whether they put efforts into providing training in developing their skills for the recruit candidates. The 82.80% of respondents positively responded that they put efforts in skill development training. The huge response for ''Yes' option interprets that there is a constant and consistent effort are always taken by industry for skill development. Indirectly, it is also explains that there exists a skill gap in the industry skill requirements and the skill possessed by recruit. On next stage, the respondents were asked to respond on the frequency of the skill development programs for a recruit which are carried out by industry.

The frequency for Skill Development training programs for a recruit:- Graph 3.0



Q. If yes, What is the frequency of training programs?

The question asked about the frequency of the training programs which needs to be conducted by the industry for the recruit. The respondents were asked to respond on the defined Likert scale for training frequency. It interprets that the training programs conductedon a regular basis. The number of training programs are decided on demand and complexity of the skill requirements by the industry. If there is a high demand for skill and the skill requirements are complex then the frequency needs to be carried out frequently. If the skill requirements are less demanding then the skill development programs need to carried out occasionally. Thus the interpretation states that the training programs carried out occasionally and frequently.

VI. FINDINGS

1. It is observed that there is a gap in academic teaching and the skill set required for the said position. As per the opinions, 82% of the respondents were said "Yes," means there is a skill gap.

2. It isobserved that the skill gap factor 'Hands-on practice live experience', is not a major issue for the skill gap.

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3. 'Unawareness of required skills and its related activities' and 'The absence of Streamlined process for identifying skill gap' are the moderately responsible for the skill gap.

4. The students and academics are lacking in getting required online self-directed training programs for skill development

5. There is a lack of awareness among students regarding available facilities for required skill development and students are unaware about skill upgrades requirements.

6. It is observed that the Except Skill Development activity 'Small Group Project & Internal Viva-Voce' all other activities are not at all major skill development activity for skill development.

7. The 'Learning diary' is somewhat important and 'Quiz' is important activities for skill development.

8. Activity number 1,6,8,14 and 18, namely, 'Caselet / Situation Analysis (Group Activity or Individual Activity)','Learning Diary','Group Discussion,' 'Model Development / Simulation Exercises ((Group Activity or Individual Activity)' and 'Quiz' are somewhat important activities for skill development.

9. The activity number four that is 'Field Visit / Study Tour and Report of the Same' are important activities for Skill development.

10. The activity 4,15,17 that is 'Field Visit / Study Tour and Report of the Same,' 'In-Depth Viva' and 'Newspaper Reading' are a Very important activity.

11. The activities 4,15 and 17 are the activities which are must for skill development.

12 Out of all respondents, 82.80% positively responded that they put efforts in skill development training.

13. It interprets that the training programs conducted on a regular basis. The frequency of the training program decided on the demand and complexity of the skill requirements by the industry. If there is a high demand for skill and the skill requirements are complex in nature, then the frequency needs to be carried out frequently. If the skill requirements are less demanding then the skill development programs need to carried out occasionally. Thus the interpretation states that the training programs carried out occasionally and frequently.

VII. CONCLUSION

From the above discussion, it is clear that 'Unawareness of required Skills and it's related activities' option are major factors responsible for the skill gap. Also, 'Hands-on practice live experience' factor is not a major factor responsible for the skill gap. For the activities responsible for skill development, 'Learning Diary' and 'Quiz' activities are at highest choice. The industry is always taking efforts for training a recruit for skill development. Thus it is a must for creating awareness for candidates about the self-directed training programs and raise their skill sets. The activities like Learning diary and quiz must include for the development of skills sets for creating candidates awareness about the self-directed learning courses. There is a high demand for training programs for a new recruit. Thus from the above discussion, it is clear that the industry needs to develop a customized training program and implement them practically for the skill development.

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