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## **Significant Impact of Successive On-Job Trainings on Performance of Technical Employee in Biotech Industry**

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### **Abstract**

*Training is essential to the growth and economic well-being of industry and technical employees are main key of any Biotech Industry. Therefore training is required to nourish employee skills of all level in any organization. There are two possible ways to train the industrial employees through on-job training i.e. common for all employees and specific for work oriented at their work place. In this study, we performed five task specific on-job trainings by trainers acquainted with theoretical, practical and demonstration skills. In other words, the training is one of the most pervasive methods for enhancing individual knowledge, skills, ability and attitude as well as improving job performance in the work environment. The current study designed only five On-job training programs and the successive On-job trainings performed in upcoming continuous three years from 2016 to 2018. Training effectiveness must cause behaviour change i.e. skill transfer for job performance, thereby resulting in organizational performance. The results of this study shows that on-job training is strongly and positively affects the technical employee in terms of result oriented, target achievement and improvement in their work quality.*

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**Keywords:** Biotech industry, Technical employee, Manufacturing and Quality Control Departments, On-job trainings, Assessment, Learning parameters

### **Introduction**

In current scenario, there have been rapid technological changes and automation on existing jobs, which have called for continual training and re-training of employees in Biotech Industries. Some technical employees in the industries may lack the immediate knowledge of their jobs, either due to inadequate qualifications or lack of relevant technical

skills to continue. Training will help to upgrade employees' knowledge, skills, ability and attitude to suit modern technological changes in the relevant fields in these industries. As we know that employee of any organization is a blood stream especially technical employees in Biotech industries. Inadequate skill, knowledge, ability and attitude of those employees in Biotech industry are therefore some

of the factors responsible for inefficiency and low productivity in the industry. Training could be a positive measure for re-directing various employees' perspectives and ideas to the goals and objectives of the organization (Elnaga & Imran, 2013). Employee's behaviour or attitude could either favour or retard the growth of an organization. Training can improve the performance and productivity of the employee and ensure that they have the relevant skills. Training focuses on doing activities today to develop employees for their current jobs and development is preparing employees for future roles and responsibilities (Kinicki & Kreitner, 2007).

Training is an important and imperative tool for the organization to revamp the performance of the entire employee for organizational growth and success. It is beneficial to both employers and employees of an organization. An employee will become more efficient and productive, if he or she is trained well. Firms can develop and enhance the quality of the current employees by providing comprehensive training and development. Training is essential not only to increase productivity but also to inspire workers by letting them know how important their jobs are and giving them all the information they need to perform those jobs (Anonymous, 1998). The general benefits received from employee training are: increased job satisfaction and morale, increased motivation, increased efficiencies in processes, resulting in financial gain, increased capacity to adopt new technologies and methods, and increased innovation in strategies and products.

Training methods could be classified as cognitive and behavioural approaches. Cognitive methods provide verbal or written information, demonstrate relationships among concepts, or provide the rules for how to do something. These types of methods can also be called as off-job training methods. On the other hand, behavioural methods allow trainee to practice behaviour in real or simulated fashion. They stimulate learning through behaviour which is best for knowledge development, skill development and attitude change. These methods can be called as

on-job training methods. Thus; either behavioural or cognitive learning methods can effectively be used to change attitudes, though they do so through different means. Cognitive methods are best for improving knowledge and skills and behavioural methods for skills (Blanchard & Thacker, 1998). The decision about what approach to take to training depends on several factors that include the amount of funding available for training, specificity and complexity of the knowledge and skills needed, timeliness of training needed, and the capacity and motivation of the learner. Different forms of on-job training methods were previously discussed in detail such as job instruction technique, job rotation, coaching and apprenticeship training (Alipour, 2009). In present study, the purpose of the successive on-job training session is to provide employee with task-specific knowledge and skills in work area for continuously three years from 2016 to 2018. The knowledge, skills, ability and attitude presented during on-job training are directly related to full fill their job requirements and to improve in their work quality.

### **Objective of the study**

The present study was based on need of on-job trainings and their impact assessment for technical employees from manufacturing and quality control departments in Bharat Immunologicals and Biologicals Corporation Limited (BIBCOL), Bulandshahr, Uttar Pradesh, India as a Biotech industry. On the basis of training need, total five trainings were taken under consideration and conducted with the following objectives:

- i) To identify on-job training for technical employees of manufacturing and quality control departments on the basis of need.
- ii) To design and conduct the trainings.
- iii) To develop and maintain the training records in our organization.
- iv) To assess the training impact on the departmental technical employee

### **Methodology**

#### ***On-Job trainings and its Participant***

A total 54 numbers of employees were participated in five on-job trainings from manufacturing and quality control departments of BIBCOLD, Bulandshahr, Uttar Pradesh, India viz. 26 employees from manufacturing and 28 employees from Quality Control department of the organization. It is also necessary to make the employees use the newly acquired skills from the training program. Therefore all technical employees from Manufacturing and Quality Control departments are included in the on-job training as participants.

As described in Table 1, on-job trainings (Training Code OJT-001 to OJT-005) of the employees were designed according to need of the participants. The trainings were organized from OJT-001 to OJT-003 in month of April 2016 and OJT-004 to OJT-005 in month of June 2016 after approval of the Training Head. Records of individual participant for the trainings were maintained such as mark attendance, lecture deliver in form of power point presentation, demonstration, evaluation through question & answer session and monthly report submission.

#### ***Trainer for On-Job trainings***

For on-job training to be effective, the best is to have the appropriate expertise trainer within the organisation. An advantage using an existing employee to become a trainer is that trainer already has experience in the field and knowledge of the work within organization. An on-job trainer acquainted with title knowledge, preparation of power point slides, effective presentation skill and dealing with topic related difficulties. Finally trainers are an officer of grade not less than Manager Designation from production, quality control, quality assurance and training departments. There are two categories of trainers on the basis of their responsibilities as previously recommended (Solter, 1997).

- i) Conducted trainers for performing the training through lecture, demonstration etc.
- ii) Panel trainers for supervision, evaluation, assessment etc.

#### ***Data presentation and analysis***

Present study data was compiled and presented in tabular form by using Microsoft word software. Assessment of all five on-job trainings impact through learning parameters (theoretical, practical and demonstration) need for employees was determined according to previously described method of Pfau, R.H. (2005) and following symbolic grading system was adapted and applied to measure the learning parameters on the employee's performance after completion of the on-job trainings. Symbols for the grading system stand for:

- i) + = somewhat useful in developing such learning
- ii) ++ = often very useful and effective
- iii) +++ = highly useful and very effective

#### ***Successive three years On-Job Trainings***

Out of 54 numbers participants, only 10 participants were attended training program from OJT-001 to OJT-005 in three consecutive years from 2016 to 2018. Data of these participants were compiled and analysed as described above.

#### ***Study Findings and its Interpretation***

All the successive On-Job trainings were designed as per need of technical employees and prepared the schedule. These trainings were conducted according to the schedule and it was communicated to the trainees and trainers in well advance. During the period of the on-job trainings, the employees were showing positive response and attending with interest. Record of the conducted training was maintained for its impact assessment purpose after completion of the trainings.

#### ***Identification designed and conducted on-job trainings***

Total five on-job trainings were included in this study and detail of the trainings with code and department wise participants as described in table 1. The departmental employees were participated actively with positive and learning attitude in training codes from OJT-001 to OJT-005 and were assessed

after successfully completion. A total 54 employees were participated in all five on-job trainings and training wise participation of the employees summarized in following table for different on-job trainings. Employees from manufacturing and quality

control department were participated in OJT-001 to OJT-004 trainings. OJT-005 training was specially designed for quality control employees and they were only participated in the training.

Table 1: *Number of participants from Manufacturing and Quality Control division in On-job Training*

Training Code	Title	Department		Total
		Manufacturing	Quality Control	
OJT-001	Weighing Tasks and Procedures	05	09	14
OJT-002	Pipetting Techniques in QC Testing Procedure	07	06	13
OJT-003	Working in a LAF	07	04	11
OJT-004	Non-Destructive filter integrity testing	07	03	10
OJT-005	Cell Maintenance and Preservation	00	06	06
	Total	26	28	5

***Development and maintained of the training records***

Records of on-job trainings from OJT-001 to OJT-005 were generated and maintained date-wise in form of marked attendance of each trainee; lectures with the topics, brief outline of lectures, stepwise detail of presentations and demonstrations of individual conducted trainer including name, designation & signature for each training and supervision, evaluation & assessment record of individual Panel trainer including name, designation & signature for each training.

***Impact assessment of the trainings***

Impact assessment of on-job training on the technical employees in our organization was done individually on the basis of maintained the records. Results of individual on-job training was compiled and summarized with different learning parameters (theoretical, practical and demonstration) for departmental technical employee as participants in following table 2.

Table 2: *Learning parameters of each On-Job Training for participants*

Training Code	Learning Parameter	Knowledge	Skills	Abilities	Attitudes
OJT-001	1. Theoretical				
	1.1. Action	+++	++	+++	++
	1.2. Coaching	++	++	++	++
	1.3. Job Instructions	+++	+++	+++	+++
	1.4. Reading	++	+++	++	++
	1.5. Feedback	++	+++	+++	++
	2. Practical				
2.1. Action	+++	++	+++	+++	

	2.2. Coaching	++	++	++	++
	2.3. Job Instructions	+++	+++	+++	+++
	2.4. Learning observation	+++	+++	+++	+++
	2.5. Feedback	+++	+++	++	++
	3. Demonstration				
	3.1. Action	++	+++	++	++
	3.2. Briefings	++	++	++	+++
	3.3. Orientation	++	++	+	++
	3.4. Learning by doing	+++	++	+++	+++
	3.5. Feedback	+++	++	+++	++
OJT-002	1. Theoretical				
	1.1. Action	++	++	+++	+++
	1.2. Coaching	+++	++	++	++
	1.3. Job Instructions	+++	+++	+++	+++
	1.4. Reading	++	+++	+++	++
	1.5. Feedback	++	++	++	+++
	2. Practical				
	2.1. Action	+++	++	+++	+++
	2.2. Coaching	++	++	+++	++
	2.3. Job Instructions	+++	+++	+++	+++
	2.4. Learning observation	++	+++	++	+++
	2.5. Feedback	+++	+++	++	++
	3. Demonstration				
	3.1. Action	++	+++	++	++
	3.2. Briefings	++	++	++	+++
	3.3. Orientation	++	++	+	++
	3.4. Learning by doing	+++	++	+++	+++
	3.5. Feedback	+++	++	+++	++
OJT-003	1. Theoretical				
	1.1. Action	++	++	+++	++
	1.2. Coaching	++	++	++	+++
	1.3. Job Instructions	++	+++	+++	++
	1.4. Reading	++	+++	+++	+++
	1.5. Feedback	++	++	+++	++
	2. Practical				
	2.1. Action	++	++	+++	+++
	2.2. Coaching	++	++	++	++
	2.3. Job Instructions	++	+++	+++	+++
	2.4. Learning observation	++	++	+++	++

	2.5. Feedback	+++	+++	++	+++
	3. Demonstration				
	3.1. Action	++	++	++	++
	3.2. Briefings	++	++	++	++
	3.3. Orientation	++	++	+	++
	3.4. Learning by doing	+++	++	++	+++
	3.5. Feedback	+++	++	+++	+
OJT-004	1. Theoretical				
	1.1. Action	++	++	+++	++
	1.2. Coaching	++	++	++	+++
	1.3. Job Instructions	+++	+++	++	+++
	1.4. Reading	++	++	++	+++
	1.5. Feedback	++	+++	+++	++
	2. Practical				
	2.1. Action	+++	++	+++	+++
	2.2. Coaching	++	++	++	++
	2.3. Job Instructions	+++	+++	++	+++
	2.4. Learning observation	+++	++	++	++
	2.5. Feedback	+++	+++	++	++
	3. Demonstration				
	3.1. Action	++	+++	++	+ +
	3.2. Briefings	++	++	++	+++
	3.3. Orientation	++	++	+	++
	3.4. Learning by doing	+++	++	+++	+++
	3.5. Feedback	++	++	++	++
OJT-005	1. Theoretical				
	1.1. Action	++	++	+++	+++
	1.2. Coaching	+++	++	++	+++
	1.3. Job Instructions	+++	+++	+++	+++
	1.4. Reading	++	+++	+++	+++
	1.5. Feedback	++	+++	+++	+++
	2. Practical				
	2.1. Action	+++	++	+++	+++
	2.2. Coaching	++	++	+++	++
	2.3. Job Instructions	+++	+++	+++	+++
	2.4. Learning observation	+++	+++	+++	+++
	2.5. Feedback	+++	+++	++	++
	3. Demonstration				
	3.1. Action	++	+++	++	++

3.2. Briefings	++	++	++	+++
3.3. Orientation	++	+++	+	++
3.4. Learning by doing	+++	++	+++	+++
3.5. Feedback	+++	++	+++	++

All technical employees from manufacturing and quality control departments were participated actively with learning enthusiasm throughout the on-job trainings. The trainings have positive impact on knowledge, skills, abilities and attitudes of the participants from manufacturing and quality control departments except orientation ability in the demonstration. In this study, the single positive (+) symbol was also considered significant because it represents here “somewhat useful in developing such learning”. The participants are engaged in their specific job only and they performed first time the orientation for demonstration purpose during the study. As inferred from the responses of the participants and trainers, the on-job training course objectives were accomplished and it might be contributed in enhancement of different learning parameters for employees, which in turn contributed to the overall outcome at their work places.

**Significance of Successive On-Job Trainings**

The study was initiated in the year 2016 and completed in 2018. Data was compiled and analysed on the year wise and the grading system was applied to measure the learning parameters on the employee’s

performance after completion of the on-job trainings. Finally, the impact assessment was done to find out improvement of the successive On-Job trainings within the continuous three years from 2016 to 2018. Data was presented and discussed in detail of the On-job trainings that were conducted in the year 2016. But data for the year 2011 and 201 was not shown.

Significance of successive On-job trainings was indicated for all the three years. The data was summarised in table 3 and represented in form of the significance with the learning parameters of theoretical, practical and demonstration for conducted On-job trainings during the year 2016, 2017 and 2018. Overall data was found significant as “S” indicated in the table except orientation ability in the demonstration during the year 2016. But the parameter was improved significantly in OJT-001, OJT-002 and OJT-003 during the year 2017 and OJT-005 in addition of the three training was found significant improvement in the year of 2018. This study finding revealed that participants can be improved significantly their learning parameter through successive On-job trainings.

Table 3: Year wise successive impact of On-Job Trainings

Year	Learning Parameter	Training code				
		OJT-001	OJT-002	OJT-003	OJT-004	OJT-005
2016	Theoretical					
	Knowledge	S	S	S	S	S
	Skills	S	S	S	S	S
	Abilities	S	S	S	S	S
	Attitude	S	S	S	S	S
	Practical					
	Knowledge	S	S	S	S	S
	Skills	S	S	S	S	S
	Abilities	S	S	S	S	S
	Attitude	S	S	S	S	S

	Demonstration					
	Knowledge	S	S	S	S	S
	Skills	S	S	S	S	S
	Abilities	Sn	Sn	Sn	Sn	Sn
	Attitude	S	S	S	S	S
2017	Theoretical					
	Knowledge	S	S	S	S	S
	Skills	S	S	S	S	S
	Abilities	S	S	S	S	S
	Attitude	S	S	S	S	S
	Practical					
	Knowledge	S	S	S	S	S
	Skills	S	S	S	S	S
	Abilities	S	S	S	S	S
	Attitude	S	S	S	S	S
	Demonstration					
	Knowledge	S	S	S	S	S
	Skills	S	S	S	S	S
	Abilities	S	S	S	Sn	Sn
	Attitude	S	S	S	S	S
2018	Theoretical					
	Knowledge	S	S	S	S	S
	Skills	S	S	S	S	S
	Abilities	S	S	S	S	S
	Attitude	S	S	S	S	S
	Practical					
	Knowledge	S	S	S	S	S
	Skills	S	S	S	S	S
	Abilities	S	S	S	S	S
	Attitude	S	S	S	S	S
	Demonstration					
	Knowledge	S	S	S	S	S
	Skills	S	S	S	S	S
	Abilities	S	S	S	Sn	S
	Attitude	S	S	S	S	S

Note: "S" stands for significance and "Sn" stands for significance except orientation ability in the demonstration.



Improved capabilities, knowledge and skills of the talented workforce proved to be a major source of competitive advantage in a global market (McKinsey, 2006). To develop the desired knowledge, skills and abilities of the employees, to perform well at their workplace, requires effective training programs that may also effect employee motivation and commitment (Meyer & Smith, 2000). In order to prepare their workers to do their job as desired, organizations provides training as to optimize their employee's potential. Most of the firms, by applying long term planning, invest in the building new skills by their workforce, enabling them to cope with the uncertain conditions that they may face in future, thus, improving the employee performance through superior level of motivation and commitment. When employees recognize their organization interest in them through offering training programs, they in turn apply their best efforts to achieve organizational goals, and show high performance on job. In continuation of this, current study was conducted and its impact assessment was also performed. It has also indicated that the on-job training courses have positive impacts on learning parameters as well as enhance other positive impacts such as employee enhanced confidence level, create working environment, improved quality of work and output (Truitt, 2011 & Shah, 2016). The training courses have contributed to the personal development such as improved communication skills, work knowledge and other relevant skills necessary for performing tasks that were covered in the trainings. It is well documented that on-job training is a most effective tool through designing basics (Timsal, 2016) and specific training programs and it is always useful to improve employee understanding towards their work within organization (Hameed & Waheed, 2011). Therefore the training is crucial and result-oriented of each employee in any organization. In present study, training department initiated, marked, developed and performed on-job trainings with learning parameters like theoretical, practical and demonstration aspects to nourish and update technical skills and job proficiency of technical employees, those are working for manufacturing and quality

control departments in our organization as a Biotech industry.

### **Conclusions**

The on-job trainings are based on basic techniques and used in routine basis by technical employees working in manufacturing and quality control departments. Therefore the training were needed and conducted in our organization. For assessment of the on-job training impact on the departmental technical employee, the study was carried out in our organization. The conducted trainings were found effective in terms of their learning parameters based on theoretical, practical and demonstration and grading for knowledge, skills, abilities, and attitudes of the technical employees. In spite of the above, there are other important benefits such as interaction with other departmental employee and healthy technical discussion during the training within organization. Finally, present study suggested that the successive On-Job trainings have positive impact on the departmental technical employees based on the different learning parameters, if it has conducted on yearly basis.

In-spite of the above, these trainings have some limitation such as conducting the training sequentially on define period like yearly basis, its consistency, experienced trainer, attend regularly by trainee etc. The training is being considered as key component to improve the employee theoretical and practical knowledge and skill in Biotech industries. Impact of the on-job training program was impressive and remarkable based on analysis and findings of the study. Therefore it is strongly recommended that this type of on-job training is being organized in Biotech and other industries like Biopharmaceuticals, pharama for the better future of company as well as their employees.

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