

Employee Training at oldest Establishment of Defence Research & Development Organization in Odisha**A K Sannigrahi****Scientist 'F' & Additional Director****Proof & Experimental Establishment (PXE),****Defence Research & Development Organization (DRDO),****PO- Chandipur, Dist. - Balasore, Odisha, 756025****Abstract**

Similar to other laboratories of Defence Research & Development Organization (DRDO), employees at Proof & Experimental Establishment (PXE), Chandipur were also trained through 'Off the Job' training courses either under Continuing Educational Program (CEP) at PXE and in other DRDO Labs or through some training courses conducted internally by PXE or externally by some specialized organizations for developing their skills, for upgrading their knowledge and for bringing desired changes in their attitudes and behaviours. During 2009 to 2013 under CEP total 439 employees were trained in 26 training courses conducted at PXE while 165 employees were trained at other DRDO labs. Beside CEPs, 306 employees also got training through 12 other training courses carried out at PXE while 443 employees were trained through other training courses conducted by some non-DRDO institutes. Fifty five percent trainings conducted at PXE under CEP were of Technical nature mainly on technologies for effective Test and Evaluation of Armaments and different Safety Procedures while 13 percent training courses were on Administrative and Human Resource Management topics and 32 percent trainings were for soft skill development (Computer fundamentals, Multi skill development, etc.). Considering all trainings together conducted every year it was noticed that about 87.5 to 94.5 percent trainees were male employees while 5.4 to 12.5 percent trainees were female employees during these five years. Highest percentage (38.7 %) of employees got training under CEP belonged to either Diploma or Graduate in qualification, followed by Post Graduate or Ph. D (27.2 %) while 10th standard or below and 12th standard or ITI passed trainees were about 17.5 percent and 16.6 percent respectively. Majority of trainees under CEP were from Defence Research Technical Cadre (64 %) employees while Admin & Allied Cadre and Defence Research & Development Service / Scientist cadre employees were found 18.9 percent and 16.4 percent respectively. In 38 Seminars / Conferences 92 employees participated in which male and female participants were 82.6 and 17.4 percents respectively. Evaluation of training effectiveness was usually carried out at PXE in two level of Kirkpatrick's evaluation model i.e. in 'Reaction level' (Level 1) by taking feedback from participants immediately after completion of training and also in Behaviour level (Level 3) by taking feedback from trainee's Group Heads after six months. In all cases participants were satisfied with training and their superiors found trainings were highly effective. The evaluation of knowledge improvement or Learning gain (Level 2) for trainees has been started in 2013.

Keywords : Employee training, Management training, Technical Training, Training effectiveness.

Introduction

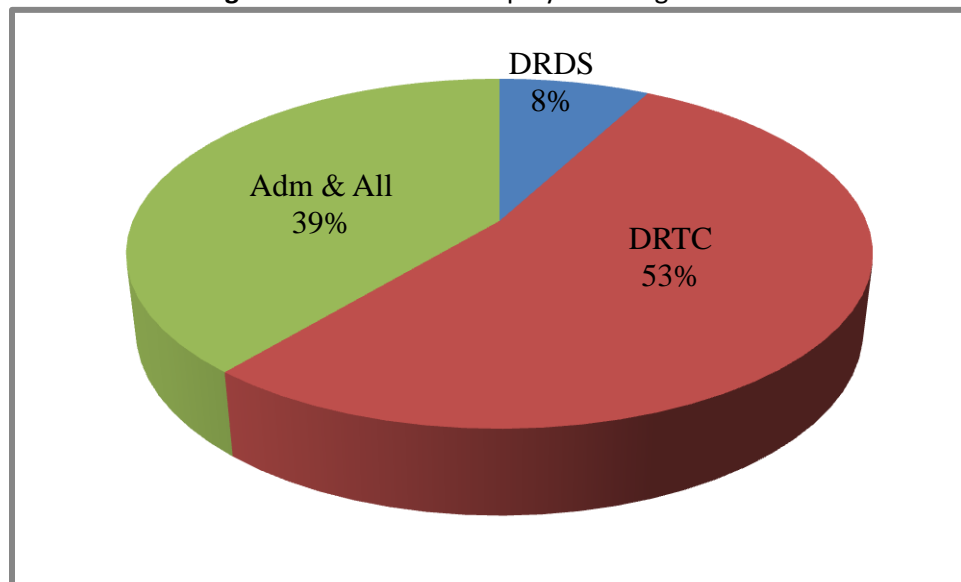
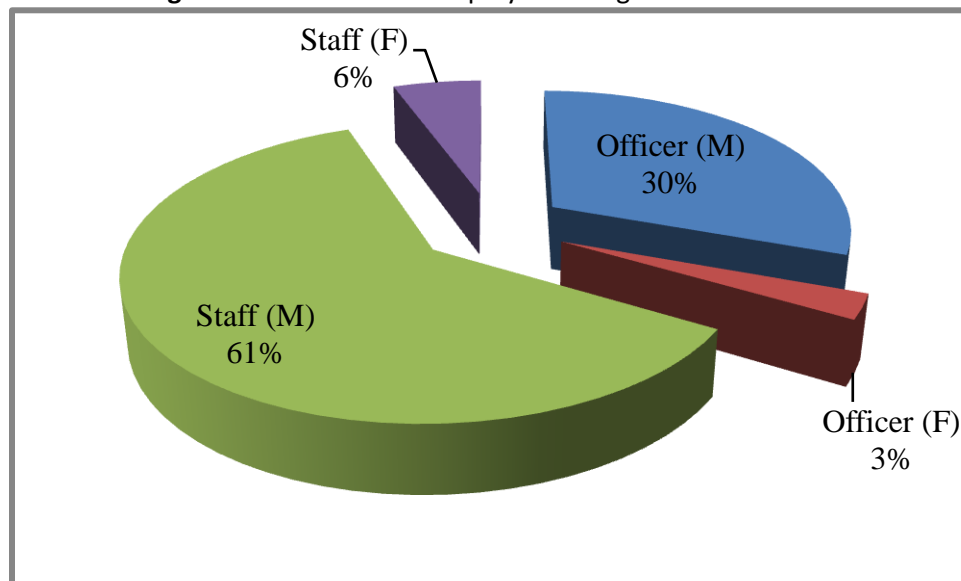
In 21st century, the era of competition, training for employees in the organization is considered as most vital activity not as welfare point of view but as strategic measure to catapult the organization to the next higher level of performance (Sannigrahi, 2015a). According to Ostroff (1991), a well designed and well conducted training program enhances the trainees' positive reactions, their learning on the important materials, changing in their behaviour on the job, and their performance improvements. Employee training promotes a learning culture, reduces resistance to change, develops decision making skills and involves employees actively in the process of decision making rather than to give only new knowledge, skills and abilities to employees (Sanchez, et al., 2003). Training is, however, a costly affair since all government, public, private and corporate sectors including Defence Research & Development Organization (DRDO) spend a considerable amount of time and money on training for facilitating employee's learning of job related competencies (Sannigrahi, 2015b). Three – tier intensive training policy is followed in DRDO to satisfy continuous requirement to upgrade the skills of its employees. These are 'Induction training' for fresh recruits to familiarize them with aims and objectives of DRDO, 'On the job training' for satisfying job requirements at the place of posting and 'Off the job development training' to upgrade skills and to meet the future needs of the organization through 'Continuing Education Program (CEP) (Sannigrahi, 1915a).

Training procedure followed

Proof & Experimental Establishment (PXE), the oldest establishment of DRDO situated in Odisha is busy in carrying out dynamic test and evaluation of various weapons and ammunitions either prepared by India or procured from other countries at its sea-coast Test Range during last 120 years for providing safe and efficient armaments to the braved Army and Navy Jawans guarding the borders of India from enemy soldiers. Employees belong to three different cadres, (a) Defence Research & Development Service Cadre (DRDS, Known as Scientist), (b) Defence Research Technical Cadre (DRTC, mainly Technical Officers, Technical Assistants and Technicians) and (c) Administrative & Allied Cadre (Officers and staff of Administration, Stores, Vehicle operator, Fireman, Fire Engine Drivers and Attendant Multi Skill Workers, etc.) are working hand in hand for fulfilling the mission and vision of the Establishment. Similar to other DRDO Laboratories, employees at PXE are trained through 'Off the Job' training courses either under Continuing Educational Program (CEP) or through some other internal training courses conducted at the Establishment or by sending employees to outside training courses conducted by other DRDO Labs or Specialized organizations. Smith (2000) suggested that 'Off the job' training in a classroom set up using video / DVD lecture, discussion, role playing simulation, etc. helped to develop inquisitive (flexible thought process and open to new ideas) learners by guiding and encouraging them to acquire the skills required to function in work environment. Employees of different subjects work together in any DRDO labs and hence it is a great challenge for any HR Head / Coordinator to arrange different specialized training for achieving perfect satisfaction in upgrading skills among the various categories of the employees (Sannigrahi, 2015a). Training Needs for each employee were identified on the basis of job needs, individual needs and organization needs and accordingly they were sent for training. Since the author was looking after the training of PXE employees during 2009 to 2013 as Head of Human Resource Development Cell (HRDC) of PXE, an attempt has, therefore, been made to critically analyze the trainings carried out for PXE employees during above period on the basis of different cadres, genders, employee's qualifications, etc. This information will be helpful in arranging future training program for PXE employees.

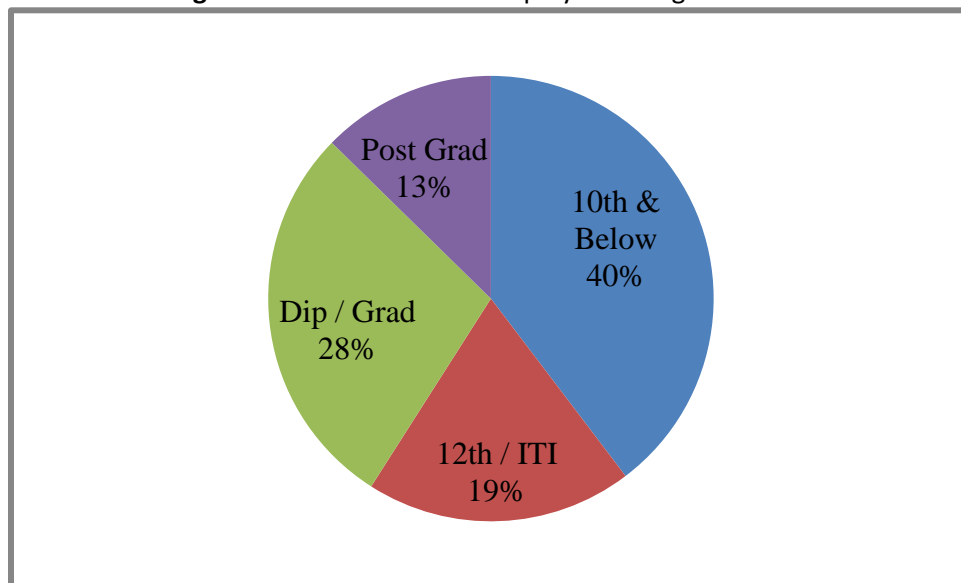
Results and Discussion**Demographic Characteristics of Employees**

Average civilian employee strength of Proof & Experimental Establishment during 2009 to 2013 was found about 537 in which 8 % employees were of DRDS cadre, 53 % employees of Technical cadre (DRTC) and remaining 39 % were of Administrative & Allied cadre (Figure 1). Gender wise it was observed that 30 % were Male Officers, 3 % Female officers, 61 % Male staff and 6 % were female staff (Figure 2).

Figure - 1. Cadre wise employee strength at PXE**Figure - 2. Gender wise employee strength at PXE**

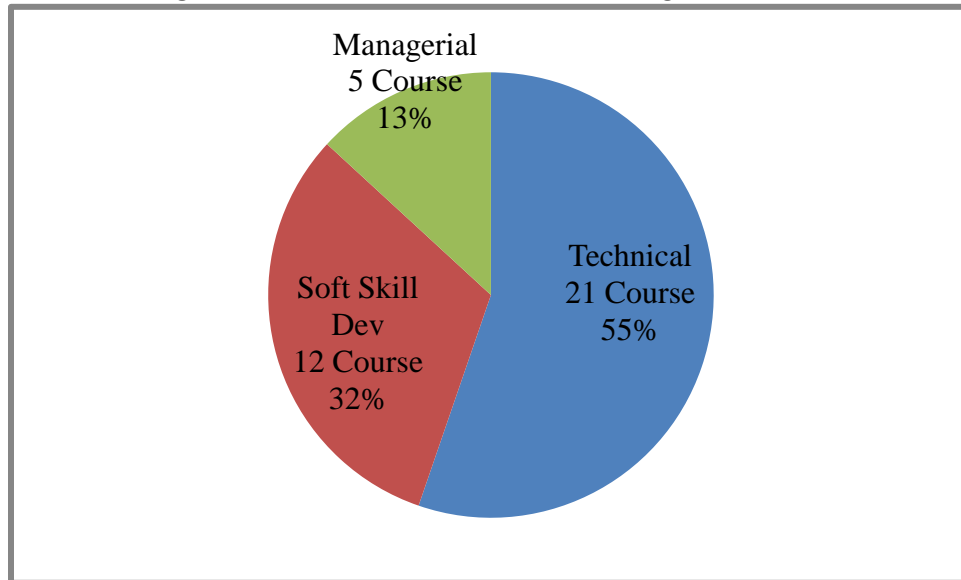
Based on educational qualification all employees were divided into four groups, (a) DRDS cadre having B. Tech / M. Tech / M. Sc / Ph. D degree, (b) Technical cadre (DRTC) both as Technical Officers and Senior Technical Assistants having graduate in Science / Diploma in Engineering degree, and also (c) as Technicians and Technical Assistants having 12th Standard / Industrial Training Institute Trade passed certificate and (d) Admin & Allied cadre with 12th standard or 10th standard examination passed certificate. Both DRDS and DRTC were busy in technical works of the establishments. Figure 3 shows the educational qualification status of PXE employees. Since the work in relation to 'Test and Evaluation of Armaments' are mainly laborious, 40 percent employees possess 10th standard or below qualification and known as Group 'C' category workers. Only 28 percent employees have Diploma or Graduate in Science degree and 13 percent have B. Tech, M. Tech or higher degree. Scientists and some Technical Officers come in this group.

Figure - 3. Education wise employee strength in 2013



Training conducted for employees

Employees were trained either by conducting 26 CEP training courses and 12 other courses at PXE during 2009 to 2013 or by sending employees to attend different CEP training courses conducted by other DRDO labs or to attend other specialized courses conducted by some professional institutes. It was seen that among CEP courses conducted at PXE, majority (55 percent) were Technical trainings mainly on technologies for effective Test and Evaluation of Armaments and different Safety Procedures while 13 percent training courses were on Administrative and Human Resource Management topics and 32 percent trainings were for soft skill development (Computer fundamentals, Multi skill development, etc.) (Figure 4).

Figure - 4. Courses conducted at PXE during 2009 - 2013

In five years under CEP 439 employees were trained at PXE and 165 employees were trained at other DRDO labs. About 306 employees got training through 12 internal training courses carried out at PXE while 443 employees got training externally from various professional institutes (Table 1).

Table - 1. Year wise break up in number of employees trained during 2009 - 2013

Participants	gender	2009	2010	2011	2012	2013
(a). At CEP conducted by PXE						
Officer	Male	13	19	35	31	12
	Female	4	3	3	6	0
Staff	Male	30	60	76	75	55
	Female	0	3	14	0	0
Sub total		47 (3)*	85 (5)	128 (8)	112 (6)	67 (4)
* Number in parenthesis indicates number of CEP courses conducted						
(b). At Other course conducted at PXE						
Officer	Male	0	15	1	47	20
	Female	0	4	0	7	2
Staff	Male	65	31	46	9	19
	Female	12	10	1	15	2
Sub total		77 (2)**	60 (2)	48 (2)	78 (3)	43 (3)

** Number in parenthesis indicates number of other courses conducted

<i>(C). At CEP conducted by other DRDO Labs</i>						
Officer	Male	9	11	27	19	10
	Female	1	1	0	0	2
Staff	Male	13	12	28	22	7
	Female	0	2	0	1	0
Sub total		23	26	55	42	19
<i>(d). At Other courses conducted by outside organizations</i>						
Officer	Male	20	33	31	45	47
	Female	2	3	2	6	1
Staff	Male	43	100	25	46	21
	Female	0	7	0	7	4
Sub total		65	143	58	104	73
Total		212	314	289	336	202

Maximum employees got training through CEP during 2010 to 2012 due to arranging more training courses. Trainee's number in outside training also varied depending on the necessity of deputing employees to courses satisfying the job needs of the Establishment. Number of trainees in five years was 1353 (male 1228 : female 125), more than the double the strength of employees at PXE, which confirmed that many employees got chance of training more than twice or thrice. It showed the excellent work done carried out by HRDC team of PXE on 'Training and Development' under the leadership of the author fulfilling the DRDO HR Training Policy i.e. frequency of training as minimum one for each employee in five years. Figure 5 depicts that in trainings during 2009 to 2013 male trainees (87.5 to 94.5 %) irrespective of officers and staff dominated in comparison to female trainees (5.4 to 12.5 %). This was obvious as the strength of male employees were considerably high in the Establishment as shown earlier in Figure 2.

Cadre wise break up of trainees in attending CEP courses as shown in Figure 6 clearly indicates that DRTC trainees were maximum (391) followed by Administration & Allied (114) and DRDS (99). DRTC employees got more scope every year which was obvious as 53 percent employees of PXE belong to DRTC (mentioned earlier in Figure 1). Since most of the employees got training as per their training needs in 2010 to 2012, trainee's number was automatically reduced in 2013.

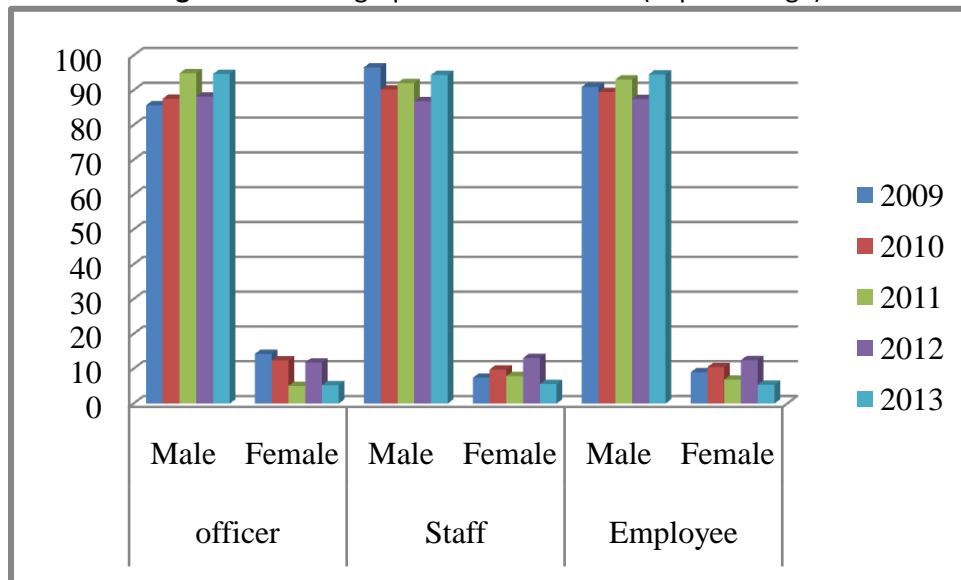
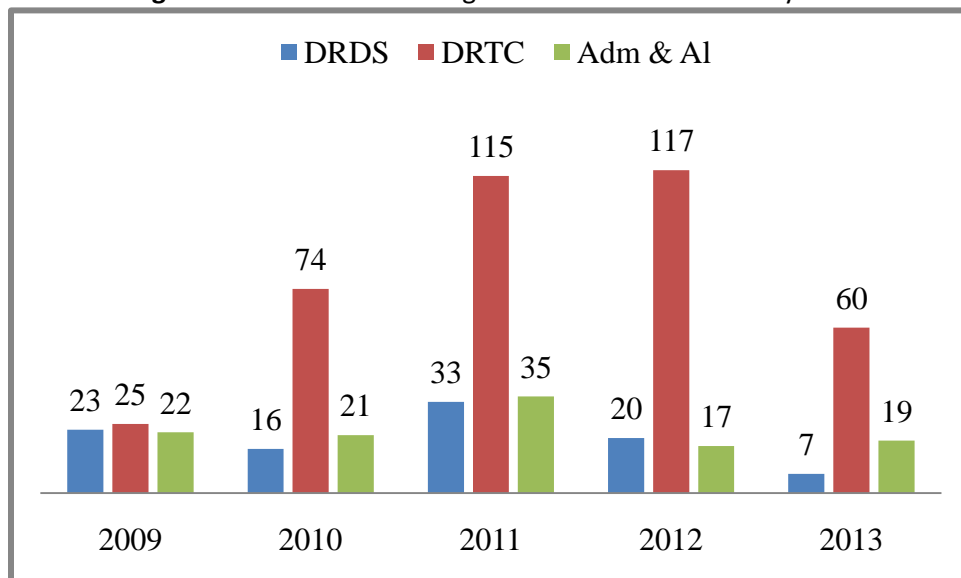
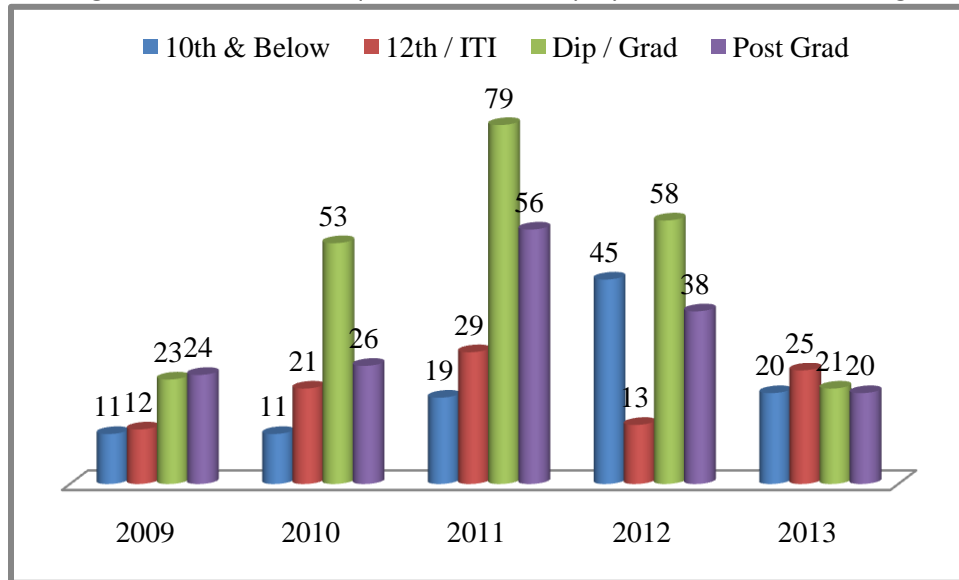
Figure - 5. Demographics of the trainees (in percentage)**Figure – 6.** Cadre wise strength of trainees in different years

Figure 7 also confirmed that DRTC employees having diploma or Graduate degree attended maximum training followed by employees having post graduate or above degree (mainly Scientists) every year up to 2012 and thereafter training requirement was reduced for every group of employees.

The allotment and expenditure of 'Training Budget' as shown in Table 2 also indicates that about 5.1 to 7.5 lakhs budget was allotted to PXE every year by DRDO Headquarter and almost 92.5 to 99.9 percent budget was spent during 2009 to 2012. The expenditure for 2013-14 was only 71.3 percent confirming earlier suggestion that demand for employee training was less in 2013 since all most all employees got already training as per their training needs.

Figure – 7. Educational qualification of employees detailed for training**Table - 2.** Allotment and Expenditure of Training Budget(Lakhs) at PXE during 2009-2014

Tr. Budget	2009-10	2010-11	2011-12	2012-13	2013-14
Allotment	5.10	6.50	7.50	7.35	7.00
Expenditure	4.72	6.35	7.49	7.07	4.99
	(92.5 %)*	(97.7 %)	(99.9 %)	(96.2 %)	(71.3 %)

* Percentage of Allotment budget spent at PXE on training

Participation of employees in seminars, symposium and conferences and presenting research article are also considered an important form of training. Though nomination depends on getting information from the organizers in time and also on topics suitable to activities of the Establishment, total 92 employees were detailed during 2009 to 2013 for attending various seminars, symposium and conference (Table 3). Male female participation in percentage was about 83 : 17 indicating no discrimination was made on the basis of gender since the ratio in employee strength was 91: 9 (Figure 2) and employees were always encouraged for participating in these activities.

Table - 3. Gender wise participation in Seminar / Conference / Symposium

Participants	Gender	2009	2010	2011	2012	2013
Officer	Male	9	10	18	11	23
	Female	2	2	1	3	2
Staff	Male	2	0	0	0	3

	Female	1	2	0	1	2
Total		14	14	19	15	30
Percentage of Male Participants		78.6	71.4	94.7	73.3	86.7
Percentage of Female Participants		21.4	28.6	5.3	26.7	13.3

Effectiveness of training is usually depends on the interest of individual, the institute and the trainers. Evaluation of training effectiveness was usually carried out at PXE in two level of Kirkpatrick's evaluation model (Kirkpatrick, 1978) i.e. in 'Reaction level' (Level 1) by taking feedback from participants immediately after completion of training and also in Behaviour level (Level 3) by taking feedback from trainee's Group Heads after six months. In all cases participants were found satisfied with training and their superiors reported that trainings were very effective. In 2013 the evaluation on learning gain (Level 2) of participants was started by the author by arranging Pre- and Post Test score of each participant. The learning gained was noticed about 29 to 55% depending on age, educational qualification and openness of mind of the trainees (Sannigrahi, 2015b).

Conclusion

The Human Resource Development Cell plays an important role in Laboratory level in identifying the training needs of each employee and thereafter in detailing them in appropriate training for excelling their skill, for timely removing professional obsolescence and for bringing enjoyable working environment. This article shows that if proper training is arranged in time bound and need based manner then requirement of training budget can be considerably reduced without jeopardizing the training requirement of employees, the Human capital. HRDC team has to be very particular and unbiased during detailing employee for training to uphold the necessity of training as per individual needs, job needs and Institutional needs, otherwise the training will not be effective and interesting.

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