

Training of Trainers
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Lecture 35 - Cost Benefit Analysis

We will be discussing a very important aspect of the training and that is about the money part—the cost and benefit analysis. So a trainer has to first measure that is at what cost he is doing this particular training program and this is the investment and definitely, he will be looking for the ROI, Return on Investment. However, this is financially also and non-financially also.

So whenever we are talking about the financially, so financially means that we will be talking about the different elements and the costs associated with them. But the non-financial cost also and that is the intellectual capital. What type of the intellectual capital he is creating and investing in this particular training program.

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Cost – Benefit Analysis

Cost-benefit analysis is the process of determining the economic benefits of a training program using accounting methods that look at training costs and benefits.

Training cost information is important for:

- To understand total expenditures for training.
- To compare the costs of alternative training programs.
- To evaluate the proportion of money spent on training development, administration, and evaluation as well as to compare monies spent on training for different groups of employees
- To control costs.

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So in the cost-benefit analysis, the cost-benefit analysis is the process of determining the economic benefits of a training program using the accounting methods that look at training costs and the benefits are there. The training cost information is important, right? So naturally, we have to be very careful while designing the training program. And then while designing the training program, we should know that is what cost will be required to incur in this particular training program.

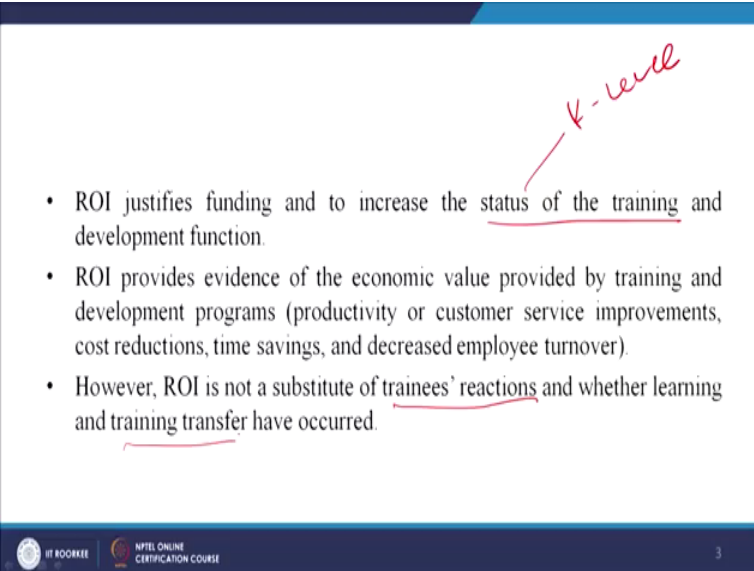
Training cost information is to understand total expenditures for training that what will be the total expenditure for this particular training. And to compare the cost of alternative training programs. And then we have to also see that is what cost is there for this particular training program and what alternative cost will be there for this particular training program. So we have to compare also. And then we have to make the most economic benefits, right?

So therefore, in that case we are concerned with the economic benefits that is to be there in this particular type of the training programs. To evaluate the proportion of money spent on training development, administration and evaluation. Training development is also having the very huge cost and evaluation. As well as to compare moneys spent on the training for different groups of employees.

So cost will be on the training development, that we have to consider. In administration of the training program, that cost we have to consider. And evaluation as well as that to compare moneys, right? That is also very very important, spent on training for different groups of the employees. And if you find that is any particular training program if it is incurring the huge cost or otherwise also, we have to keep in mind to control the cost.

The cost is to be controlled and then if we are able to make it cost-effective training program, then definitely the sustainability and the demand of that particular training program will be more.

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A slide from an NPTEL online course. It features a list of three bullet points. The first bullet point is "ROI justifies funding and to increase the status of the training and development function." A handwritten red arrow points from the text "K-level" to the underlined phrase. The second bullet point is "ROI provides evidence of the economic value provided by training and development programs (productivity or customer service improvements, cost reductions, time savings, and decreased employee turnover)." The third bullet point is "However, ROI is not a substitute of trainees' reactions and whether learning and training transfer have occurred." The slide has a dark blue header and footer. The footer contains the NPTEL logo, the text "NPTEL ONLINE CERTIFICATION COURSE", and the number "3".

- ROI justifies funding and to increase the status of the training and development function.
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So when we talk about the ROI, Return on Investment, so Return on Investment justifies the funding and to increase the status of the training and development function. Now here the one word that you have to understand very carefully, 'status of the training'. How will you measure the status of the training? The status of the training that has to be measured in the terms of that is what content knowledge level. That is very very important. That is, whatever be the ROI you are investing, that ROI is to be justified that the what knowledge level.

And you see, that is the knowledge level, intellectual capital, measurement of the intellectual capital, creation of human capital, right? And therefore nowadays it is easy and possible to measure and evaluate this particular intellectual capital and human capital. Skandia was the first company who has evaluated and examined the intellectual capital and then now we find that it is becoming a common practice in the organization to measure the human capital.

So the status of the training program will depend on the knowledge level, who is conducting the training program, what experience he is having, what qualifications he is having. So this will be the status of that particular training, right? That is at what level the trainer is, so highly experienced is there, highly skilled is there, highly qualified trainer is there, then definitely that knowledge level is expected to be the high level of knowledge.

Second is development function. How do you develop that particular training program? Suppose we are conducting a training program on the employee loyalty. If employee loyalty is to be conducted then definitely the status of the training and the development of that particular function that has to be taken care of with the help of the what return will be there with developing the level of the employees in the organization.

So if you are increasing the employee loyalty and then you are minimizing the employee turnover of any organization, then definitely it will be a great ROI on that particular training program. So monetary you can measure but non-monetary also you will find that this development function is there.

ROI provides evidence of the economic value provided by the training and development programs. That is whatever training program is there and this will be the productivity. As I mentioned, increase in the productivity that is in the quantity and quality both. And when you are conducting a training program and by the training program, you are improving the quality of the

product, then definitely because you increasing the productivity, so quality has increased, so definitely it will be there.

Or very very important and interesting is customer service improvements. So when you are talking about the role of technology, use of technology, use of these FMCG products, you are talking about this consumer's behavior, then all these aspects that we have to consider in terms of whether the customer is not only satisfied but the customer is delighted. And if the customer is delighted, then definitely you are increasing the customer services of that particular organization.

Then cost reductions. So many consultancy companies, they are conducting this training program to reduce the cost of manufacturing. They identify, so as I mentioned, that is the six sources: man, machine, material, money, method and minutes, right? So of these six sources resources and then when you are reducing the cost, right? Maybe in the method. So therefore it might be very very important that you are conducting a training program, you are going through the different methods and then suggesting the appropriate methods. Trainees go back to their work place and they adopt a particular method on trial basis first, they run it and they find that it is becoming very very cost-effective. Then definitely that will be reducing the cost.

So as I mentioned, the sixth one is 'minutes' that is the time savings. If there is a time savings, then definitely in that case it is becoming very very important that you are saving the time by making this particular training program.

And decreased employee turnover, as already I mentioned, that is by this productivity and turnover are the common outputs are there of a particular training program. And the satisfaction of these internal customers that is the employees and the external customers that those who are buying the services.

However, ROI is not a substitute of trainees' reactions and whether learning and training transfer have occurred, right? So sometimes it is possible that your ROI is very high but the trainees' reactions may not be positive. Or whether the learning and training transfer is very high but the cost is not saved. So therefore in that case, we have to understand that ROI is just a parameter, monetary parameter, economic parameter right? Because there is a tangible and intangible capital. So therefore we have to consider both.

But we talk about the ROI mainly and then we will find out how the process of determining the ROI is to be implemented. The training plans are developed for collecting data related to the measuring objectives. So therefore, first and foremost is that in the large organizations, large enterprises, it becomes very important that is what type of the objectives are there, what we want to achieve.

Identify the objectives. Because these objectives are converted into the training need assessment. So therefore, it becomes very very important, that is, whatever data you are collecting, you should be very clear with the objectives, that is what is the objective and why we are collecting this particular data. And therefore in that case, it will be measuring the objectives.

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Process of determining ROI:

- Plans are developed for collecting data related to measuring objectives.
- Isolate the effects of training from other factors that might influence the data.
- Conversion to a monetary value and calculation of ROI.
- **ROI analysis is best for training programs that are focused on an operational issue (measurable identifiable outcomes), are linked to a companywide strategy, are expensive, are highly visible, have management interest, are attended by many employees, and are permanent.**

Isolate the effects of training from other factors that might influence the data. So therefore in that case we should be very careful, that is whatever data is there and then the effects of the training that we have to separate it. Because the data will give particular objectives and those objectives may be having different processes and those processes may be having the different effect of the training.

Conversion to a monetary value and calculation of ROI: So in process of ROI, that is we have to create a monetary value, right? And especially when it is becoming very subjective, right? Then we have to see the calculation of ROI. ROI analysis is best for training programs that are focused on operational issues. So therefore, this is the for the particular training program, one should be

very much highly focused on the return on investment issue. Especially, first it will be easy step. So the easy step will be measurable, identifiable outcomes.

It is a big challenge for a training program because the training program means the learning transfer and learning transfer is a tacit knowledge. So whenever we are talking about the tacit knowledge and the explicit knowledge, explicit knowledge yes, you can make the measurable. But when you are talking about the tacit knowledge, then definitely in that case it becomes very very important that is what is you want to make the measurement of the explicit knowledge first and then the tacit knowledge also. I will come to that part.

...are linked to a companywide strategy. So what is the strategy of the company? So when we talk about KBOs, knowledge based organizations, those business is based on the knowledge of the employees, then definitely research organizations basically or the new product development organizations, what is the objective? So there are many companies when we talk about the ABC companies, then those companies are more focused to come out with a new product. They do not want the shelf life of their product is to be long.

And therefore...but who will come out with the new product development? That is the employee. And that employee's....I will be taking one session on design thinking and then that employee's thinking process of innovation and creativity, that is becoming very very important. That is, how do you proceed with that particular design thinking and the process? And what is the objective?

So now, what is the objective? It is the thought process. The training programs are to be designed that is how you can channelize the thought process, the human brain thinking process because you are competing with the AI, right? That is also a part of our group discussion. So therefore in that case you will find that it becomes very very important, role of artificial intelligence and that intelligence of human capital. And then ROI of intelligence. Right?

So therefore in that case what is the companywide strategy that has to be defined? Then they are linked to the expensive. Naturally, when we are talking about the ROI operational issues, so companywide we have to find out strategies and then there will be these programs that will be expensive. Are highly visible because measurable, so you can easily see. This is the input, this is the process, this is the output. So that should be visible wherever measurable is there. For example, productivity, so measurable will be there.

Have management interest. Naturally, in that case whatever output you are looking for, that should be the interest of the management. Sometimes management may not interest. Like you are investing in this, then you say okay there will be reduction in employees turnover. And management may say no, keeping the old employees is not my intention. Keeping the employees, retaining the employees for long term is not my intention because the nature of our organization is that I want fresh ideas for a particular department, a particular section, a particular job.

So if the person will continue for long on a particular job where new ideas and fresh mind is required, it will not make any sense to ROI. So therefore, in that case that have the management interest, what is the management's interest is there?

And are attended by many employees. Those who are the employees they have attended and are permanent. And therefore definitely, they are the employees where they want to be the, they are the permanent employees. It means that ROI analysis is best for the training programs that are focused on an operational issue that is the measurable identifiable outcomes. Those ROI analysis those which are linked to a companywide strategy, what is the strategy of the company, that should be the parameters in ROI.

And there are expensive issues and are highly visible that is, yes this is the particular act is to be done and then there will be the outcome. And outcome is to be measured and have a management interest, interest of management unattended by many employees. It is not only restricted to some of the employees and are permanent, so that is, it is a continuous process. It will not stop, it will be permanent in nature.

So to find out the ROI, you have to determine the cost. So how to determine the cost?

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Determining Cost

Resource requirements model

- It compares equipment, facilities, personnel, and materials costs across different stages of the training process (needs assessment, development, training design, implementation, and evaluation).
- It helps in determining overall differences in costs among training programs.
- Costs incurred at different stages of the training process can be compared across programs.

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So resource requirement model, first we will first talk about. It compares equipment, what equipments, what facilities, who are the personnel, manpower engaged and material costs, what will be the material costs across different stages of the training process?

So therefore, what, you have to make a list of what equipments are going to be required in this particular training program. Each and every one nail down. Then what was the facilities which we are going to provide? And if these are the facilities which we are going to provide, then we have to see what will the cost. So a list of the facilities.

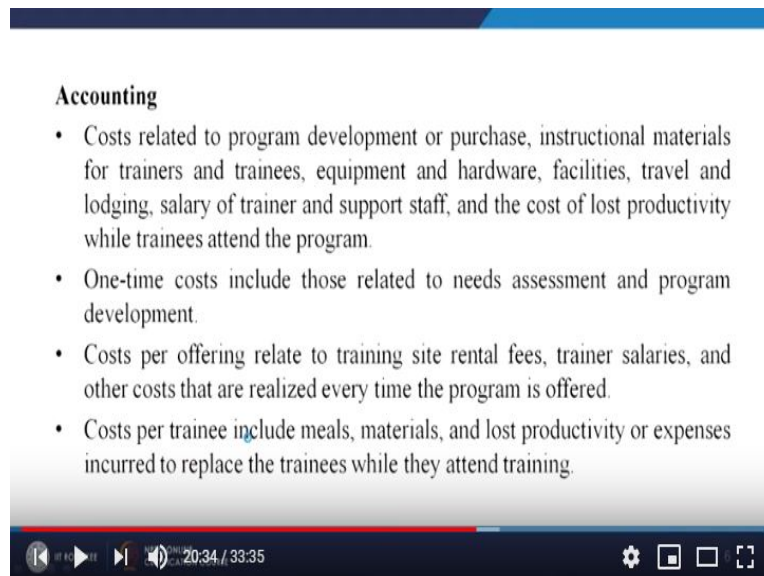
Each and every employee right from top to bottom, who is getting engaged, spending time from the organization for this particular training program. And what material is going to be used? And therefore, in that case, that material cost across the different stages of the training process, that has to be used. This requires assessment, development, training design, implementation and evaluation. So therefore, this will be the part of how the training design needs to be there. What should be the training design, what will be the implementation and what will be the evaluation, that we have to consider at the time of resource requirement model.

Next is, it helps in determining overall differences in cost among the training programs. So therefore, whatever different costs are there for the training program, it should be very clear-cut and it should be very very specific and it should be able to determine what will the cost among these training programs. Cost incurred at different stages of the training process can be compared

across program. So therefore whatever the cost is incurred at the different stages, then that can be compared across the programs.

Why I am talking again for the across the training programs? Because you can see where it cost more, where it cost less. And also, if any element is left out or every element is covered, right? So therefore, that will help in determining the cost.

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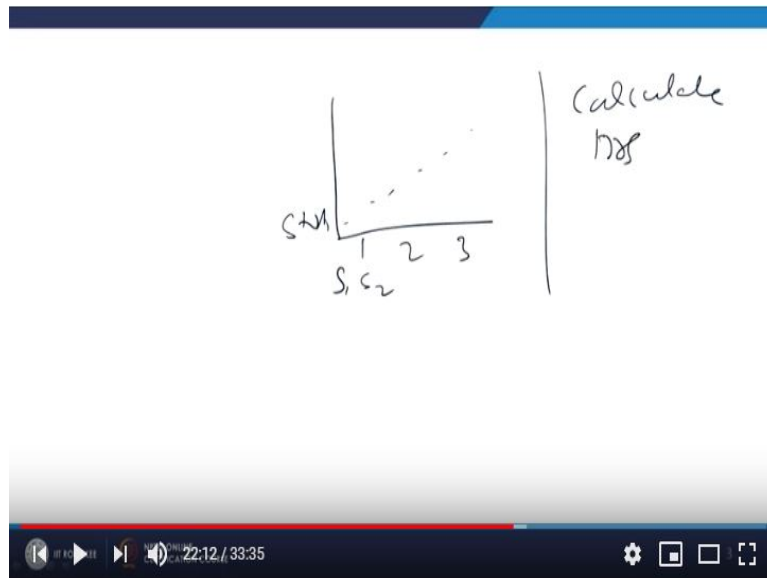
Accounting

- Costs related to program development or purchase, instructional materials for trainers and trainees, equipment and hardware, facilities, travel and lodging, salary of trainer and support staff, and the cost of lost productivity while trainees attend the program.
- One-time costs include those related to needs assessment and program development.
- Costs per offering relate to training site rental fees, trainer salaries, and other costs that are realized every time the program is offered.
- Costs per trainee include meals, materials, and lost productivity or expenses incurred to replace the trainees while they attend training.

Second is accounting. Costs related to program development or purchase, instructional materials. So whatever the development or purchase is there for conducting this training program. For example, you are going for the recording the training program, then definitely that particular cost of the training program will increase very high. When you are comparing with another training program, it is possible that in another training program that cost is not necessarily that will be incorporated. So therefore, this instructional materials for the trainers and trainings, this is very very important. That is, what instructional materials you are providing for the trainer and training.

For example, when we are talking about this particular cost in the instruction material, we have to consider the cost which we are going to incur is it is going to be the right one or not?

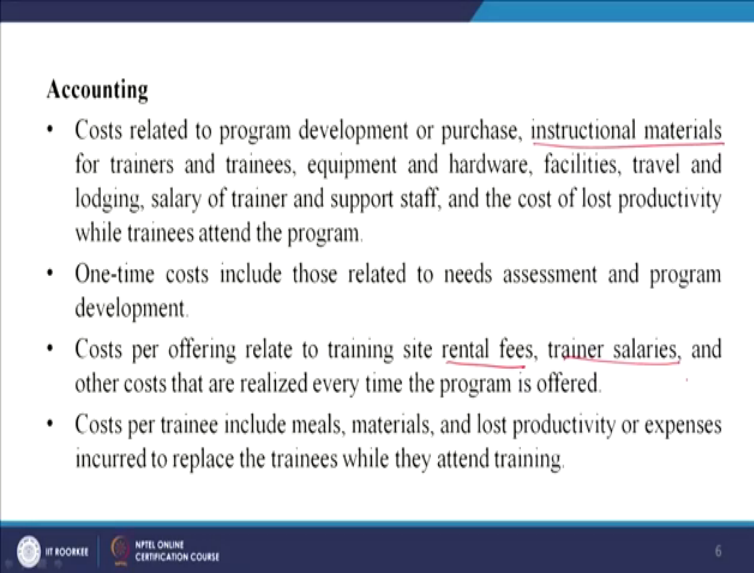
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So therefore, if you are plotting a graph, then you are plotting the graph for the first day, second day, third day and then the level of the study material you are providing, then you have to see that whatever the cost you are incurring that cost has to be calculated.

Calculate that cost for each day. And not only each day, the session one, sessions two. So if you are conducting this type of the material designing and what material is required, now here please also understand another important part that is the hours. The hours for the preparation of material. Because then whenever we are talking about this particular cost of the training, then it will be very very important what type of the instructional materials you are using.

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Accounting

- Costs related to program development or purchase, instructional materials for trainers and trainees, equipment and hardware, facilities, travel and lodging, salary of trainer and support staff, and the cost of lost productivity while trainees attend the program.
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If you are using a particular type of instructional materials for trainers and trainees, then definitely in that case, you have to see the level of the instruction material. And then for the trainers and trainees, those study material that is becoming a real crux of the learning. So that accounting is to be taken for the level of content which has been introduced.

Then as I mentioned, equipments and the hardware. Simple hardware is like your projectors that you are using, the laptops you are using or if it is a video recording, then the cameras you are using, right? And as compared to the other small equipments here and there, that you have to consider and then you have to consider the cost for that particular equipment.

The facilities, classroom facilities, right? The air conditioning facilities, then the temperature monitoring facilities, right? Then the electricity supply. So every element is to be considered. So whatever facilities you are providing, every facility is causing a cost even if you have your own HRD center. So naturally there has to be some charge for that room directly or indirectly. You are not calculating on the basis of charging fees. But you have made an expenditure, the organization has made an expenditure and then they are providing facilities to the trainees and those facilities are to be listed down and there should be some cost to be associated with that particular facilities.

Then the travel cost. If trainers are more than one, then definitely in that case you have to invite and that cost will be there. Sometimes it is a sponsored training, sponsored training by

government or some other agencies. Then in that case for the participants you provide this type of the travel cost. For example, we conduct the quality improvement programs QIPs and in QIPs the participants and faculties are paid. Then in that case the travel cost there, that is also be incorporated. Then you are providing the lodging facility. So lodging facility also has to be taken. So lodging and boarding facilities, all have to be taken into consideration.

Salary of the trainer. Now it is a very interesting cost. So if you are having the fixed trainers, they are taking the training sessions so that is the part of the salary. But if you have variable pay, that is this will be the minimum cost; salary. And conducting per training program, there will be an additional amount that will be paid, right? But then that additional amount, that cost is also to be taken.

The supporting staff, that cost is also very very important. That is, you have to justify whatever supporting staff you have asked from the organization and they are contributing more, number of training programs have increased, your revenue is generated, so this accounting has to be done. And the cost of the lost productivity. Because the trainees are from industries and when they are coming to attend the training program, so wherever they were working they are absent.

And if they are absent from there, is it affecting the productivity and how much cost is there for they are remaining absent from their work place? That is the productivity cost is there while trainees attending the program. So that cost of the, their absence cost from the workplace and that cost is also to be taken into account.

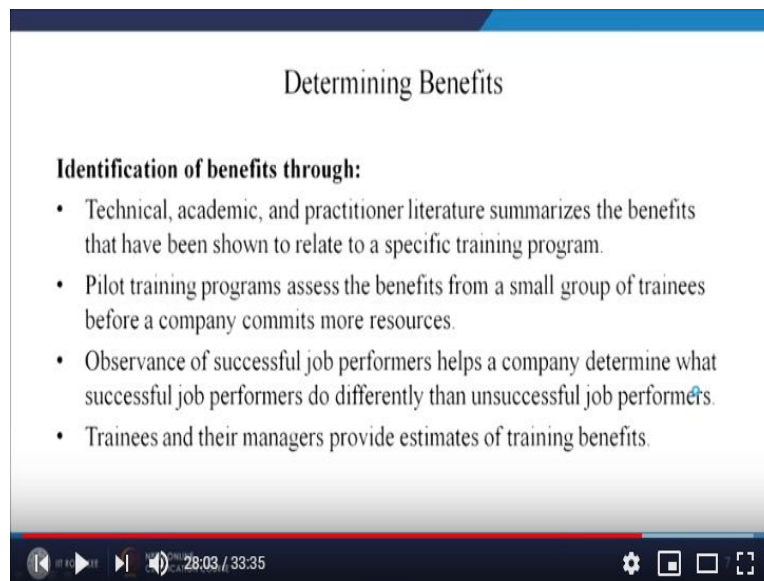
Onetime costs include those related to needs assessment and the program development. And therefore in that case, whatever onetime cost is there, that has to be included to needs assessment and program development like the infrastructure. Cost per offering related to training site rental fees, trainer salaries and other costs that are realized every time the program is offered. So therefore, whenever there is a training program, then there will be the training site rental fee, then the trainer salaries for particular training program and the other costs that are realized every time that has to be taken into consideration.

Costs per trainee include meals, material and lost productivity or expenses incurred to replace the trainees while they attend training program. So this cost, already I mentioned above and

therefore but the cost of the trainees' meals also has to be taken into the consideration. And as I mentioned loss of the productivity away from the workplace, that is also to be taken care.

So finally, we come to the benefits. That is what will be the benefits of this particular cost and benefit analysis.

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Determining Benefits

Identification of benefits through:

- Technical, academic, and practitioner literature summarizes the benefits that have been shown to relate to a specific training program.
- Pilot training programs assess the benefits from a small group of trainees before a company commits more resources.
- Observance of successful job performers helps a company determine what successful job performers do differently than unsuccessful job performers.
- Trainees and their managers provide estimates of training benefits.

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The benefits will be technical, academic and practitioner. Literature summarizes the benefits that have been shown to relate to a specific training program. So naturally whatever there will be the gain in the technical areas of the, technical areas or technical means job knowledge, job performance, productivity. Benefits will in the academic area that is the knowledge base level. That will be increasing. And practitioner literatures that is whatever practitioner literature is there, that benefits will be there.

Pilot training programs assess the benefits from a small group of trainees before a company commits more resources. So this type of the training programs which are assessing the benefits from a small group of trainees, right? So then that can be there and the company can commit more resources for these particular purposes.

Observance of successful job performers, right? Those who have gone for training, when they come back from the training you observe their performance and then the job performance is successful, they are performing better, helps a company determine what successful job

performers do differently than unsuccessful job performers. This is the point of the tacit knowledge. Those who attended the training, their performance is compared with those who have not attended the training program and rest of the things are constant. The rest of parameters, dimensions are constant.

Then in that case you will find that whatever successful job performers are there, right? Because they have attended the training, it is going up. Trainees and their managers provide estimates of the training benefits; that is what will be the outcome, what will be the delivery, what is the expected outcome, that benefit has to be there. So there will be the cost and there will be the benefit. So naturally benefits are to be more than whatever cost is there, so then you can say that will be the ROI, Return on Investment.

The last slide which I would like to share with you is that, that is what will be the steps of cost-benefit analysis?

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Steps of Cost – Benefit Analysis

1. Identify outcomes (e.g., quality, accidents)
2. Place a value on the outcomes.
3. Determine the change in performance after eliminating other potential influences on training results.
4. Obtain an annual amount of benefits (operational results) from training by comparing results after training to results before training (in Rupees).
5. Determine the training costs
6. Calculate the total savings by subtracting the training costs from benefits
7. Calculate the ROI by dividing benefits by costs. The ROI gives an estimate of the Rupees return expected from each rupee invested in training.

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So first, identify the outcomes, expected outcomes, that is, the quality and accidents. Place a value on the outcomes, that is what will be the value on that particular outcomes. Determine the change in performance after eliminating the other potential influences on training results. So therefore what will the change in performance will be there after attending the training program and then you have to eliminate whatever problems will come up and potential influences will be there and then actual what will be the benefit?

Obtain an annual amount of benefits that is operational results, whatever operational results are there that you have to obtain from the training by comparing results after training to results before training. That is the whatever results are there after the training have to be compared to before training. That is in Indian Rupees because we are talking about Indian currency. However, as I mentioned that we also conduct the international training programs.

And when we are conducting international training programs, in that case definitely, your currency will be Indian Rupees but then you have to consider that particular cost. Determine the training cost. That, what will be the cost that you have to take care? Calculate the total savings by subtracting the training cost from benefits. So therefore, whatever the total saving is there and whatever cost you are talking about, that cost has to be, you have to reduce. And as a result of which, that when you are having, after subtracting that cost you are having the total savings and that will be the ROI on your investment.

Calculate the ROI by dividing benefits by cost. The ROI gives an estimate of the Rupees return expected from each Rupee invested in the training. So whatever amount is invested in that particular training and then if you are making this list, you are following these steps and considering each and every element whether it is tacit, whether it is explicit and it is direct or indirect and then all cost you have considered and then you are talking about the benefits and those values of the benefit is very high. So then it will be a rich training program.

This is all about the cost and benefit analysis. So I stop here about the cost and benefit analysis. Thank you.