

**Training and Development**  
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**Module – 08: Technology Based Training Methods**  
**Lecture - 36**  
**Technology Based Training : Concept, Types and Importance**

Welcome to the module 8 of the lecture sessions on Training and Development. In module 7, we have learnt about the traditional methods of training, but in module 7 we have learnt about the traditional methods of training. But as we know like if we have to give training to a multiple group of people together or we have to arrange for training which is occurring in like virtual conditions as we are faced like in these pandemic situations.

And if we have to like target a major group of people or we have to make training self based like, if the model of training is such as we have seen in strategic training sessions models that we have discussed on module 2 of the lecture if you remember.

We have discussed about the business embedded model of training where like the trainees get a chance to learn as per their availability, as per their like when it is as we call the self based training. So, in those cases it is very important like we take the help of technology in delivering the training.

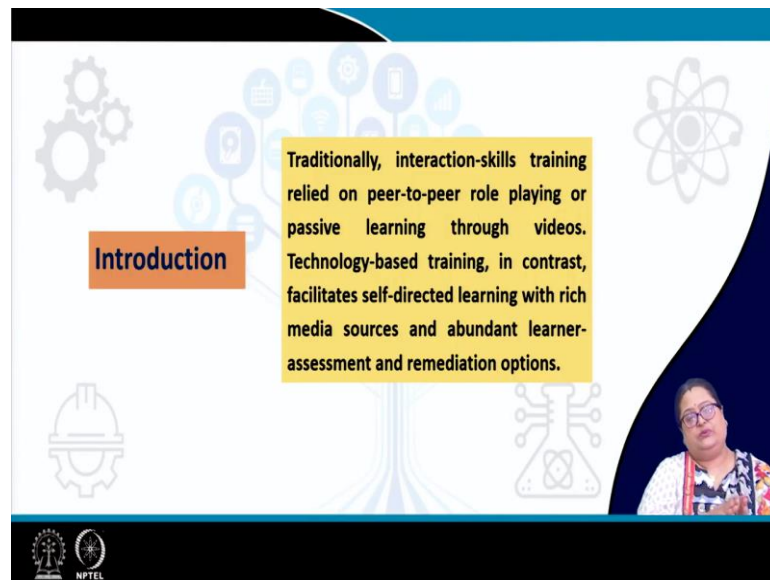
So, in this module we are going to learn about the Technology Based Training, what are the different concepts types and its importance? So, let us begin.

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So, this part of the lecture session will be held on the concept an importance of technology-based training.

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So, what is the difference of these traditional training and the technology-based training as we are telling. Like in the traditional ways of delivering training, the interaction skills training which is more focused on peer-to-peer role playing or passive learning through videos. Technology based training in contrast the main focus is on self directed training with rich media sources and abundant learner assessment and remediation options.

So, as we told self-based training, self-paced training, self-directed learning which helps you to be focused on learning on your own which we can also talk of this as a learner centred method of training. And so, there are a lot of assessments done, and you get the feedback, and how to take remedial actions; so, these are the focus of technology-based training.

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The slide is titled "Technology Based Training" in an orange box at the top. Below the title, there is a yellow box containing the text: "Technology-based training has been caused by multiple environmental factors including:" followed by a bulleted list: "• Globalization", "• Economic Pressure", "• Work-life Concern", and "• Technological Advancement". To the left of this yellow box is an orange arrow pointing right, labeled "Environmental Factors Influencing". The slide background features various icons: gears, a lightbulb, a network diagram, a hard hat, and a chemical flask. In the bottom right corner, there is a small video inset of a woman speaking. The NPTEL logo is visible in the bottom left corner.

So, why it has become important like the environmental factors if we understand which influences this technology-based training is like of course, the globalization as we understand like the different pressures coming up, then the organization trying to expand into multiple geographies. But then if that has to be done, then we have to like design the training as for the needs of the job, as for the needs of the culture as for the needs of the employees.

So, in that case like very customised training programs needs to be developed. So, these are important to make this training deliverables more customised; so, technology-based training help us to do that. So, globalization, then economic pressure, then of course, work life concern and like in self-paced training or self-directed training it helps us to balance both the work in life and take the training as per like our free time, our availability, and convenience as per the convenience; so, the these are important.

And of course, the technological advancement which help us to learn from anywhere the like if there is a business university somewhere and we want to imbibe the knowledge we

can do it based on the technological advancement which is there. And this for technological advancement also we need to get certain training; so, that we can adapt ourselves to the like the changes in the technology.

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The slide is titled "Technology Based Training" in an orange box at the top center. Below the title, there is a yellow callout box with a rounded top-left corner. Inside this box, the text reads: "• Globalization For highly decentralized organizations with employees dispersed around the globe, the variable training costs can become prohibitively expensive. Even if an organization has a bottomless training budget, centralized, classroom training is not an efficient means of delivering timely training to a global workforce". To the left of the callout box, there is an orange arrow pointing right, labeled "Environmental Factors Influencing". The slide background features various icons: gears, a lightbulb, a hard hat, and an atom symbol. In the bottom right corner, there is a small video inset showing a woman with glasses and a colorful patterned top. At the bottom left, there are logos for NPTEL and other institutions.

So, let us discuss these factors in details; for globalization for highly decentralized organizations with employees as we told which are dispersed around, the globe the variable training cost can become prohibitively expensive.

So, if it even if the organization has a bottomless training budget, centralised classroom training is not an efficient means of delivering timely training to a global workforce as we have discussed, because it is on the culture, need, availability, time zones everything. So, we have to customise the training programme; so, in that case technology-based training is the best answer.

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The slide is titled "Technology Based Training" in an orange box at the top. On the left, an orange arrow labeled "Environmental Factors Influencing" points towards a central yellow callout box. The callout box contains the following text:

- **Economic Pressure**  
Companies face tremendous economic pressures to cut costs and increase shareholder value. The result is that human resource professionals are being asked to do more with less. In the training field this translates into maintaining, or often increasing, a firm's employee development activities while at the same time reducing training expenditures

In the bottom right corner, there is a small video inset showing a woman with glasses speaking. The slide also features decorative icons of gears and an atom, and the NPTEL logo at the bottom left.

Economic pressures, companies face economic pressures to cut cost and increase shareholder value. So, in as a result what happens HR professionals are being asked to do more with less of the resources or budgetary allocation. So, the training parlance this means like maintaining or often increasing the firm's employee development activities and we at the same time it is to a reduce the cost training expenditures.

So, with less of expenditure how to like give more cover more employees? So, whenever we are talking of less of expenditure it should not be misinterpreted like, we are compromising on the quality; no, how to innovate on the training delivery mode? So, that within a cost within a budget we are going to give more coverage to people, we are going to bring in a more people under the ambit of who gets training and development that is possible only through technology-based training.

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The slide features a title 'Technology Based Training' in an orange box at the top. Below it, a yellow callout box contains the text: '• Work-life Concern One of the employment trends anticipated to have the greatest impact on the workplace is the increased demand for flexible work schedules from employees. Possible causes of this trend include generational differences and the growing number of employees who have childcare and/or elder care responsibilities.' To the left, an orange arrow labeled 'Environmental Factors Influencing' points towards the callout. The slide also includes icons of gears, a hard hat, and an atom, and a small video inset of a woman in the bottom right corner. The NPTEL logo is visible in the bottom left corner.

Work life concern; so, one of the employment trends anticipated to have the greatest impact on the workplace is the increased demand for flexible work schedules from employees. So, as there are generational differences and the growing number of employees who have childcare and the growing number of employees who have childcare and their elder care responsibilities. So, for this reason a self paced learning is more helpful, more acceptable to the employees where they can learn as for their convenience.

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The slide features a title 'Technology Based Training' in an orange box at the top. Below it, a yellow callout box contains the text: '• Technological Advancement Companies are now to rethink traditional approaches of training and development, to position technology-based training as a viable alternative to classroom-based instruction based on the recent advances in computing power and connectivity have probably done the most.' To the left, an orange arrow labeled 'Environmental Factors Influencing' points towards the callout. The slide also includes icons of gears, a hard hat, and an atom, and a small video inset of a woman in the bottom right corner. The NPTEL logo is visible in the bottom left corner.

Technological advancement, companies are now to have to rethink about the traditional approaches to training and development, to position the technologically based training as a viable alternative to classroom-based instruction. Because, there has been increase in computing power and connectivity and; so, the there is more of connectivity; so, and you can learn from various sources.

So, it has changed the way that we have looked at the world. So, it's very important like these also gets imbibed in the learning process and that is how the company needs to maybe think differently as how to give technology-based training.

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The slide features a title 'Technology Based Training' in an orange box at the top. Below it, a blue arrow labeled 'Influence of Technology' points towards a yellow box containing a bulleted list of benefits. The background is decorated with icons of gears, a hard hat, and a molecular structure. In the bottom right corner, there is a small video feed of a woman with glasses and a colorful patterned top. The NPTEL logo is visible in the bottom left corner.

**Technology Based Training**

**Influence of Technology**

- Employees have greater control over when and where they receive training
- Employees have greater access to knowledge and expert systems
- The use of avatars, virtual reality, and simulations make training "real"
- Employees can choose the media they like best

Now, what is the influence of technology is as we told at the start of this, this is the learner centric training. And which is the main thing being, when I should receive this training is under the control of taking the training going through the learning experiences on the hands of the training. So, employees have greater control over and where, when and where they receive the training?

Employees have greater access to knowledge and expert systems, the use of avatars, the virtual reality and simulations make training real, employee can choose the media they like the best. So, this is very important because, we understand if we how a person learns; there are auditory learners, there are visual learners, there are kinaesthetic learners. So, how a person learns; so, the different media is more acceptable for different people, because that is tuned to them like how they learn.



So, technology-based training helps you to like approach that learning approaches and make the training more comfortable for the person based on the media you can go for either an audio, or you can go for a visual, or you can go for like multimodal kind of things. But each mode is very important to you it depends on your like the what type of learner you are.

So, and this if you can match that the how the training mm that method that you take the modes that you take. So, the person is going to get like more accustomed to it and learn learning will be better that way.

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**Technology Based Training**

**Influence of Technology**

- The administration of training can be conducted electronically
- Training accomplishments can be easily monitored
- Training can be easily delivered to trainees

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The administration of training is also in can be done electronically if like you went to give the training and how the training accomplishments can be easily monitored. Because, if a dashboard is formed like if whatever feedback that the employee is giving, whatever questions the employee are answering and what are the maybe right answers or wrong answers given if it is getting recorded in a dashboard.

And when the person is like going through the training program; so, if these are well mapped then the training accomplishments can be easily monitored. If it is translated into a graphical ways of representation; like, how whether the person is improving or not as a part of going through the training program like the questions. And if there are assessment questions or different steps of the learning program, then it can be easily assessed



monitored whether training is really leading to certain accomplishments. And it can be training can be easily delivered to the trainees.

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The slide features a yellow arrow-shaped box on the left containing the title "Objectives of Technology Based Training". To the right is a list of six bullet points. The background is white with faint icons of gears, a hard hat, and a network diagram. A small video inset in the bottom right corner shows a woman with glasses and a colorful patterned shirt. The NPTEL logo is visible in the bottom left corner.

- To explain how new technologies are influencing training
- To evaluate a Web-based training site
- To explain how learning and transfer of training are enhanced by using new training technologies
- To explain the strengths and limitations of e-learning, mobile technology training methods (such as iPads), and simulations
- To explain the different types of social media and the conditions conducive to their use for training
- To describe to a manager the various types of distance learning

Now, what are the objectives of the technology-based training? The first of course, is to explain new technologies are influencing the training and we have to get accustomed to it, we have to like know how to use it. To evaluate web-based training site; if we have to see like certain training is given in on a like online mode like if you have to understand how it is then of course, we need to understand what are the processes of technology-based training.

To explain how learning and transfer of training are enhanced by using of new training technologies. So, these we call like edu-techs like how technology gets like joins hands with the educational psychology principles and maybe cognitive psychology theories also. How they build their training programs based on these theories and make that deliverables; so, that the learning process the is and transfer of training is better.

To explain the strengths and limitations of e learning, mobile technology, and training methods such as iPads and simulations. So, these are very important like the traditional training methods have its own pros and cons and also the technology-based training methods have its own like pros, but it is not without its like limitations. So, these limitations could be like it may make people more like you it they may become so much

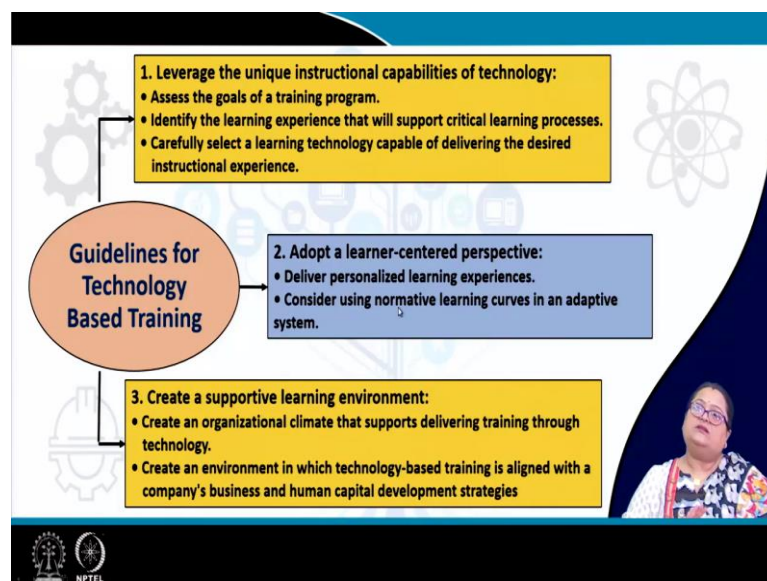
attached to this digital based methods that they may like lose connectivity with the like even talking to the peers or interacting with others.

So, that could be the limitations of this kind of training methods; so, it does it makes people more like more concerned with themselves and not understanding even the how to interact with others. So, these kind of limitations also needs to be explained like and also the limitations of simulations could be it is real like situation, but it is not the real situation per se.

So, it may be so designed like, it will help you to avoid the risk factors which may be there in the real situation. But we need to understand that difference between a real like situation and the real situation. So, each of these methods will definitely have their certain limitations and these needs to be explained properly the strengths and weaknesses.

And also like if how a maybe hybrid method will work these kind of situations we need to discuss as a part of this explaining this while explaining about the technology-based training. And we can also explain the different types of social media and the conditions which are conducive to their use for training. And of course, to describe to a manager the various types of distance learning; so, these are the objectives of technology-based training.

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Now, what are the guidelines for technology-based training. First is we have to leverage the unique instructional capabilities of technology; we have to adopt a learner centric perspective which is the second guideline. And third of course, is to create a supporting learning environment, let us see the details of each of these points.

Now, that what is leveraging the unique instructional capabilities of technology? Now, if we have to leverage the instructional capabilities of technology, we have to assess the goals of a training programme. Identify the learners experience that will support critical learning processes. Carefully select a learning technology capable of delivering the desired instructional experiences.

So, whether you will be like going for a multimedia, whether you will it you will make videos or you will make audios depends as all as we told it depends on the mode the learner prefers to like learn. So, if we need to believe in this, it is important like the learning that we get; how we learn it should be left to the learners' comfort zone and the time convenience etcetera. So, in order to do that we have to map the learning delivery process with that process with what the learner is comfortable.

Because, that if given that comfort, if given the convenience of like being in comfort situation; the learner will be able to like intake the or understand in a better way. The what we want to like teach to them of what we want to the develop the capabilities is that. For that if that is done in the and we have to that is why point number three which is carefully selecting a learning technology which is capable of delivering the desired instructional experience.

And what is that desired instructional experience? And instructional experience which will make learning enjoyable to the learner and for that, what we need to take is a learner centric perspective. So, point two of guideline of this technology-based training is adopted learner centric perspective; mean that, the first is deliver personalized learning experience as we are telling customized. Learning experience more customized you can make it to the learning profile of the learner choices of the learner.

They will be happy to like identify with the learning program and it will make learning more. Transfer of training learning easier; because, it becomes more acceptable to the learner. Consider using normative learning curves in an adaptive system; so, how the

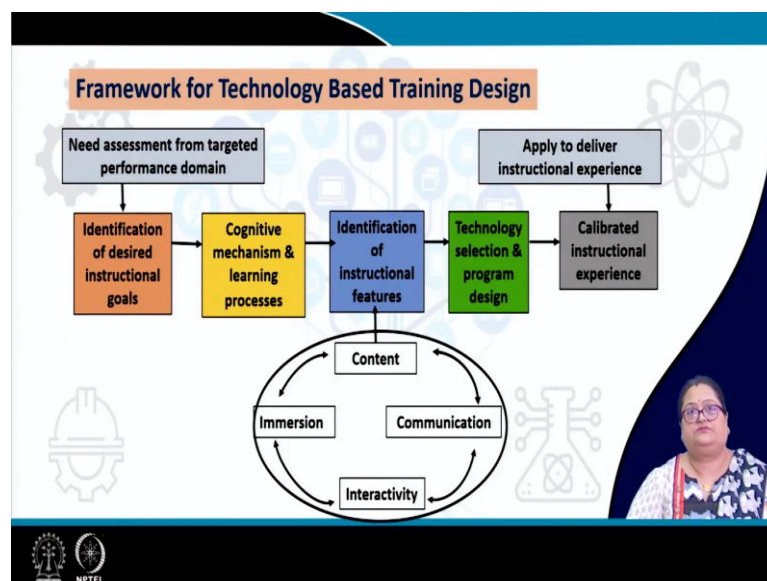
person is going to develop from start and then after the learning process you can give another assessment and see the learning improvement.

But the person can see the feedback the improvement; so, that you have to like map it with the previous learning experience of the learner and see the improvements that the person is making. In order to do that again what is most important which is the third point which is create a supporting learning environment. Create an organizational climate, we can do that by creating an organizational climate that supports delivering training through technology.

Create an environment in which technology-based training is aligned with the company's, business and human capital development strategies. So, how the translate the strategic vision and mission into the technology-based training modules is a challenge. Because, you have to develop you have to invest lot of time and energy and resources of course, in delivering the training models and make it learner specific.

So, a lot of research work needs to go into it and the organizations primary investment will lie in that research development of the course content which is aligned with the company's business and human capital development strategies and we have to align it with the needs of the employees.

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Now, what is the framework of the technology-based training design? What we see like first is the need assessment from a targeted performance domain which is the which will help us to identify the desired instructional goals. For what purpose the training needs to be given? So, need assessment from the targeted performance domain this is where we link it with the vision mission of the organization. And also like what is the performance domain which needs to be improved and that will help for the identification of the desired instructional goals.

That as we have already discussed would be linked with the cognitive mechanism and the learning processes of the learner. And which will again be mapped to the identification of the instructional features which is the like what is the content, how to communicate it, how to make it more interactive with the learner, and how to make the learner immerse in the learning programme. So, content, communication, interactivity and immersion these are the four like sub processes in the identification of the learning instructional features.

And you will see like it is the both way arrow, because each of these sub processes are going to interact and like effect other process. And based on these instructional features ok we need to be where each of these things like we have to think of what should be the content. If this is a content how it can be communicated? Do we communicate through like visual mode, do auditory mode, what will be the wording, what will be the font whether there will be any pictures.

So, do we give bring in more lessons, feedback sessions, gifts, then tokens, surprises. So, how it wants to how we can make it more motivating, how we can make it more interactive whether there will be any cartoon which will be talking and whether there will be any chat box; so, how do we make it more interactive. So, that it will lead to the immersion and the person will enjoy the process of learning.

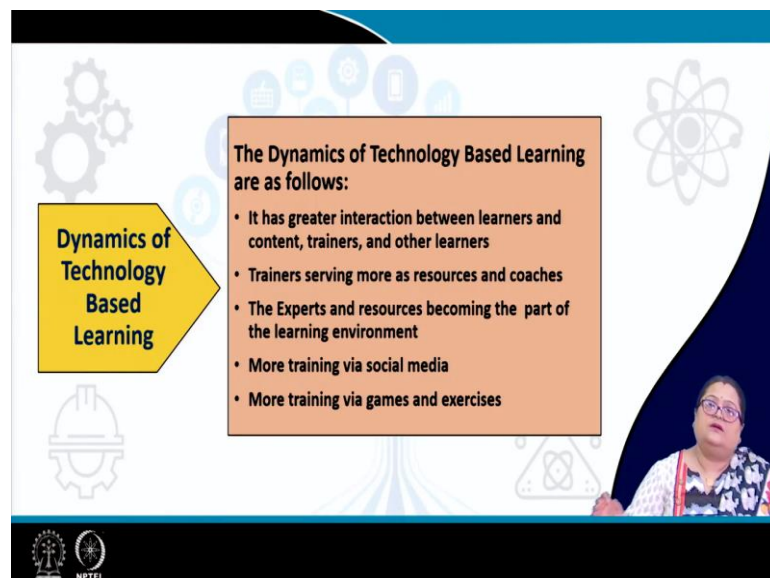
And as a result, they will like get to know about the course contenting like they will assimilate in themselves the course content and the objective the learning experience will be so like, interesting that they get to learn whatever the course deliverables are. Now, if we want to do that, then we have to again understand how, what is the technology selection and the program design?

Which will again lead to like based on that we can calibrate the instructional experience like what has been the feedback. How the person has enjoyed learning, if he can follow it in a dashboard, if you can keep a record of it, if you can monitor it and that again can be linked to the.

Like, when we talk of apply to deliver instructional experience that is link should be calibrated, it should be measured to understand whether the technology that has been used, whether the types of contents that has been developed, whether it is really adding value to the learning process, whether training is really what is the implication of training? Whether it is really improving on the knowledge domain which the person wants to develop through this undergoing through this process of training.

So, calibrated instructional experience is very important which will help to again have a review process to find out whether to like instructional features need to be revisited, or the technology needs to be revisited. Or we need to like maybe develop on a hybrid model where there is a guided learning experience which is not only self paced employee based. But also maybe a mentor is attached who will help you to understand some concepts if you get stuck. So, it will help you to make a training decision.

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The Dynamics of Technology Based Learning are as follows:

- It has greater interaction between learners and content, trainers, and other learners
- Trainers serving more as resources and coaches
- The Experts and resources becoming the part of the learning environment
- More training via social media
- More training via games and exercises

The slide features a yellow arrow pointing right with the text "Dynamics of Technology Based Learning". The background is white with blue and grey icons of gears, a smartphone, and a network diagram. A small inset photo of a woman is visible in the bottom right corner. The NPTEL logo is at the bottom left.

Now, what are the dynamics of a technology-based learning? The technology-based learning has a greater interaction between the learners and contents trainers and other learners. Trainers serving more as resources than coaches as we told like as mentors. The

exposed resources becoming the part of the learning environment. More training is given via social media and more training is given via games and exercises.

So, whether we incorporate the play method in training; so, these are the different things that we need to understand whenever we are designing for the technology-based learning.

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The slide is titled "Features of Technology Based Training" in a yellow arrow-shaped box on the left. To the right, a list of "Basic Features are as follows:" is presented in an orange box. The features are: Content (text, video, graphics, and sound), Collaboration and sharing (to reinforce content), Links to resources (access to other training methods and electronic performance support), Learner control (control over what, when, how, and with whom they learn), Delivery (internet, intranet, distance learning, and CD-ROM), and Administration (online administration of enrollment, monitoring, and trainee progress). The slide also features a small video inset of a woman in the bottom right corner and the NPTEL logo in the bottom left corner.

**Features of Technology Based Training**

**Basic Features are as follows:**

- Content—content may include text, video, graphics, and sound
- Collaboration and sharing—collaboration and sharing can help reinforce content
- Links to resources—access to other training methods and electronic performance support
- Learner control—learners can control what, when, how, and with whom they learn
- Delivery—delivery may include internet, intranet, distance learning, and CD-ROM
- Administration—online administration of enrollment, monitoring, and trainee progress

So, what are the basic features of technology-based training? So, first of course, is the content which may include text, video, graphics and sound. Collaboration and sharing, can help to reinforce the content. Links to resources which is the access to other training methods and electronic performance support. Learner control, learners can control what when how and with whom they learn.

Delivery may include internet, intranet, distance learning and CD ROM. Administration, online administration of enrolment, monitoring and training progress; these are some of the features of the technology-based training.



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**Effectiveness of Technology Based Training**

- It is more effective than face-to-face for declarative knowledge
- Technology based and classroom are equally effective for procedural knowledge
- Learners are equally satisfied with online and classroom instruction
- It is better than classroom when there's learner control, practice, and feedback

The slide features a yellow arrow pointing right with the title. The background is white with blue and grey icons of gears, a hard hat, a brain, and a network. A small video inset of a woman is in the bottom right corner. The NPTEL logo is in the bottom left.

Now, what is the effectiveness of the technology-based training? It is more effective than face to face for declarative knowledge. Technology based and classroom are equally effective for procedural launch. Learners are equally satisfied with online and classroom instructions. It is better than classroom when there is a learning control practice and feedback.

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**Effectiveness of Technology Based Training**

- It is better than classroom for long courses
- Technology based and classroom are equally effective when similar methods are used
- Trainees who benefit most are those who devote more time
- Technology based learning is not effective for learners with low technology self-efficacy

The slide features a yellow arrow pointing right with the title. The background is white with blue and grey icons of gears, a hard hat, a brain, and a network. A small video inset of a woman is in the bottom right corner. The NPTEL logo is in the bottom left.

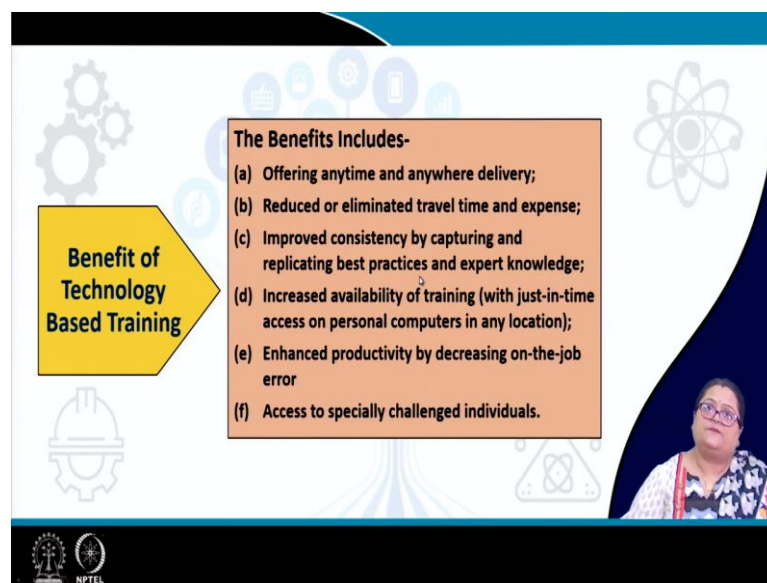
It is also better than classroom for long courses, because as we told it is a learner based self paced learning; so, the learner can learn in his or her own convenience. But what we

need to understand over here? The learner should be having an intrinsic motivation to learn or the learn the course content, the challenge is to develop a course content a course pack in such an attractive way that the learner will develop a motivation to go through we love to go through the course content.

Because, as it is more learners centric and the control is on the learner's hand like when and where to go through the course process. So, in that case if there is no intrinsic motivation or the content is not attractive enough to draw the attention of the learner, the learner must keep learning also; so, that thing we need to understand. So, technology based and classroom are equally effective when similar methods are used.

Trainees who benefit most are those who devote more time. Technology based learning is not effective for learners with tec low technology based self efficacy; so, these also we need to understand.

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The slide features a yellow arrow pointing right with the text "Benefit of Technology Based Training". To its right is a list of six benefits. The slide is decorated with icons of gears, a smartphone, a hard hat, and a molecular structure. A small video inset of a woman is in the bottom right corner. The NPTEL logo is at the bottom left.

**Benefit of Technology Based Training**

**The Benefits Includes-**

- (a) Offering anytime and anywhere delivery;
- (b) Reduced or eliminated travel time and expense;
- (c) Improved consistency by capturing and replicating best practices and expert knowledge;
- (d) Increased availability of training (with just-in-time access on personal computers in any location);
- (e) Enhanced productivity by decreasing on-the-job error
- (f) Access to specially challenged individuals.

Now, what are the benefits of technology-based training? It can be offered anytime and anywhere delivery. Reduced or eliminated travel time and expenses. Improved consistency by capturing and replicating best practices and expert knowledge. Increased availability of training because, with just in time access on personal computers in any location. Enhanced productivity by decreasing on the job error and access to specially challenged individuals.

So, they can learn in their own pace space in their own comfort zone and from their own locations and that is where it is very helpful for specially challenged individuals.

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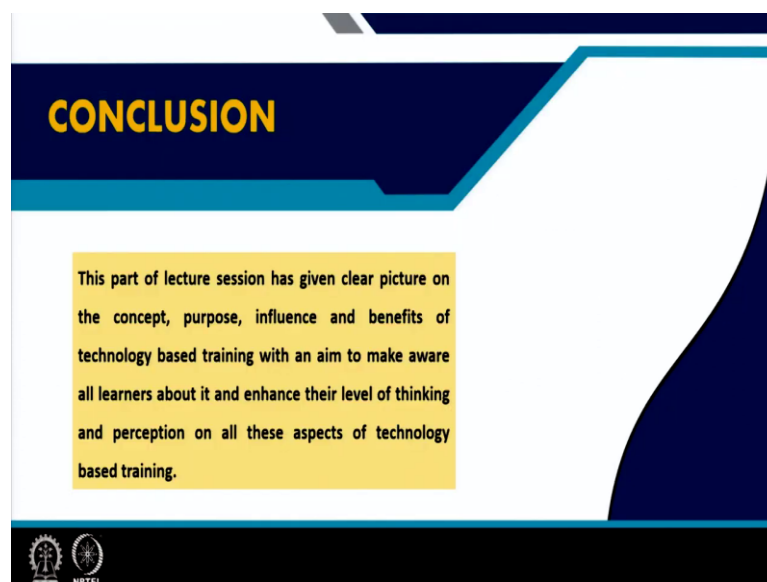
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These are some of the references that we have used for like developing this lecture material.

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**CONCLUSION**

This part of lecture session has given clear picture on the concept, purpose, influence and benefits of technology based training with an aim to make aware all learners about it and enhance their level of thinking and perception on all these aspects of technology based training.

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And we hope like this part of the lecture session has given a clear picture on the concept purpose influence and benefits of technology-based training with an aim to make the. All

the learners aware about it and enhance their level of thinking and perception in all these subjects of on the different aspects of technology-based training.

In the next few sessions, we will discuss more about technology-based training. And the different technology-based training methods which are their social media and its implication in training and other things connected to technology-based training. Stay tuned with us to learn more about technology-based training.

Thank you till then.