

Organization Management

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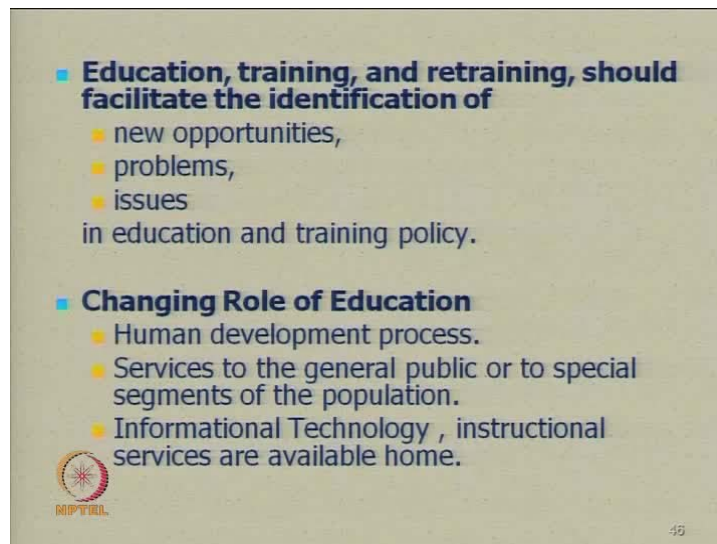
Indian Institute of Technology, Delhi

Module No. # 03

Lecture No. # 35

Organizational Interdependence

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■ **Education, training, and retraining, should facilitate the identification of**

- new opportunities,
- problems,
- issues

in education and training policy.

■ **Changing Role of Education**

- Human development process.
- Services to the general public or to special segments of the population.
- Informational Technology , instructional services are available home.

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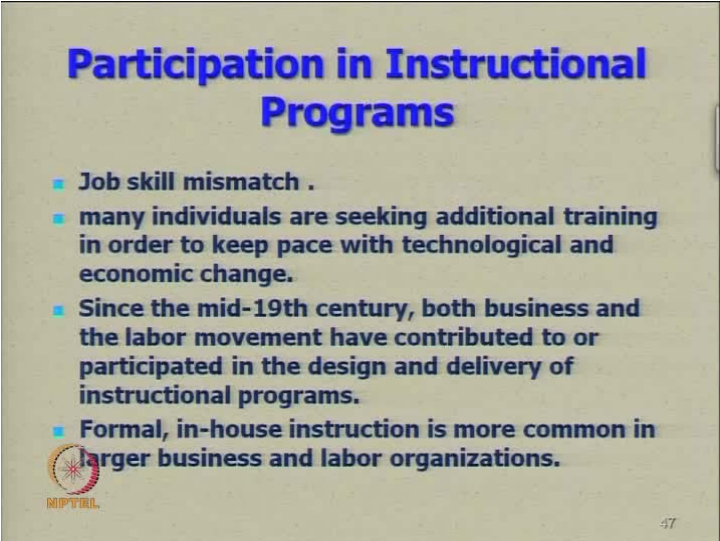
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We were looking at the impact of mechanization and automation on the kind of skill requirements the organization would require. Taking the sociotechnical systems approach, we wanted to complete the sentences by helping you to recognize that in many cases, the consequences and impact of computerization is no different to the consequences and impact of mechanization or automation.

So, whatever has been said for automation and mechanization applies just as well for computerization. The processes are same because the shift is from human skills to machine skills, and in certain other cases upgradation of the machine skills because the redeployment of manpower as a consequences of mechanization may require a skill formation at certain level, but for redeployment at an experience of automation may

require an up gradation at yet another level, which means normatively the level of skill requirement rises from mechanization to automation to computerization. That is the only way in which the job skill mismatch can be avoided.

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Participation in Instructional Programs

- Job skill mismatch .
- many individuals are seeking additional training in order to keep pace with technological and economic change.
- Since the mid-19th century, both business and the labor movement have contributed to or participated in the design and delivery of instructional programs.
- Formal, in-house instruction is more common in larger business and labor organizations.

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Many individuals seeking additional training in order to keep pace with technological and economic changes - I think that is inadequately framed - it is not a question of many individuals, everyone. A message which I have tried to give repeatedly through these sessions is - if you think, you can freeze yourself in a time frame, which is not worthy of your status, your age or your requirements, well, then you should be prepared for being condemned. By being condemned, I do not mean anything negative; by being condemned that means being rejected as unworthy. So, when you grow up you are not doing anyone else a favor, you are doing yourself a favor. You cannot grow up, do not expect others to pitch in for you - that is the simple law of life, which applies everywhere.

We have noticed through these sessions, how everything has to change. In this case we are discussing changes in technology, but we have discussed changes in environment; we have discussed changes and evolution in culture; we have discussed changes in policies; everything changes. So, learn to behave appropriate to your age and your status. Since the mid nineteenth century, both business and labor movement had contributed to or participated in the design and delivery of instructional programs, which means that the

content of education derives its strength from the requirements of the world of work. The requirements of the world of work, therefore have to be mapped, understood and interpreted in terms of the educational curriculum.

Formal, in house instruction is more common in larger businesses and labor organizations; smaller businesses cannot afford it, so a lot of learning is on the job. The process of transference of skills is by mentoring, on the job training and it is not all in the classroom situation; in fact, what happens in a classroom situation is a small portion of what is required.

This course, **call** it mechanization, automation or computerization technological literacy - the reason, why it is called literacy is say for example, today, the consequences of computerization are so universal; if you did not know how to use a keyboard, you are an illiterate; in fact, a lot of institutions of such, just switched over to doing everything through computers. You cannot apply through computers, but through computers; you will not be evaluated, but through computers; you will not receive notices, but through computers. So, what is the message? You better learn to use a keyboard and there again if you say no I do not believe in it, it is not my way of life, my choices; ok live with your choices. Going back to the theme of this session - learn to behave appropriate to your age and status, and what is the appropriate behavior will not be decided by you; it will be decided by the person in authority.

For example, if you apply for a US visa, you apply online and if you do not know how to apply online do not apply for a visa. So, you cannot go arguing and the person in authority will decide, when you will be called for interview, and you miss your chance, you take your position back in the queue again. One of the bigger problems this country has is that indiscipline has been glorified to the level of a creed.

People can celebrate the inaugural of Asiad and be in awe, but if you ask them to do the same thing here they will not put in the application and the discipline, which causes that kind of a gala opening. With the results that late started that china has been, you can look at a comparative rating their level of economic progress and your level of economic progress. You cannot register progress with everyone doing his own thing, and the younger people in the audience may not realize it today, but will realize in less than 10

years; the prices that have to be paid collectively just because a few people would refuse to be disciplined everyone pays for it.

So, it is a responsibility of the group to set its own norms and make the people who do not fall in place get into step. If they cannot manage that interpersonal relationship they deserve to suffer, what will come their way, which outlines a very important principle of management with the incoming of technology. The assessment is always of a group - the assessment is always affected by group behavior, so ultimately the progress is only as per accepted group norms.

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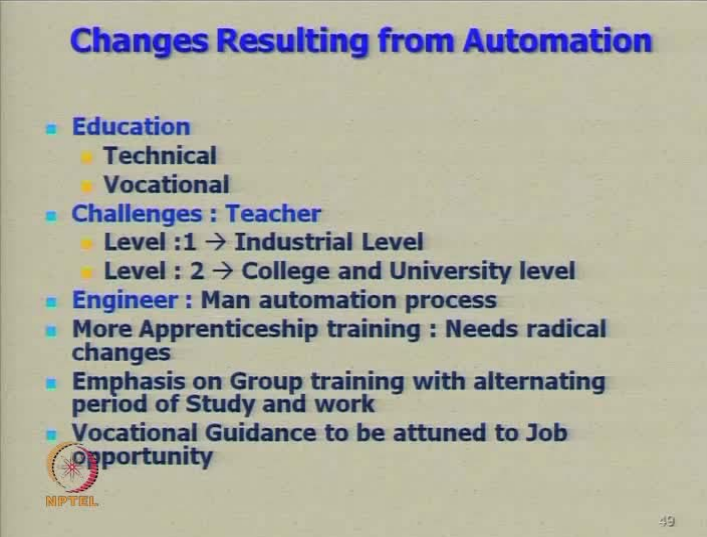
Technological Literacy

- **Individuals must have knowledge of the computer as a**
 - **tool for managing and**
 - **providing access to massive amounts of information.**
- **Modified definition of basic literacy that includes familiarity with the computer. "Technological literacy"**
- **Technological literacy will soon be required of all members of the work force, as broader and more extensive applications of information technology are made in offices and plants. : E-DMS**
- **More in-house corporate education and training systems**

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Individual must have knowledge of the computer as a tool for managing and providing access to massive amounts of information. Modified definition of basic literacy that includes familiarity with the computer, which is “technological literacy”. Technological literacy will soon be required by all members of the workforce, as broader and more extensive applications of information technology are made in offices and plants; more in-house corporate education and training systems become necessary.

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Changes Resulting from Automation

- **Education**
 - **Technical**
 - **Vocational**
- **Challenges : Teacher**
 - **Level :1 → Industrial Level**
 - **Level : 2 → College and University level**
- **Engineer : Man automation process**
- **More Apprenticeship training : Needs radical changes**
- **Emphasis on Group training with alternating period of Study and work**
- **Vocational Guidance to be attuned to Job Opportunity**

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What are the other changes resulting from automation? You could just say mechanization and computerization. General stream of education has to become more technical and vocational, so that the feeders of recruitment to the industry are more specialized. The challenge is of getting people, who will impart this instruction. More apprenticeship training is needed for radical changes. You will no longer be permitted to learn on the job, your learning will be delinked from your job performance and if your educational institutions have not taught you to be disciplined; if your educational institutions have not taught you to be technologically savvy; if your educational institutions have not taught you to think; if your educational institutions have not taught you how to source information and how to learn, then your work organization cannot. Because if you work, if you convert the work situation into a training institution there will be no productivity.

So, if your educational institution is not going to do it and your employer is not going to do it, a mediatory position has to be created; where you begin to learn and that is the period of apprenticeship. As a concession to the livelihood needs, you will get a stipend, but you will not get a salary; which is how the processes of apprenticeship have been progressively extended 6 months, 1 year, 2 years and depending upon your progress, you are transferred onto a job.

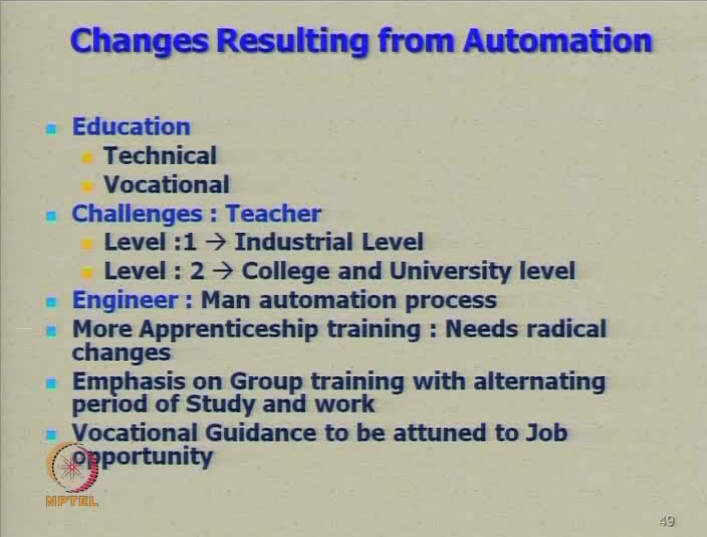
Emphasis on group training, remember how this word group keeps coming back over and over again. Group behavior, group performance, group standards ultimately, what are the standards ? The standards are, what the group permits itself to observe. What is the difference again between our kind of groups and groups of more successful countries? Here you take a punitive act, you punish somebody the rest of the group descends on you **sir please sir [FL] sir [FL] he deserves to die and if you want to carry his Caracas around on your shoulders please go ahead your choice you will me carrying that dead weight.**

In another culture, in another context, this is the linkage between culture and strategy something, which many people miss. Style of management - you warn a person once, you warn a person twice, third time he goes and there are no ifs and buts and there are certainly no lame excuses, what **happened is no you will be punished for** You go to Singapore, which is again cited universally for its dramatic progress; which has put to shame any other country; which may boast of this or the other. You go to the courts, you waste the time of the court through fibbing there is a punishment and woe betide if it is proved that you are lying.

You go to certain other countries of course, you can go on extending the hearing date I fell ill, I cannot come, I have a valid excuse; you can go on asking for dates and then you turn around and say the legal system does not work, who is not making the legal system work? Does the judge come around to you and say you keep on asking for extension. Through several of these sessions, I have tried to focus your attention on, what is the real cause? What is the real issue? Collectively we have rendered. Our judicial system, like many other systems are dysfunctional; judicial reforms are not the answer. In any case, they are not the complete answer; the answer is each one transforming himself to understand, what is the price he is paying for that fibbing, what is the price he is causing his children to pay because of that dishonesty, what is the price the community will pay for letting him get away with it and worst of all justifying him getting away with it.

To my audience, I have only one thing to say you may not realize it, but your children and your grandchildren would not forgive you for perpetrating this kind of work ethos. Because they will be carrying the dead burden of legacy, which you have passed on to them and this is a very serious proposition and it needs to be put on the national agenda.

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Therefore, organizational effectiveness is the core to progress, which is why any topic in organization management invariably ends with considerations of what makes an organization effect and the touchstone is that kind of intervention **are you** making for a more effective organization or a less effective organization. Laughing your way through a problem is to laugh at yourself and if you enjoy that kind of humor of course, all I can say is god bless you. In fact, you need to go even a step further back in terms of backward linkages and create in people a feeling of proving themselves to be a productive member of any community. If you are not contributing to the collective welfare, why should you be benefited from collective effort that is an equation, which needs to be specified very clearly.

If you are not contributing to a collective welfare, why are you seeking benefits from collective effort? Why is it that in certain cities, no queues will ever be formed and why is that in certain other cities, even if you are in a tarring hurry, you automatically go and take your place in the queue? The reason is very simple, in the cities, where queues will not be formed each one will be rushing for himself to gain an advantage with fibbing pseudo excuses, real excuses everything else, but we should take him in the queue; with the result that everyone suffers. In another city, somebody tries to jump the queue, the rest of the members of the queue will make sure that he goes back and takes his place.

The same analogy applies to organizational behavior; the same kind of analogy applies to adoption of technology. How do you adapt automation and mechanization, forget computerization. Without creating the mindset, which goes with it, this cannot be done at a workplace. The truth is anyone, who is above 16 has his personality fully formed already. His personality has been formed by the type of community he comes from and by community I mean the group he comes from, by the type of parents, which he has had, by the type of childhood rearing practices. I can always make out a person's family by the way I see him behaving.

No child is born with learning, but the child begins learning ever since, the child opens his eyes because each visual, which the eye notes is like a snap in the camera. If he has heard yelling and shrieking in the house old, he will grow up to be a damn good Olympian in yelling and shrieking; one of the few things in which you know if they were to have an Olympic medal; we would be right in top. For example, if ever we had a Olympic gold medal for a group gyration, our entire Bollywood would be getting gold medals, silver, bronze no one else would stand a chance, the Chinese would be nowhere.

People do not sufficiently put weightage on conditioning and when they have crossed 16 you point it out to them their face turns like a chalk because I will tell you the basic truth - everyone knows once own truth. People lie to others, they cannot lie to themselves and when they find the consequences of their illiteracy visiting them through life; then they start saying the world is unfair. The world is not unfair, you only get what you deserve the only thing, which cannot be explained is - why were you hit when you were hit the way you were hit.

Therefore, technology is the “great divide”. For those who do not know the great divide in India, is the “digital divide” and the great social question in India is, how do you bridge that digital divide? The purpose of raising that here is that - while talking of automation and for that matter even mechanization or computerization, you are creating two class of societies in the **industrial community and make no mistakes**; The world will belong to the faster modes of production, and people who can produce in a large quantity other areas are also important, but they only provide employment, which is an important thing, but the day will be clinched by faster modes of production and higher technology.

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- **Retraining for Skilled and Semiskilled Occupations**
 - **Potential social impacts of the use of Automation calls for retraining programs for skilled and semiskilled occupations.**
- **Adult Worker :**
 - **Impact : Social and psychological**
 - **Change in occupational and Skill structure → Stability of the worker and his family**
 - **Retaining programs for the employee worker whose job content is changing in the automated plant**

Concern over retaining peoples whose job content has changed

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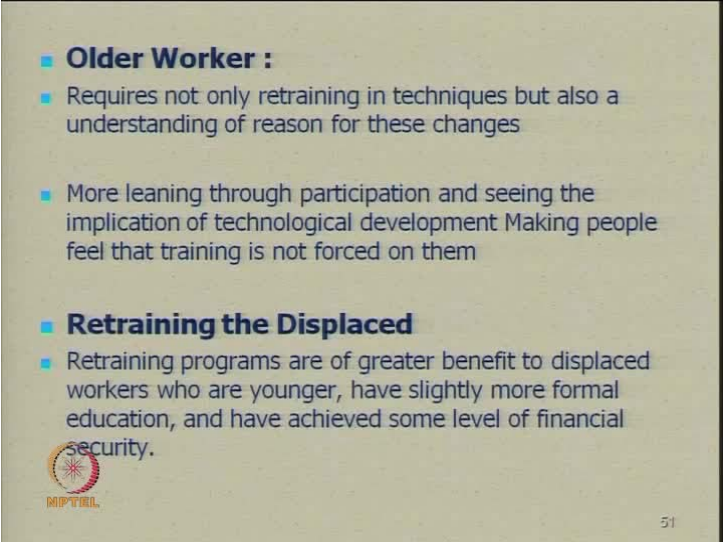
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Retraining we have discussed. I do not want to discuss the adult worker, which has been under observation in this discussion for 10 minutes that is the kind of worker, who gets into the industry and then can be disruptive. I firmly believe that the success of any organization depends upon its recruitment process, not even so much on its promotion process. You take a wrong person, you have got a liability for 40 years, therefore you must evolve your organizations sufficiently to understand his technological acclimatization, his retraining abilities and you look after interviews none of these traits are ever examined. Therefore, it is not surprising that a lot of organizations come to grief. The question again becomes mechanization, automation, computerization, skill formation and organizational effectiveness.

The adult worker, I do not want to spend more time discussing all this. We have to move on concern over retraining people, whose job contents have changed. What do you do with them and if you have antiquated labor laws then you have an issue. You cannot keep them, you cannot milch them, so what do you do and of course you cannot kill them; you turn them out on the streets to cause a traffic jam and this is how organizations think. The bold truth about all effective organizations is - if the person is not productive, if he is not contributing to the group welfare; he has no right to be there period. You can put him on a social service role, where also he is a liability; somebody has to earn to give him that role, but do not kill your productive processes through making your work

organizations social service organizations. There is a difference of class between a work organization and a social service organization.

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- **Older Worker :**
 - Requires not only retraining in techniques but also a understanding of reason for these changes
 - More leaning through participation and seeing the implication of technological development Making people feel that training is not forced on them
- **Retraining the Displaced**
 - Retraining programs are of greater benefit to displaced workers who are younger, have slightly more formal education, and have achieved some level of financial security.

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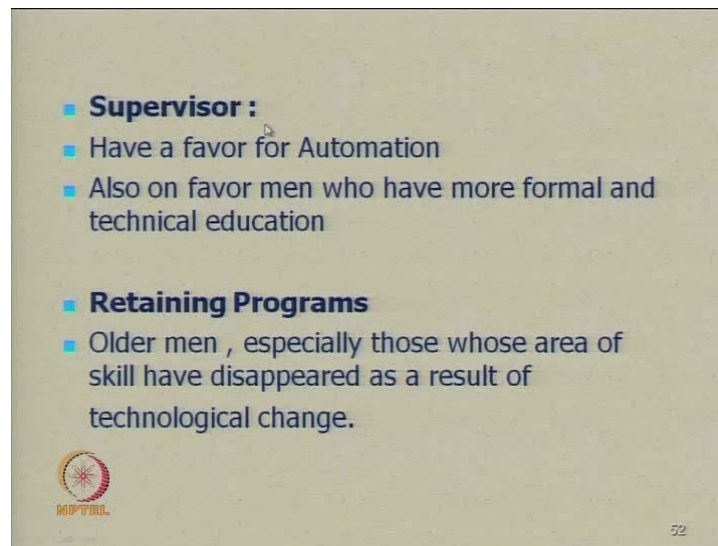
Then there is the older worker- requires not only retraining, but also understanding of the reasons for these changes; more learning through participation and seeing the implications of technological development making people feel that training is not forced up on them. One of the biggest problems in computerization is even as of today, the top run of many organizations is manned by people who have not seen, who do not know the difference between the front of a computer and a back of a computer. Metaphorically speaking or even for that matter, the difference between a UPS and a monitor; you ask him where is a computer he will show you the monitor. Now, if that is the kind of person, who is taking the decision then you have to do what somebody did in the ministry of defense, who was stalling all kinds of equipment being passed onto our forces? Fighting on the glaciers, he just packed off the officials concerned to Siachen and said - you stay there for a fortnight; you understand the conditions yourself and then you come back. It is very easy to find technical objections, when you do not know the reality.

The submission is therefore clear, everyone must have hands on experiences and if your computer is being used as a typewriter and if the only access you have to a computer is through your E-mails being downloaded by your secretary to be put up to you before like

it was a fax, then god help the processes and let me tell you this example is not such a **rarity**.

Then of course, there is the training of the displaced retraining programs greater benefit to displaced workers, who are younger, slightly more formal education have achieved some level of financial security.

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Supervisor have a favor for automation; also favor men who have more formal and technical education. Obviously, the supervisor does not like to serve as a trainer on the routine; there is a difference between being trainer on the routine and a trainer for referent power. What is referent power? People refer issues to you, when they do not know the solution, then you have a referent power, but nobody wants to train people at the routine.

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•UAW reached with Ford Motor Co., General Motors, and International Harvester, there are provisions for training and retraining programs for current employees as well as those laid off.

•In addition, each contract calls for the establishment of a joint union management employee development and training committee through which special instructional assistance will be provided to members who are displaced

•by new technologies, new techniques of production and “ . . . shifts in customer preference. ” Employees—both skilled and semiskilled —are covered under other provisions of the agreements.

•They are eligible to participate in upgrade training designed to sharpen job skills and to provide updates on the state of the art of technology being utilized in their plants.

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I would like you to read these three paragraphs as a further extension of the thought processes, which we have been just discussing. These are illustrations from the world of work of the points, which I have been elaborating so far.

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- **Training for management of automation process is linked with the training of technical manpower because these process breakdown the distinction between manpower and managerial skills**
- **Managerial decision are vitally important when they affect the maintenance and operation of the integrated plant and they can be made only by person who knows the plant intimately as a technical system.**
- **Automatic production is also likely to increase the advantage of formal training in management , Because each plant must operate as a unified whole and such operation is best achieved by techniques of management planning and control, which have been acquired by formal training**

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Training for management of automation processes is linked with the training of technical manpower because these processes breakdown the distinction between manpower and managerial skills. Now, this is a very important distinction - learn to distinguish between the manpower available and managerial skills. Managerial skills are the skills, which can

be put to productive use. In other words, to put it very simple, you can have a situation, where you have the manpower, but you do not have the skills. Again a hole in the argument, which is being drubbed up repeatedly now, we have the manpower dividend show, where this man power is to be used; manpower does not get converted into managerial skills by adding to the numbers.

Manpower gets converted into skills by inputs, which raise the skills using more and more numbers and putting in more and more numbers does not called still function; it will be garbage in and garbage out. **The fellow knew nothing, when he was bought into the classroom he knows nothing, when he goes out he cannot be a dividend;** in fact, you have worsened the case. Earlier, he was a manpower non-dividend with no degree; now, he is a manpower non-dividend with a degree, even more difficult to trap. So, then what does he do? He is let loose on the political scene and then his talent really flourishes, whether it is organization x, organization y or the community or the general political processes. You find those are some of the places, where really everyone is enterpreneuring, what happens to the productive process, who is going to do? Earning these questions have to be posed and these questions have to be understood.

Managerial decisions are vitally important, when they affect the maintenance and operation of an integrated plant and they can be made only by a person, who knows the plant intimately as a technical system; which is why the better induction programs of all organizations introduced the technical systems to their new entrants? This applies at any level of recruitment including that of a CEO, even the CEO has to be introduced what is the technical system of the organization, which he is supposed to head because no two organizations have the same technical system. Therefore, please understand, when we are talking of mechanization, automation, computerization - we are talking of how these technological systems effect decision-making and management.

Automatic production is also likely to increase the advantage of formal training and management because each plant must operate as a unified whole and such operation is best achieved by techniques of management, planning and control, which have been acquired by formal training.

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Computerization

- **The belief in technology and technical development is strong in the human mind. That technology and technical development is something intrinsically good and worth to strive for is obvious in the ever-increasing speed of computerization.**
- **Different types of private and non-private organizations and companies, as well as many people favor the development of computers and computerization as a way of transforming social order and change organizations.**
- **"The rise of computer technologies and networking is due to collective action similar to that of other social movements" - Iacono and Kling**

Source- Goals, Values, and Effects in Computerization: Karin Hedström ESA, Örebro university & Research Groups VITS

The belief in technology and technical development is strong in human mind. That technology and technical development is something intrinsically good and worth to strive for is obvious in ever-increasing speed of computerization, but only to the believers. There are a lot of people, who genuinely believe that technology is the problem. Jacques Ellul for example, one of the forefront French thinkers, he believes the problems of this world are rooted in technology and the problems will not get solved till you eliminate technology. When he is talking of that - he is not just talking of weapons of mass destruction, which indeed he is because these are all technology based weapons, but it is technology, which has woven together the fate of one community with another community.

Therefore, please realize the size of the group is becoming larger and as the size of the group is becoming larger the havoc that - 2 idiots can make will not even have to wait for third idiot. Therefore management of people, who do not fall in place, is a critical issue of the future organizational effectiveness because there is a domino effect of all the actions. When the groups were smaller, then negative people in any group could be contained there because he could not be transferred from that group to the other group; unless, there was an interface. Now, as the size of the group grows bigger because the groups are getting integrated the domino effect of a negative act will be much larger.

If you have an integrated electrical supply system of a city, to disrupt all of it is so easy by one intervention than if each locality had its own electrical supply system; this is a whole issue of distributed energy networks versus centralized energy networks. If you have distributed energy networks based on biogas, its far more difficult to complicate that than if you had distributed networks on atomic energy because energy supply, which comes from atomic energy is far more integrated than energy supply, which comes from biogas. With the result that the security concerns of a nuclear energy are far higher than that of a distributed network systems. Now, I do not want to enter that debate other than point out to you that debate will remain essentially unresolved because people have not made up their mind on technology and technology writes the future. The long and short of it is that - there is a case of people, who say that there will be no peace, there will be no growth, there will no happiness; unless you create a society, which is not written by technology; a society on which the human being writes the technology, there is a difference between the two. This constant push for bigger more larger mass faster may mean that disruption of the entire civilization in many ways and there are huge set of people in that school of thought; where you belong is for you to decide, but it is important at this stage of the discussion to sound of caution and say this can and does happen.

Different types of private and non-private organizations and companies, as well as many people, who favor the development of computers and computerization as a way of transforming social order and change organizations, are not the only people.

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Impact of Computerization

- **"Research literature on the impact of computerization on job content and job satisfaction provides a mass of contradictory findings."**
- Attewell and Rule
- **Both economic and social theory as well as a rich case study literature suggest that while computerization may increase productivity, it can degrade the work lives of those who use it.**
- **On the other hand, some researchers and analysts have argued that computerized work is manifestly more fulfilling than conventional work .**

Source: Computerization, Productivity, and Quality of Worklife- Robert Kraut, Susan Dumais, and Susan Koch

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The rise of computer technology and networking is due to collective action similar to that of other social movements. "Research literature on impact of computerization on job content and job satisfaction provides a mass of contradictory findings". At the present stage of managerial scholarship and learning - one is not quite clear, whether computerization is a boon or a bane. One thing is clear, if anything is clear at all computerization causes a huge change in job content. Since, this whole dialogue is over organization management, I would like to stop there. Whether job content should be changed, should not be changed, whether it is a way forward or it is a retarding step, I do not want to get into that discussion. I am merely stating that-incoming of computerization is a huge intervention in change of job content not only at individual level, but at the scalar level.

Usually, the introduction of computerization causes a shrinkage of jobs at the middle level; sometimes it also causes a shrinkage of job at the bottom level, but not all ways at the bottom level. Therefore a pyramid can get shaped like a dumbbell, a pyramid can get shaped as a diamond, therefore like everything else the future of organization design is difficult to predict. If we know anything for **surety**, what we know is that the organization design will change because of computerization. Because computerization raises, yet to another level the processes, which mechanization began remember - mechanization eliminated or reduced human intervention.

Automation took it forward by making the triggered decision a consequence of certain predetermined **givens**. Computerization has widened that not only a set of **givens**, but it raises it to the level of range of possibilities, and that is, what a software is. Automation gives you a much narrow band choice, computerization has made that huge possibilities from a to z and more have worked out predetermined interventions and those are set into motion. But even as we discuss the topic today, there are boundary conditions to the decisions, which can be based on a computerization process. The most important thing is the managerial implications of decision making are again enormous because the permutations and combinations of software possibilities, render infructuous and **unnecessary any number of possible human decisions**; you do not need human beings to do that anymore. Now, if you are not grasping the normative level, at which this remark is pitched. Let us keep it up focused on the operational level and at the operational level, the meaning is very simple.

What many people would clearly recognize? Even for PERT CPM, you do not have to do manual calculation anymore, but not that manual calculation has become unimportant; even to check out the veracity of the computerization process you have to check it out manually. So, what is it that I am putting to you - concurrency is the latest style. Concurrency will remain the latest style, what will vary is the - ratio of what is computerized and what is manualized? But I frankly do not see a time, when manual intervention will be totally unnecessary, the frequency of it may be much reduced.

Both economic and social theory, as well as rich case study literature suggests that - while computerization increase productivity it can degrade the work lives of those who use it; I think it is an important formulation, which I would wish you to register. Ultimately the question that is bound to stare us in our faces all along, what use has increased productivity, if the quantum of human happiness is not enhanced by it. Is it worth, if it leads to more family disco; if it leads to greater conflict amongst companions; if it leads to deteriorating work conditions; if it leads to a situation where there is more turmoil in the larger community, where the each community is more threatened than nurtured is it worth it and this is not a question, which can be avoided.

Therefore computerization may increase productivity, but it can degrade the work lives. You will notice the emphasis on may and **can one is only** outlining the possibility one is not being deterministic. On the other hand, some researchers and analysts have argued

that computerized work is manifestly more fulfilling than conventional work. Of course, you have all types of worshipers of computers; in fact, I had more than 1 colleague telling me if there is any knowledge in the world Sir; there is a website, which talks of it. Now, I find that so overpowering that, I named him 3 subjects and I said you find the website; he said these are not the relevant knowledge basis. I said that is brilliant, what you have is relevant, what you do not have is not relevant.

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Impact of Computerization contd..

- According to this position, the most routine work is most likely to be automated, eliminating jobs requiring low skill and eliminating the most boring and repetitive tasks within more skilled jobs .
- "Computerization has added intellectual content to work by making activities more abstract"

– Zuboff

Source: Computerization, Productivity, and Quality of Worklife- Robert Kraut, Susan Dumais, and Susan Koch
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According to this position, the most routine work is most likely to be automated, eliminating jobs requiring low skills and eliminating the most boring and repetitive tasks within more skilled jobs. So far so good, but this does not define the working conditions, does not define the boundary conditions of computerization. Computerization has added intellectual content to work by making activities more abstract. I do not know how activities can be abstract; after all activities are activities only if they make an impact in real life. Abstraction is an intervening stage. I want you to note this very carefully, abstraction is an intervening stage; abstraction can never be a terminal phase in the ultimate analysis - a terminal phase will have to show its impact on the real world conditions.

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Computerization - Benefits

- Decision making
- Work process
- Productivity
- Communication
- Management




Source: Computers for business, a managerial emphasis, Business publication inc, Hugh J Watson, Archir B caroll, 1980

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Decision Making and Management

- Computerization can assist decision making at various level of management.
- At lower level management , where decisions are highly programmable in nature, computer-aided decision rules can be generated for handling them.
- E.g. monitoring of inventory levels, the preparations of large payrolls
- At top level management, computer can provide necessary information to assist them in taking sound decisions.



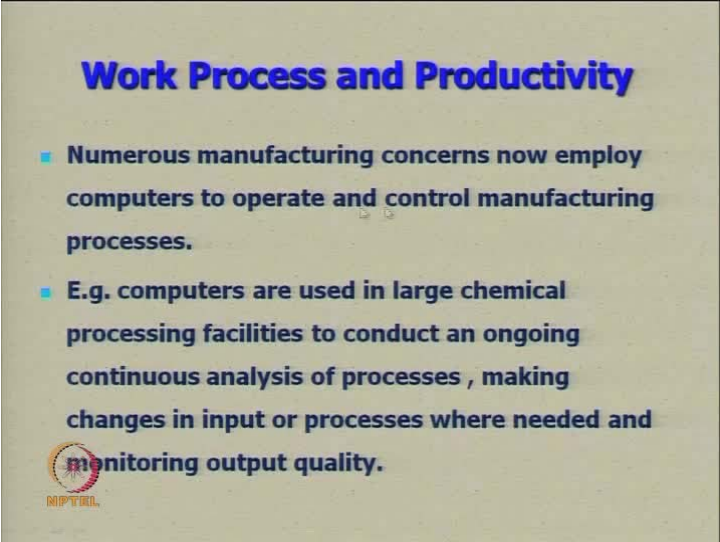
The benefits of computerization are obvious. Decision making, work processes, productivity, communication management, I do not think any of these topics require any elaboration at all in an environment like today. Decision making and management is also affected by computerization because it can assist decision making at various levels of management. At lower level of management, where decisions are highly programmable in nature, computer aided decisions rules can be generated for handling them; monitoring of inventory levels, preparation of large payrolls, but if you notice whether it is monitoring of inventory levels or preparation of large payrolls these are not decision

making roles at all, these are feeders to decision-making. What I have repeatedly found is people start singing **pianos** to computerization and ultimately, the real advantage of computerization you find in enumeration.

Because remember only that can be computerized as which has been anticipated .You cannot computerize that which has not been anticipated. Anyone who has any experience of managerial decision making is conscious of the fact; that even at the middle level you are faced with situations, which are quite unique both in terms of business and human resources.

At top-level, computer can provide necessary information to assist them in taking sound decisions that seems to be true, provided you know how best to use a computer input and that is a very important **caveat**.

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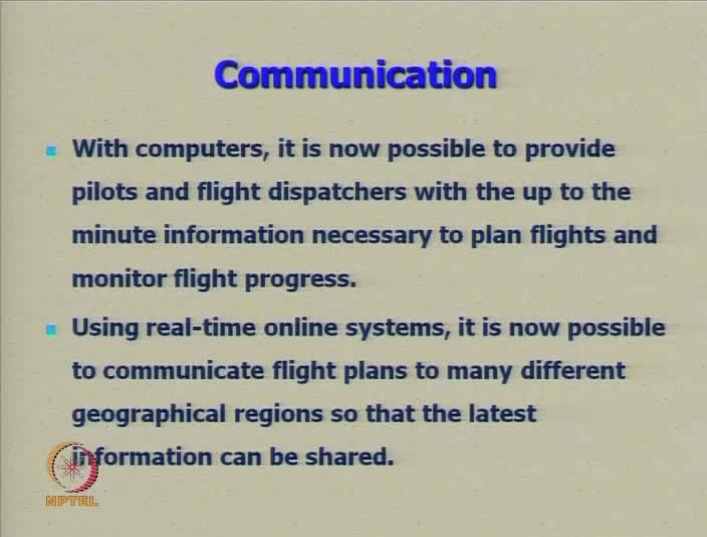
Work Process and Productivity

- Numerous manufacturing concerns now employ computers to operate and control manufacturing processes.
- E.g. computers are used in large chemical processing facilities to conduct an ongoing continuous analysis of processes , making changes in input or processes where needed and monitoring output quality.

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Numerous manufacturing concerns now employ computers to operate and control manufacturing processes true, but all these are anticipated situations. Computers are used, in large chemical processing facilities to conduct an ongoing continuous analysis of processes, making changes in input or processes where needed and monitor monitoring output quality.

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Communication

- With computers, it is now possible to provide pilots and flight dispatchers with the up to the minute information necessary to plan flights and monitor flight progress.
- Using real-time online systems, it is now possible to communicate flight plans to many different geographical regions so that the latest information can be shared.

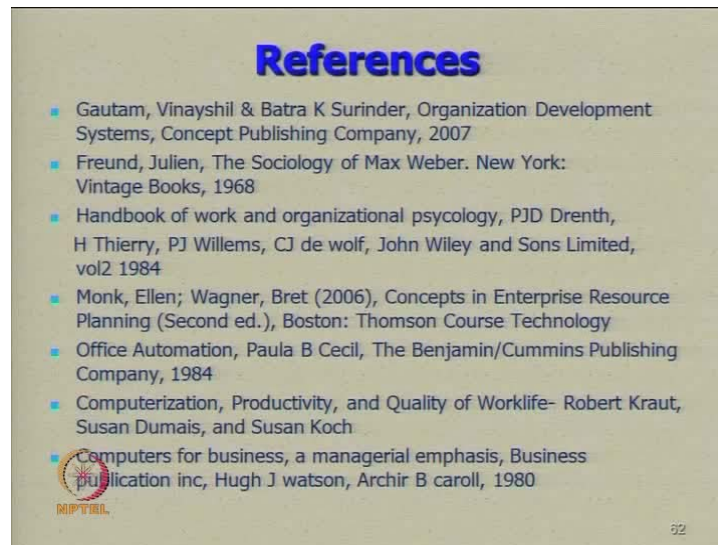
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Obviously, there is a close relationship between computers and communication. We know much of that already, so I do not think internet needs to be recommended to anyone or internet needs to be elaborated to anyone and therefore we shall not refer to it, but we are talking of business communications and that is a limitation of computerization. There are not many cases of serious business transactions through computerization. At the end of the day, what is being communicated over computers is the most pedestrian and the routine stuff because this is a factor of the kind of secure systems, which you can create and totally secure system is a theoretical possibility. **only**

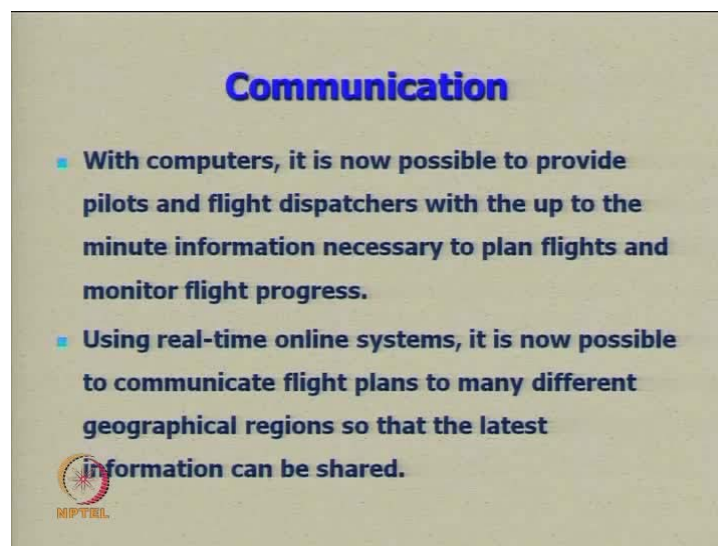
So, what is the answer, **which they gave because you know this has not stopped the onward march of computerization. People will take that risk** it has meant to solutions, which sound positively trivial; do not use the channel, which you use for business communication for your regular communication. So, you are already creating two channels: you are reducing the possibilities of a human intervention, but you have not made the channels more secure and unless the channels are made secure there will be no serious use of using computerization for serious business communication, which reduces computerization straight away to a middle level intervention.

Therefore those of you, who worship computers should continue doing so and why not, but please remember this is basically a mid-level intervention it cannot be and has never been a top level intervention.

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With computers, it is now possible to provide pilots and flight dispatcher with up to minutes of information necessary to plan flights this is true and there is no point in debating what is obviously correct. Using real-time online systems, it is now possible to communicate flight plans to many different geographical regions so that the latest information can be shared; therefore the biggest contribution of computerization to communication is speed, but the content cannot be top-level content. Like in each case there are set of references, but to sum up therefore, it is important to realize that all these processes though having emerged in a linear fashion can and do exist concurrently and

are likely to do so for a long period of time. Yet, in fact my own feeling is a fourth level of sophistication of technological up gradation would have already come with these three already existing and will continue to exist concurrently with the possible fourth one to come in the future.