

JOURNAL OF

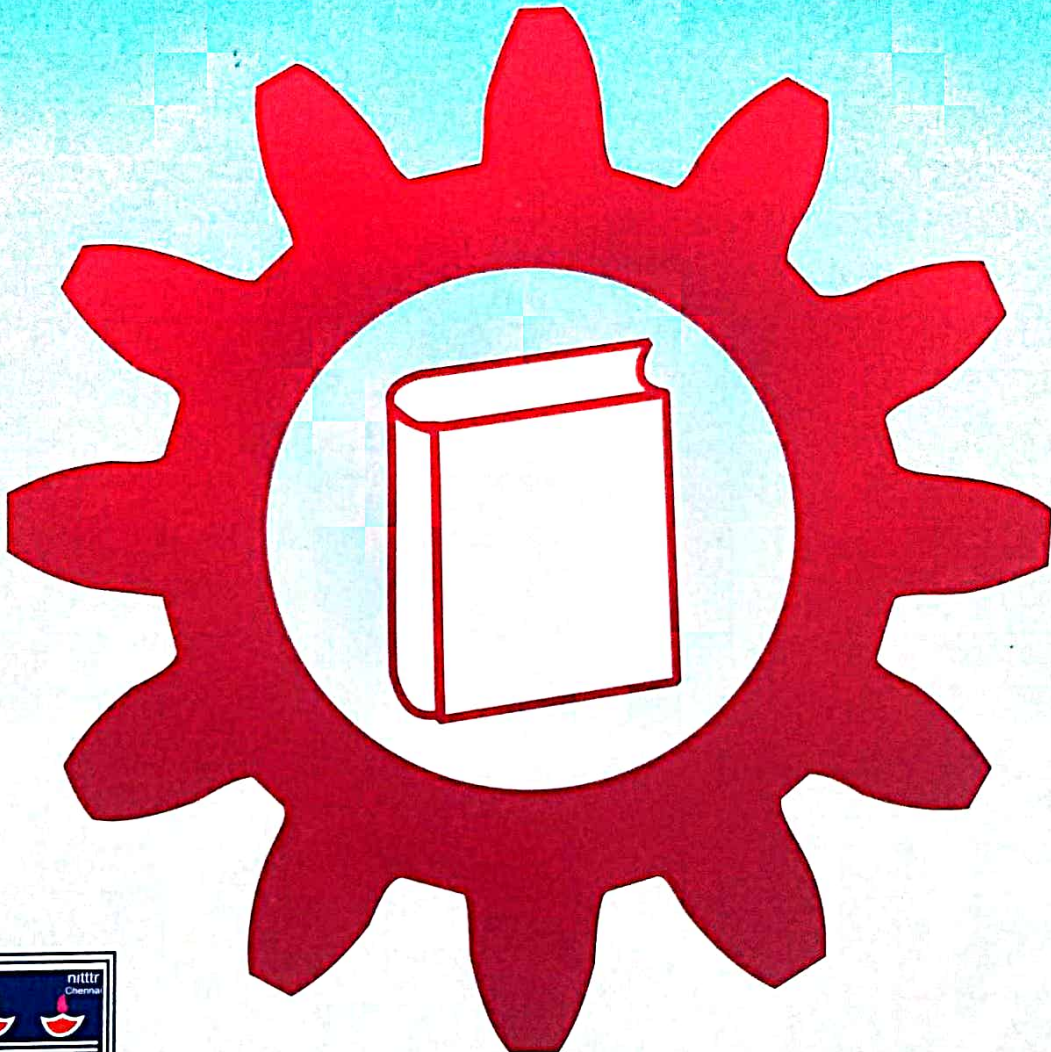
TECHNICAL AND VOCATIONAL EDUCATION

ISSN 0971 - 8508

Volume 21

Number 2

December 2004



**NATIONAL INSTITUTE OF
TECHNICAL TEACHERS TRAINING AND RESEARCH**

(Ministry of Human Resource Development, Govt. of India.)

CHENNAI

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EDITORIAL

We are happy to publish the Journal of Technical and Vocational Education Volume 21, Number 2 and we sincerely thank the Authors for their contributions. This present volume contains a few articles and research papers, which are well thought out in the perspective of Technical and Vocational Education. We believe that these articles and research papers will be useful to our readers.

Dr. Sonja Zorga and Bojan Dekleva from Slovenia have contributed a paper on "Supervision - The Means of Professional and Personal Development of the Professional". This paper is based on their experience in Slovenia. According to the authors, supervision is not only an important educational and developmental method, but also a useful method for prevention of mental health problem. Participants undergoing supervision process face a variety of problems. By reflecting on their working situations they get some professional as well as personal insights.

Supervision to be effective, should be value based. Professor Jaiprakash Narain has contributed the article titled "The Value Based Educational Leadership" where he has considered different parameters of leadership. He has summarized his article by presenting golden rules of leadership.

In this volume we have published a research paper on "Organisational Health: A Comparative Study". Prof. Kamalanabhan from India and Prof. Taap Manshoor from Malaysia conducted a study to examine the organisational health of a local Malaysian Organisation and Multinational organization. It was found that there are significant differences between the Managers in local company and foreign company. The study is quite elaborate in nature and findings have significant empirical value.

Dr. Gupta in his article titled "Changing Activity Profile of Mechanical Engineering Diploma Holders" has highlighted the changes that have taken place in the job profile of Mechanical Engineering diploma holders at their work place. He has also suggested curriculum changes in the existing curriculum of Mechanical Engineering Diploma Programme so as to enable the learners to become competent as per changing requirements.

Computer and Cyberspace are becoming more and more attractive to our younger generation as a means of spending their time. Mr. Rajendran and Dr. Madhavan in their article titled "Computer Cyberspace Excitement and Addiction" has brought into notice to the readers on explosion of excitement about the Internet and they have termed this excessive excitement as a type of addiction that has invaded the human psyche.

Mr. Arularasu and Dr. Barki contributed the paper "E-Safety Information System for Industries". This paper describes an attempt of designing computerized safety information

system to inculcate the knowledge of safety education and training in the minds of labourers, workers, and safety managers.

Mrs. Malliga, Dr. Gnana Sambanthan and Dr. Geetha have contributed the paper titled "Text Mining and its Application in Education and Training". This paper discusses the different tasks of text mining and its importance to relevant applications. The authors have proposed a general framework of text mining.

Teaching in engineering institutions is the talk of the day which need immediate attention to the academics and teacher trainers to develop various effective paradigms and models related to teaching. Prof. Saravanan, Mr. Anbalagan and Dr. Viswalingam have presented their idea on roles of Teachers in Engineering Institutions pertaining to characteristics of teacher, methods of technical teaching, curriculum development and co-curricular activities in their article on "Teaching in Engineering Institutions".

Dr. Mandal and Prof. Srinivasan have contributed the paper "A Study on Effectiveness of Training for Pharmacy Students". For this purpose, an opinionnaire "Training Effectiveness Proforma" was developed by the authors and used in their study.

We once again acknowledge the contribution of the authors to the present volume. We welcome papers and research articles for our future issues. We thank Dr. S. Renukadevi for shouldering the responsibility of editing of the Journal.

– Editor

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Supervision – The Means of Professional and Personal Development of The Professional

SONJA ZORGA and BOJAN DEKLEVA

In the educational setting supervision is a special learning, development and supportive method, enabling professional workers to acquire new professional and personal insights through their own experiences. It helps them to integrate practical experiences with theoretical knowledge and to reach their own solutions to the problems they meet at work, to face stress efficiently and to build up their professional identity. From this point of view supervision is not only an important educational and development method, but also a useful method for prevention of mental health problems.

While traditionally supervision was in an educational setting understood mainly as control and professional counselling exercised by state administration, recent movements in Slovenia are trying to implement supervision as a method which focuses primarily on the educational function, strictly separated from the administrative control. Kadushin (1985) proclaimed that administrative and educational supervision share the same ultimate objective, which is to provide the best possible service to the clients. While administrative supervision provides the structure directed toward this goal, educational supervision provides the training (the knowledge and instrumental skills) which enables worker an effective practice.

Through educational supervision workers internalise sets of principles, attitudes and values that will partly govern their behaviour. This enables them to act more autonomously and independently and to make appropriate decisions without feeling a constant need to consult the authority. In such a way "educational supervision is the context for role transition from lay person to professional, providing the supervisee with the sense of occupational identity" (Kadushin, 1985, p.129). Kadushin stressed, that the development of professional knowledge and skill permit relaxation of administrative controls, as a result of which the worker will not only feel a personal obligation to do a good job, but will also have the necessary competence and capability to do so. That means that more educational supervision consequently requires less administrative supervision.

In thus conceptualised supervision the learning process of professional workers must be of essential importance. Actually, the aim of supervision is to engage workers in a learning process helping them to integrate what they are doing, feeling and thinking. It connects practical experiences with theoretical knowledge and through them combines work with study, enables the transfer of theory into practice and encourages the learning of an autonomous action. In this way it contributes

to the professional and personal development of a professional worker. That means in supervision, work, education and personal development are linked together through the process of experiential learning.

Supervision, which is lately being implemented in the area of educational and social activities in Slovenia, has been derived from the Dutch model and could be called **“the developmental –educational model”**. It emphasised two especially important elements of supervision – the experiential learning process and the role the reflection. It is characterised by the developmental–educational and supportive components of supervision. whereby supervision is to be understood as a personal monitoring and encouragement of the worker’s professional development. The objective of supervision in the developmental–educational model is mainly to enable the professional workers to enter a learning process, assist them on the path of seeking their own solutions to problems they meet at work and enable them to cope with stress more effectively. (This model has been described in the article “Supervision Model in the Educational setting”(Zorga, 1994) and in “Supervision seen as a process of experiential learning”(Zorga, 1997b).

If supervision is to be really effective, it has to represent a continuing process, taking place regularly and over a longer time span. The supervision cycle, thus, consists of approximately 15 to 20 meetings, except where a different arrangement has been made in advance because its purpose is to resolve a specific concrete problem.

Learning process in supervision

In reflecting about what actually happens in a supervision process, it cannot be overlooked that one learns by experience or

through experiential learning. The phrase itself tells us that the really important thing is what one has experienced or lived through. Kolb (1984), the founder of experiential learning, defines learning as a process, in which knowledge is created through the transformation of experience. Its basic components are experience and its transformation. The perception of experience does not suffice for learning, something must rather be done with it. The use of experience in the supervision process corresponds to Kolb’s model of learning as a cyclical process in which four activities interact: the concrete experience, its reflection, its abstract conceptualisation and experimentation.

Kolb stresses that the learning process can begin at any point of this circle but it should pass through all the four phases. Let us examine in more detail what role is ascribed to each of the four activities or learning phases in the supervision process.

Hence in supervision the learning process should typically begin with practical experience the worker acquires in performing his/her job. It then proceeds along the four activities in the following way:

1. Concrete experience – in supervision this refers to the account of the concrete work experience, where the event is carefully described (supervision material).
2. Reflection of the experience or thinking about it – becoming aware, analysing and reflecting about the factors which influenced the experience and the individual’s role in it.
3. Abstract conceptualisation or searching for the meaning of the experience – comparing and searching for possible connection between the reflected

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experience and other past experiences (one's own or the experiences of colleagues), linking this with theoretical knowledge, attitudes, etc.

4. Practical experimentation or doing it in a different manner – planning new behavioural patterns and strategies and testing them in practice.

The supervisor's role is actually to guide workers in their learning cycle through all four activities or phases of the learning process already described. He/she creates such learning situations which encourage workers to transit from one phase to another. Therefore the supervision meetings should take place parallel to work, so that the learning process proceeds in the form of a spiral reaching always higher levels. We do our job, at the supervision meeting we reflect about what we have done and learn from it, then we return to our work and test what we have learned. The role of supervisor is to offer us opportunities for safe experimenting and testing of ways and behaviours which are new to us. He/she is to protect us from getting into situations that would endanger us. That is why he/she discusses with us the possible solutions as well as their consequences. But which solution we eventually decide upon and what we consequently learn from the supervised situation is our responsibility alone.

Once the worker has recognised the meaning of an experience or an event, he/she frequently comes to the realisation that it is actually an experience of several generations, which has already been recorded in numerous professional papers. It is, however, necessary that each individual come to such an enlightenment him/herself. Once the experience and its meaning have been integrated, they become our wisdom. This wisdom is not static in nature because in the

process of integration one constantly has to review and sort one's knowledge, which transforms one's cognitive structure. In this way new theoretical knowledge and new cognitions, acquired by the supervisee through the reflection of the existing experiences in the process of professional development become integrated with the former schemes of behaviour and perception, developing into different and new patterns of professional functioning and convictions.

It is well known that development in adulthood is mainly characterised by changes induced by learning and to a lesser extent by maturation. Mezirow defines learning as the process of making new or revised interpretation of the meaning of an experience, which guides subsequent understanding, assessment and action (see Merriam and Clark, 1992, p.3). Like Piaget (1961), Mezirow also claims that several experiences from everyday life can easily be assimilated into our mental structure because they are congruent with experiences from earlier on. However, some life experiences are incongruent with past ones and cannot be properly interpreted with the help of the existing mental structure only. Such experiences could be divorce, loss of job, a new position, the beginning of a new project, and many other unexpected situations one so frequently meets in innovative work. Experiences which cannot be readily assimilated challenge our existing mental structure towards restructuring and lead to new recognition (Piaget) or to perspective transformation (Mezirow).

Experts doing research on learning in adulthood have established that such learning is mostly based on life experience and is not acquired through formal education. Everyday life situations offer many learning opportunities. However, we do not learn the

same from each experience, and some experiences have a greater impact on us than others. Since work plays an important role in the life of an adult, it is only understandable that work experience represents most of the material we learn from in adulthood. In their study Aslanian and Brickell (1990, see Merriam and Clark, 1992, p.2) found that fifty-six percent of the learners were learning because of some work-related transition.

Supervision considers well four Knowles' assumptions about the characteristics of adult learners, which are (see Sawdon, 1996 : 7):

1. as a person matures, his self concept moves from one of being a dependent personality towards self direction;
2. he accumulates a growing reservoir of experience that becomes an increasing resource of learning;
3. his readiness to learn becomes oriented increasingly toward the developmental tasks of his social roles;
4. his time perspective changes from one of postponed application of knowledge to immediately of application, and accordingly his orientation towards learning shifts from one of subject centeredness to one of problem centeredness.

Interdependence of personal and professional development

Mitina (1997), a Russian psychologist, claims that the development of integrated qualities and characteristics of an individual as well as the process of preparing for a profession actually depend on one another. Therefore professional development during a certain life period is the result as well as the means of the individual's personality

development. In this connection Mitina speaks about creative self-realisation. She believes the professional development to be inseparably linked with personal development – self-development is essential for both. In her opinion self-development represents the ability of the individual to change and try to become professionally autonomous in spite of unfavorable conditions or sacrifices. The basic prerequisite for the development of integrated characteristics of the professional worker is, therefore, his/her understanding that one needs to change, to transform the inner world and search for new possibilities of self-realisation in the professional field, in short, to improve professional self-awareness. Only in this way can one avoid stagnation at work which, according to the results of studies mentioned of Mitina, happens to doctors and teachers already after 10 to 15 years, and with leading personnel even earlier (5 – 7 years).

Since the personality and behaviour of a professional worker crucially determine his/her interaction with the client and relevantly participate in his/her professional competence, it is understandable that the professional worker him/herself, with his/her attitudes, feelings, and behaviour necessarily and unavoidably represents the object of educational supervision.

For Kadushin (1996) the basic aim of supervision is the development of better self-awareness of the professional worker. In this way, he/she can function in a more emancipated, disciplined and conscious fashion in the future. The development of a higher level of self-awareness is in his opinion necessary also because the problems with which the professionals in helping professions deal influence them personally as well. Their work is closely knit with life itself and it is therefore sometimes very difficult to

demarcate the two. Becoming conscious of the similarities in the life's experiences of the client and his own also enables the professional worker to understand better his/her client's behaviour.

Next to a high level of self-awareness, the professionals in helping professions are required to have successfully integrated professional skills and knowledge with their personal characteristics, competencies and over sensitivities. This enables them to respond harmoniously in professional situations, to act in accordance with their thoughts, feelings and wishes and at the same time consider the professional doctrine and demands as well as the realistic possibilities of a concrete situation.

According to the Dutch supervisor van Kessel (1994), supervision can particularly contribute to such integration. The supervisee has the opportunity to review and recognise his/her personal strengths and weaknesses, possibilities and responses that can either improve his/her professional competence or weaken it and consequently impede his/her professional development.

For this reason van Kessel (1994 : 104) defines the ultimate goal of supervision as a "two-dimensional integration". where the professional worker is capable to harmonise effectively his/her functioning as a human being with his/her own personality characteristics (first dimension) and the characteristics of his/her professional functioning and requirements (second dimension) in such a manner that the result achieved can be referred to as the professional self.

Although linked to the personal dynamics of the supervisee, the work must be limited to the situations originating from work

experiences and intended mainly to improve the professional performance of the supervisee in the future. In the opinion of van Kessel, personality development becomes necessary in so far as it is required by his/her professional role. The author (ibid. : 105) suggests that in the process of supervision our attention should be directed towards two intermediate targets important for the attainment of professional integration; the ability to reflect and the integrative capacity. Integrated functioning and the capacity for integration are always reached only as an apparently stable balance. The final state of balance cannot be achieved once and for all, but must be re-established again and again because all its elements are constantly changing, our personality, professional tasks and obligations, clients, jobs and the social context.

In supervision, reflection is used as an instrument of learning which simultaneously develops in the supervisee the ability of reflecting as the fundamental goal of supervision. The more the supervisee is empowered to use this capacity, i.e. of the "internalised supervisor", the more he/she is capable of independent professional performance (ibid.).

At the end I would like to present some results of the analysis of 14 evaluation reports written by professional workers after having been involved in the supervision process two or three years (Zorga. 1997a). They give an interesting illustration of personal and professional learning and development in supervision.

Participants claim that the most important outcomes of their supervision process refer to their personal growth and development. They reported that supervision sessions helped them to get some deeper

insights into their personal way of functioning, thinking and decision making. They became more self-confident, developed higher self respect and began to search for their own answers instead of looking for the answers of other authorities. They became more aware of their strengths and their weaknesses so that they can now use and control them more consciously. Some of them learned to recognize and to listen to their feelings better and improved their communication by expressing their feelings and thoughts more clearly and appropriately. They began to take better care of their own health and well being by looking for the balance between "what they can and what they wish to do" and by learning how to take for themselves what they are in need of. By facing different options and ways of solving problems they extend their tolerance to differences and set up greater distance toward problems in general (they learned to look upon the problems more from the distance).

That is why experiences and knowledge which they had gained in the supervision

process reflected in their private as much as in their professional life. Some of them realized that in supervision they had for the first time looked into what they were doing more precisely and that they reflected the effects of their actions systematically. This helped them to clarify their professional identity, to set the limits between their responsibilities and the responsibilities of others, to state their borders more clearly and to use their professional skills and knowledge more efficiently. They reported that in supervision they had been able to learn from their working situations faster and had paid lower price for the mistakes they had made.

This means that in the supervision process participants were faced through their professional experiences with their personal ways of functioning, thinking and feeling, their limitations, strengths and weaknesses. By reflecting their working situations they get some professional as well as personal insights. In such a way learning in supervision enabled them their holistic growth and development.

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The Value Based Educational Leadership

G.B. JAIPRAKASH NARAIN

CONCEPT

Leadership is an important aspect of managing people. It is the art of dealing with and influencing people and a process of inspiring them so that they will try hard happily and actively towards the achievement of group/organizational goals. It doesnot mean, 'taking charge'. It means running at the head of the group/organization, and not driving it from behind ie. enable to lead others and involve them, but not pressurize them.

The Webster's dictionary defines leadership as an element of personality that causes people to follow. It defines a leader as a person who by force of example, talents or qualities of leadership plays a directing role uses commanding influence, or has a following in any sphere of activity or thought.

There are many beliefs concerning leadership and leader. For example: Is leadership a rare skill? Are leaders born, or made?

Let us examine the misconceptions about leadership and leader:

MYTH	FACT
Leadership is a rare skill, seen only in few people.	Every individual possesses the leadership abilities.
Leaders are born, not made.	Leaders can be made. Every one can learn to increase his/her capacity to lead.
Leaders are only created by unusual situations and great events.	Leaders function in diverse situations.
In an organisation, leadership exists only at the top level.	In an organization, leadership roles are present at all levels.
The leader controls, directs and manipulates the group members.	Leaders, who are effective, use power to empower others.
Leaders are charismatic.	Most leaders have no particular charisma.

(Source:<http://www.lib.purdue.edu/staffdev/supervisor/leadership>).

The concept of good leadership has not changed over time. Given in the following table are elements of distinction between Pseudo Leaders and Great Leaders that guide their behaviour:

THE VALUE BASED EDUCATIONAL LEADERSHIP

Pseudo Leaders	Great Leaders
position	action
control	support
authority	mentoring
technical expertise	people expertise
talk	listen
tell	ask
self-centred	relating well to others
gives order	gets input
scare	inspire and motivate
secretive	inform and enlighten
wait for consensus	Create consensus
assume communication	get feedback
scheme	plan
manage things	lead people
keep power	empower
intimidate	coach
drive	lead
rely on reputation	rely on character
look for short-term gain even at the expense of long-term pain	accept short term pain for long-term gain.

- Leaders have a long-term outlook while managers have a short-term view.
- Leaders are concerned with asking what and why but managers ask how and when.
- Leaders originate while managers imitate.
- Leaders challenge the status quo while managers accept it.

Some of the more important characteristics of leadership are enthusiasm, dedication and courage. Leadership starts with vision for future, concern for others and mentorship that provide change and success in the organization.

While the manager works to carry out the aims of the organization, the leader serves to create new aims, tweak old ones, or initiate new courses of action. The leader who works in concert with others can make a difference. The leader is willing to make sacrifices and to inspire others to do the same and creates something of value that did not exist before. The leader exhibits positive energy and energizes others. He/She actualizes the dream that has been inspired in others. In the process of self-actualizing, the leader is becoming all that he/she can be and making others believe they can do the same. The leader challenges the status quo, in the positive and diplomatic ways, in order to continuously improve.

LEADERSHIP Vs. MANAGEMENT

A leader can be a manager, but a manager cannot necessarily be a leader. The leader of the group may emerge informally based on the selection of the group. To achieve the goals of the organization, if a manager is able to influence people without using his or her formal authority, then the manager is said to be demonstrating leadership. Leadership qualities are responsible for the success or failure of managers in an organization.

The differences between leaders and managers are:

- Leaders innovate while managers administer.
- Leaders develop while managers maintain
- Leaders inspire while managers control

QUALITIES, FUNCTIONS AND VALUES OF LEADERSHIP

A true leader works at creating more leaders, not followers. A leader inculcates in people the desire to carry on the mission after he/she is gone. It takes internal security and competence to create new leaders. Leadership is another name for moving confidently on a firm foundation.

True leadership is the ability to be a catalyst for change, to inspire and persuade people to follow the righteous path. A leader puts ideas into people's minds and inspires them into action. Empowering one's followers rather than controlling them is the hallmark of true leadership.

The qualities of leadership are vision, passion, self-sacrifice, confidence and role modeling. A strong leader is one who brings out the best in himself/herself and others. A strong leader would have self-esteem, communication skills, teamwork skills as well as conflict resolution skills. In other words, a leader should be true to himself / herself, observe and listen carefully, speak clearly, have the ability to work well with others and also handle conflicts non-violently and creatively. Leaders perform various functions like motivating, confidence building, planning, coordinating, decision-making, interacting, negotiating, time-management, mentoring, etc.

Stuart R. Levine defines an "Edu-leader" as a person, driven by core values, who builds trusting relationships through effective communication. He proposes that the following seven principles will define the elements of successful transition from the 20th to the 21st century:

- from Career-driven to Core Value-driven
- from Chaos-driven to Process-driven
- from Technology-driven to Relationship-driven

- from Information gathering to Distilling and Sharing information
- from Me to We
- from Product focus to people focus
- from Leader to Edu-Leader.

CONCLUSION

The Golden Rule of Leadership may be summarized in seven aspects:

- Credibility is the foundation of leadership
- Leadership is everyone's business
- Challenge is the opportunity for greatness
- Leaders focus on the future
- Leaders are team players
- The Legacy you leave is the life you lead.
- Caring is at the heart of leadership.

Leadership may seem an overwhelming responsibility. And, in many ways, it is. You have responsibility to your vision, to your team, to your customers, to your organization, to your industry, to your community, and to yourself. Leadership is exciting, challenging, and the morally right thing to do. If you've chosen to travel the leadership road, continue on that path despite the inevitable roadblocks you'll encounter, and if you have already effected positive change, you are making a difference, an important difference.

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Organisational Health: A Comparative Study

T.J KAMALANABHAN and AMAT TAAP MAHSHOOR

Abstract

This study was conducted to examine the organisational health of a local Malaysian organisation and a Multinational organisation. Organisational health refers to a relatively but quasi-enduring state of physical, mental and social well-being of an organisation and not merely an absence of strike and lockout. Data was collected from the managers using convenience sampling from the two organisations. Organisational health questionnaire was used to collect the data from 60 middle managers on the physical and mental health of the organisation.

The data was analysed using the t-test to find out the differences between local and multinational company. It was found that there were significant differences on all the factors under study. It was also seen from the results that the local company allows more autonomy, and creativity among their employees. Significant differences were also found on some of the variables like age and years of experience. Employees with 30 years and above perceived organizational health dimension as positive and favorable compared to employees who were less than 30 years.

Introduction

Organisational health refers to a relatively but quasi-enduring state of physical, mental and social well being of an organisation and not merely an absence of

strike and lockout. Organisations can become sick, just as people can. This is not surprising as organisations are made of people. Sickness in organisations reflect the behavioural illness of people. People get old and tired, slow and down and become far less effective as they get older. This also applies to organisations.

Organisations are living systems with their own needs and life cycles. Like other living things, they experience change and conflict as they grow and develop. Sometime during their life cycles, most organisations become ill and need treatment and rehabilitation. Some organisations, like people, become chronically ill but continue to function until their eventual demise, other organisations successfully conquer acute episodes of illness, and still others appear to be "genetically" favoured and rarely experience illness.

A number of studies on organisational health refers to health as a combination of physical, mental and social well being of the people and organisation. The literature on health identifies biological, psychological, and social processes by which a person may become sick (Bruhn & Chesney, 1994). It is important to analyse organisational health not merely from the perspective of the absence of disease but on factors that contribute to the unhealthy organisations and the people inside. Studies on organisational health are important since healthy organisations produce better results. Examining the factors that contribute

to unhealthy organisation increases the knowledge and information so that managers, academics and shareholders may understand the importance of each factor and undertake precaution and measure to overcome them.

The elements of organisation can be seen from two perspectives they are physical and mental health. Physical health is defined as the degree of perceived safety, comfortability and adequacy of physical environment of the organisation including lighting, airy work place, safe passage, comfortable handling of tools etc. Mental health of the organisation refers to the degree of perceived self-awareness, autonomy, creativity, self-evaluation, trust, coping, self-satisfaction and organisational involvement.

Organisations can be unhealthy due to the experience in their internal systems, through external pressures, competition, legislation and economic conditions. The indicators of deteriorating health of organisations are high number of accidents, high turnover of employees, stress and burnout.

In a study conducted by Chaudron (1995) it is stated that the human resource director can play a very important role in maintaining organisational health. His role can be said to be similar to a doctor where the organisation's problems can be diagnosed and treated. By assessing the breadth of the problem, it is possible to concentrate and search for remedial action.

Sorohan and Erica (1994) stated that the concept of organisational health rests on a single principle that the company's health, productivity, and survival depends on the ability to foster the health, success, and development of its people. The ability of these

people to adapt is the key to organisational health (Lifson, 1984). Japan provides a good model of response to both catastrophic and incremental change. Adaptation has been the primary source of Japanese corporate success. The success of Japanese organisations are due to their emphasis on collective goals, a commitment to social contracting, informal contract-based relationships that guide employment opportunities, career development, subcontracting and inter-industry relations.

Unhealthy organisation can create stress, erode physical and mental health, and lower productivity. They also increase the likelihood of accidents, injury, harassment, discrimination, absenteeism and turnover (Lamber, 1995). According to Cooper and Cartwright (1994), healthy organisation are those which have low levels of stress, high organisational commitment and job satisfaction, low sickness, absenteeism and turnover, good industrial relations, good records of safety and accident, and absence of fear of litigation.

Lambert (1976) found that successful healthy organisations have the following characteristics. They have high level of involvement from employees, clear communication between employer and employees, and built in responsibility and feedback. These characteristics are in line with the research findings of Healthy Companies (Sorohan & Erica, 1994) who found that there are certain dimensions of organisational health. Some of these important dimensions are open communication, employee involvement, learning and renewal, valued diversity, institutional fairness, equitable rewards and recognition, and common economic security.

The objective of this study was to analyse the level or organisational health

between a foreign and a local company in Malacca, Malaysia. The study also analyses the impact of demographic variables such as marital status, gender, years of working experience and age of the employees on organisational health factors.

Method

Sample size

The sample consisted of 60 participants from two manufacturing organisations. These participants were chosen from a local company consisting of 30 middle managers and a multinational company consisting of 30 middle managers. In each organisation, the middle managers were chosen randomly from the three main departments, namely:

- administration which consists of human resources, administration, and finance;
- production and engineering department; and
- sales and marketing department.

All 60 middle managers responded to the questionnaire.

Data collection

Organisational health questionnaire developed by Dutta Roy (1990) was used to collect the data from 60 middle managers. Reliability of the questionnaire was found to be 0.84 and face validity for the questionnaire was established. Questions were asked based on eleven items on organisational health. The items are as follows:

Self-awareness, autonomy, creativity, self-evaluation, trust, coping, self-satisfaction, involvement, environmental awareness, environmental satisfaction and physical health.

Results and Discussion

It was decided to use t-test to find out if there is any relationship between the organisational health factors and other demographic variables under study.

Table 1 shows the distribution of ages for each response category.

Table 1: Age Distribution of the Sample

Age (in years)	Frequency	Percent	Cumulative Percent
Below 25	13	21.7	21.7
26-30	22	36.7	58.3
31-35	11	18.3	76.7
Above 36	14	23.3	100.0
Total	60	100.0	

More than half (56.7%) of the respondents were less than 25 years of age and 43.3% were 25 years or older.

Table 2 Shows the Gender Distribution of the Sample

Table 2. Gender Distribution of the Sample

Gender	Frequency	Percent	Cumulative Percent
Male	43	71.7	71.7
Female	17	28.3	100.0
Total	60	100.0	

About seventy two percent of the respondents were male, and 28.3% were female.

Table 3 Shows the Mean, SD and t-value for Organisational Health is Local and Foreign Companies

The data was analysed using the t-test to find out the differences between local and foreign companies, On analysing the data (Table 3) it was found that there were significant differences on all the factors under study. The local company seems to have more autonomy, and allow more creativity among their employees. The respondents in the local company also felt that they were more environmentally aware and there was a lot of self-satisfaction working in their organisation.

A healthy organisation has a clear mission and a set of consistent principles that frame it and distinguish it from other organisations, but it is its value that provide the how and why for people in the organisation to behave as they do. An organisation that values democracy, autonomy, creativity, and entrepreneurship empowers individual employees to share their talents, skills, and ideas in helping the organisation achieve its goals and stay focused on its mission. An environment of open communication and sharing of information conveys to all employees that the leaders are not the only persons in the organisation who

have good ideas. This provides for a work environment of trust and encourages creativity and innovation.

Table 4 Shows the Mean, SD, and t-value for Organisational Health Perception by Male and Female.

Data analysed between male and female on organisational health revealed that self-evaluation factor alone had significant difference between the two groups (Table 4). This towards the goal attainment.

Employees directly contribute to maintaining a healthy organisation when they are valued and feel in control and effective at their jobs. Employees feel invested in organisation when they feel free to take risks and can contribute ideas for the organisation's improvement. Employees in a healthy organisation are encouraged to be creative, to learn new skills, and to assume greater responsibilities. This is reinforced when employees are given feedback on their performance and employee rewards are made explicit. Employees want to continue to work

Table 3 Organisational Health in Local and Foreign Companies

Factors	Foreign (N=30)		Local (N=30)		df	t-Value
	Mean	S.D	Mean	S.D		
Self awareness	2.967	0.32	3.412	0.37	58	4.979**
Autonomy	2.763	0.62	3.440	0.43	58	4.922**
Creativity	2.943	0.60	3.597	0.35	58	5.153**
Self-evaluation	2.743	0.42	3.357	0.16	58	7.443**
Trust	2.957	0.66	3.453	0.31	58	3.727**
Involvement	3.016	0.34	3.277	0.18	58	3.761**
Physical Health	3.075	0.33	3.571	0.23	58	6.764**
Coping	2.983	0.64	3.275	0.42	58	2.077**
Environment awareness	2.917	0.41	3.150	0.24	58	2.720**
Environment satisfaction	3.033	0.64	3.567	0.33	58	4.034**
Self satisfaction	2.916	0.40	3.400	0.31	58	5.255**

** Significant at 0.05 level

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in a healthy organisation where they are happy, productive, and receive rewards.

Table 5 shows the Mean, SD and t-value on Organisational Health Perception by Number of Years of Working Experience

On analysing the data it was also found that significant difference were seen on the

years of working experience towards perception of organisational health (Table 5). The results showed that the respondents with more than 5 years of working experience found autonomy as an important factor in making decisions with respect to the job and targets. They also felt that creativity was important in solving different problems of the

Table 4 Organisational Health Perception by Male and Female.

Factors	Male (N=43)		Female (N=17)		df	t-Value
	Mean	S.D	Mean	S.D		
Self awareness	3.200	0.40	3.165	0.45	58	0.297
Autonomy	3.093	0.59	3.123	0.74	58	-0.168
Creativity	3.330	0.55	3.118	0.67	58	1.269
Self-evaluation	3.144	0.36	2.811	0.54	58	2.766**
Trust	3.177	0.30	3.277	0.49	58	-0.608
Involvement	3.124	0.31	3.204	0.27	58	-0.939
Physical Health	3.332	0.38	3.302	0.38	58	0.279
Coping	3.128	0.63	3.132	0.32	58	-0.028
Environmental awareness	3.035	0.39	3.029	0.23	58	0.054
Environmental satisfaction	3.267	0.63	3.382	0.40	58	-0.695
Self satisfaction	3.151	0.41	3.175	0.50	58	-0.198

**Significant at 0.05 level

Table 5 Organisational Health Perception by Years of Working Experience

Factors	years (N=38)		5 years (N=20)		df	t-Value
	Mean	S.D	Mean	S.D		
Self awareness	3.124	0.36	3.325	0.49	56	1.744
Autonomy	2.997	0.61	3.335	0.59	56	2.023**
Creativity	3.195	0.53	3.485	0.49	56	2.024**
Self-evaluation	2.945	0.44	3.290	0.28	56	3.151**
Trust	3.116	0.63	3.395	0.25	56	1.888
Involvement	3.070	0.32	3.274	0.19	56	2.605**
Physical Health	3.070	0.32	3.274	0.19	56	2.796**
Coping	3.241	0.28	3.513	0.29	56	1.207
Environmental awareness	3.053	0.63	3.237	0.37	56	1.955
Environmental satisfaction	2.965	0.38	3.149	0.26	56	1.213
Self satisfaction	3.243	0.66	3.437	0.39	56	2.096**
Self satisfaction	3.065	0.45	3.307	0.34	56	2.096**

**Significant at 0.05 level

department and the organisation towards achieving organisational goals. It was perceived that a person staying in the organisation for more number of years has stronger emotional attachment with the organisation.

Table 6 Shows the Mean, SD and t-value on Organisational Health Perception by Age

The data analysed on the perceptions of the organisational health in relation to age (Table 6) found that the employees with 30 years and above perceived organisational health dimension as positive and favourable compared to employees who were less than 30 years. This study is in line with the findings by Lin (1998) where she found that the older employees perceived organisational health factors positively to management in respect of empowerment.

With increase in age a culture of trust in an organisation increases organisational health. The top management should provide

greater autonomy to enable them to do their job better. The organisation should foster creativity and get the managers involved in the process of decision making. The CEO should create an organisational environment that is kind to the user. Organisational leaders should make their values and expectations explicit. Employees in a healthy organisation know what is expected of them and know how they can contribute to the organisation's goal. It is important that leaders share their vision with employees. Vision can only become realities if they are adopted by all the employees in an organisation. It must be noted that every employee in a healthy organisation is an investment and as such when permitted to grow and develop, helps strengthen the entire organisation. Finally healthy organisation plan for, rather than wait for change, Indeed, healthy organisation initiate change, encourage change and renewal and as a result, change usually can be directed and the effect of change can be controlled.

Table 6 Organisational Health Perception by Age

Factors	<30 (N=34)		>30 (N=26)		Df	t-Value
	Mean	S.D	Mean	S.D		
Self awareness	3.035	0.38	3.392	0.36	58	3.663**
Autonomy	2.853	0.64	3.427	0.45	58	3.906**
Creativity	3.026	0.62	3.588	0.36	58	4.142**
Self-evaluation	2.879	0.47	3.273	0.28	58	3.780**
Trust	3.018	0.62	3.450	0.38	58	3.121**
Involvement	3.068	0.33	3.250	0.22	58	2.440**
Physical Health	3.218	0.37	3.461	0.34	58	2.603**
Coping	2.963	0.60	3.346	0.41	58	2.775**
Environment awareness	2.927	0.38	3.172	0.25	58	2.858**
Environment satisfaction	3.162	0.62	3.481	0.46	58	2.199**
Self satisfaction	2.977	0.39	3.395	0.36	58	4.246**

*Significant at 0.05 level

Conclusion

This paper attempted to study the organisational health among managers in a local and a foreign company. It was found that there were significant differences between the managers in local company and foreign company. A significant finding in this study was that the managers in the local company were more favourable to all the dimensions of organisational health compared to their counterpart in foreign company. It was also found that gender, age and number of years of working experience are significantly

different among various organisational health dimensions.

The limitation of this study was that the sample consisted of employees from manufacturing industry and as such the results in this study cannot be generalised. A wide range of samples from various industries could have been more useful. Future research in this area should concentrate more on extensive questionnaires, which should include multiple items, multiple rankings and choices from a diversified sample.

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Changing Activity Profile of Mechanical Engineering Diploma Holders

A. B. GUPTA

Abstract

With the advent of automation and computerization, the job profile of Mechanical Engineering diploma holders has undergone a change. Further process of globalization and privatization has made their job very demanding. Accordingly the diploma students have to be trained in the polytechnics so as to cater to requirements of changed scenario. Also, the curriculum for diploma course in Mechanical Engineering has to be modified so that the competencies gained by the diploma students enable them to carry out various activities in the world-of-work efficiently. This paper highlights the changes that have taken place in the job profile of Mechanical Engg. diploma holders at their work place. It also suggests curriculum changes in the existing curriculum of Mechanical Engg. diploma course so as to enable them to become competent as per changing requirements.

Introduction

The advent of computerization and globalization has brought about a lot of changes in the industrial environment. The job profile of persons working at various levels in the industry has undergone a change. The working zone of diploma holders has expanded. They are expected not only to carry out their conventional job of supervising the workforce but, at times, required to manage various resources of an enterprise. In some

instances, they are expected to carry out the function of a skilled worker and operate precise and sophisticated machines/equipment. Diploma holders are also supposed to contribute effectively for bringing improvement in quality and productivity in the manufacturing system. Skills are getting obsolete very fast as technological changes are taking place rapidly. Due to this, diploma holders are expected to be competent in handling and managing technological changes. Use of IT (information technology) tools in every functional area is on the increase. Till recently, economic prosperity depended on skills in handling and processing materials. In the future, it will depend on the ability to process information (TIFAC, 1996). The diploma holders are expected to be well versed in using various software for drafting and manufacturing. Similarly, they have to be competent in using IT tools for accessing, storing, retrieving, processing and presenting information and for problem solving.

Changing Job Profile

Diploma holders in Mechanical Engg. find employment both in public and private sectors. In public sectors, they are employed in electricity boards, corporations, Military Engg. Services, PWD and Rural Development agencies, Airlines, and Petrochemical industries. Other industries where they are employed are machine tools, steel mills, automobile, heavy earth moving equipment.

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heavy electrical, aeronautical, railways, mining and petroleum refineries. In private sector, diploma holders get employment in a variety of industries like machine tools, automobiles, food and fertilizers, refrigeration and air conditioning, and electrical and electronics equipments production.

A broad analysis of activity pattern of diploma holders in Mechanical Engg. on their first employment has shown that a majority of the diploma holders were engaged in production, maintenance, technical supervision and testing. Some of them also worked in planning and designing area. While only a small percentage worked in the area of R & D, marketing and sales, and management (IAMR, 1997). Though the pattern of employment broadly remained the same during these years, yet the type of activities being carried out by them have undergone changes. Various activities carried out by Mechanical Engg. diploma holders in different functional areas and subsequent changes in the activities are explained as follows:

Planning : The main activities of a diploma holder in this functional area include preparing schedules, preparing routing and scheduling charts, and estimating annual requirements of components from production plan. He is also expected to ensure smooth material movement on the shop floor. With computerization, a diploma holder has also to be competent in operating various computer packages for data entry and analysis.

Manufacturing : The conventional activities carried out by a diploma holder are supervision of production processes, preparing daily progress report, and keeping records of production. He should be competent in identifying, analyzing and solving problems related to production. He is also expected to read the drawings, interpret them to the

workers; handle the workers grievances and motivate the workers. He has also to ensure that proper cutting tools, tooling/gauges are used, and proper methods/procedures are adopted. With the passage of time, a Mechanical Engg. Diploma holder is also expected to carry out the following activities:-

- Give suggestions for improvement in productivity and quality.
- Operate specialized/high tech machines.
- Ensure optimum use of consumables to control production cost.
- Monitor rejection/reworks, analyze reasons and take corrective action.

Quality Control/Quality Assurance : The conventional activities of a diploma holder in quality control section involve supervision of testing of various instruments/tools/equipment, supervision of testing of raw materials, calibrating various measuring instruments and gauges, and inspecting various components/products for quality. He should be proficient in writing inspection reports and test reports.

The rapid changes taking place in the industrial environment has led to changes in the various activities of diploma holders. They are expected to:

- Create quality consciousness amongst workers.
- Use QC tools for quality control and problem analysis.
- Operate sophisticated instruments.
- Assure quality of components, sub assemblies and products.

Maintenance : The various activities carried out by a diploma holder are supervision of erection, installation and trial run of machines; preparing maintenance schedules, supervision of repair and maintenance of machines/

equipment and checking the repaired equipment. He also prepares estimates for repair and maintenance of machines. With passage of time, the diploma holders are also expected to carry out following activities:-

- Undertake entry of data related to repair and maintenance.
- Suggest and supervise up gradation of machines/equipment.

Marketing : For diploma holders, the area of marketing has not been much explored. However, it has been found that marketing has attractive opportunities for diploma holders, especially as diploma holders have better knowledge of technical aspects of a product. The various activities, a diploma holder is expected to carry out are as follows:-

- Undertaking market research.
- Handling field complaints.
- Training dealers and customers.
- Undertaking sale of products through product demonstration.

Tool Room : the activities carried out by diploma holders in tool room have also undergone expansion. Besides carrying out design of tools/tooling, supervision of production of tools and tooling; executing their manufacturing plan, and testing performance, they are also supposed to:

- Develop tools, tooling and gauges using software.
- Operate various machine tools in the tool room.

Stores : The conventional job of a diploma holder in store section is to supervise receipt, storage and issue of material: supervise proper stacking and storage of material; control inventory and to supervise dispatch of finished goods. The changes in his activity profile include:

- Using software for store management
- Creating safety consciousness
- Ensuring cleanliness and safety through proper material handling

Research and Design : In R & D section, the changes in the activity profile of diploma holders include:-

- Drafting components/machine parts using software.
- Providing assistance in development and design of machine parts/components using software.

Industrial Engineering : The conventional activities of diploma holders in Industrial Engineering section include conducting time and motion study; assisting in designing performance standards and incentive scheme; estimating standard time for the processes involved to make a product; and preparing estimates for workforce, materials and machines. With broadening of responsibilities of diploma holder, he/she has also to carry out following activities:

- Assist in introduction of new management techniques.
- Carry out programming on CNC machines.
- Recommend and assist in automation of systems/sub-systems.
- Give suggestions for improved material flow of work-in-process.
- Give suggestions for bringing improvement in productivity and quality.
- Develop low cost automation devices.

Purchase : Diploma holders in Mechanical Engg. are equally competent to work in purchase section of an enterprise. The conventional activities include compiling material requirements, conducting survey to check material availability; keeping liaison

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with vendors, preparing supply schedules; floating tenders, and preparing purchase order. In recent times, there has been much more emphasis on following activities:

- Liasoning with other departments
- Liasoning with suppliers/vendors

Self Employment : As jobs in the public sector are on the decline, many of the diploma holders will be looking for avenues as an entrepreneur. Some of the important activities to set up and manage and industrial enterprise include:-

- Determining market demand for product/service.
- Arranging for capital requirements.
- Preparing specifications of the machinery needed in an industrial enterprise.
- Procuring job orders.
- Ensuring up-keep of machinery.
- Managing production and quality functions.

Curriculum Changes for Dealing with Changing Job Profile

The following changes are proposed in the curriculum of Diploma course in Mechanical Engineering to develop relevant competencies in the diploma holders so as to enable them carry out various activities in different functional areas efficiently.

- In the changed set up, a diploma holder is expected to be well conversant in using various IT tools for storing, retrieving, processing and presenting information. Therefore, subject areas such as "Fundamentals of IT" and "Computer Applications" should be an essential part of the curriculum. Diploma holders have to be proficient in using

software for drafting various parts/components, developing and manufacturing them. Therefore, it is essential that subjects such as "Computer Aided Drafting " and "CNC Machines" should be offered in the diploma level course.

- As many of the diploma holders will be looking for job avenues as an entrepreneur, relevant learning experiences in terms of facilities and support system available to an entrepreneur should be imparted to them in the diploma course. It is suggested that an Entrepreneur Awareness Camp for 2-3 days should be included in the curriculum in which entrepreneurs running their own enterprises and persons from financing agencies interact with students and share their experiences on practical difficulties and available facilities. Inclusion of subject on "Entrepreneurship Development" is also necessary to impart desired knowledge in this context.
- A diploma holder plays an important role in achieving objectives of an enterprise. He/she has to ensure optimum utilization of resources and achievement of maximum productivity and efficiency. For this, necessary knowledge should be imparted about ISO 9000, QC tools, TQM, Kaizan, Quality circles and other tools dealing with quality improvement and sustenance. Information should also be provided about techniques for measuring productivity, methods of improving productivity and eliminating waste.
- It is of utmost importance to broaden the horizons of knowledge of Mechanical Engineering diploma holders. They are expected not only to have in-depth

knowledge of Mechanical Engineering subjects but also have sufficient/working knowledge of other disciplines like Electrical Engineering, Electronics Engineering, Computer Engineering and Civil Engineering. A person having a broad knowledge in different disciplines will be better equipped to apply the knowledge for problem solving. Therefore, subjects such as "Electrical and Electronics Engineering" and 'Mechatronics' should constitute part of curriculum.

➤ Due to scarcity of employment opportunities for diploma holders, it will be appropriate to focus on development of generic skills amongst diploma students. Inputs have to be provided to develop communications skills, problem solving abilities, thinking skills, continued learning skills. It will go a long way in creating avenues of employment for diploma holders in various fields. The curriculum should have subject area on 'Communication Skills' with the objective of developing competencies amongst the students to communicate. For developing other generic skills, inputs have to be integrated in various subject areas in the form of assignments, group tasks, discussions seminars, presentations, brain

storming sessions, information gathering and through self-study. Project work has to be essential part of curriculum for strengthening problem solving abilities.

➤ Ingredients of continuous and repetitive practice should be put in the curriculum, to develop competencies to handle and operate high tech sophisticated machines. A lot of emphasis has to be given in developing the ability to develop part programmes for CNC machines.

Conclusions

The advent of advancements in technology especially computerization has changed the entire scenario on the shop floor in the industrial enterprises. Due to this, the job profile of Mechanical Engineering diploma holders has undergone a change. Nowadays, it is common to find diploma holders working as skilled workers on the shop floor or developing part programmes for CNC machines. At times, diploma holders are given the responsibility to effectively manage the resources. Keeping in mind the changes in their activities, diploma holders should be provided appropriate knowledge and skills that enable them to carry out various activities efficiently and come up to the expectations of world-of-work.

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Computer and Cyberspace Excitement and Addiction

N. RAJENDRAN and B. MADHAVAN

With the explosion of excitement about the internet, most people seem to be a bit too excited. Some people spend away too much time there. Is this yet **ANOTHER** type of addiction that has invaded the human psyche?

Psychologists are not even sure yet what to call this phenomenon. Some label it an "**Internet Addiction Disorder**". But many people are addicted to their computers long before the internet entered their lives. Some people are extremely attached to their computer and don't even care about the internet. Perhaps we should call the phenomenon a "**Computer Addiction**." Also, let's not forget the very powerful, but now seemingly mundane and almost accepted addiction that some people develop to video games. Video games are computers too... very single-minded computers, but computers nevertheless. Or how about telephones? People get addicted to those too. Like computers, telephones are a technologically enhanced form of communication and may fall into the category of "Computer Mediated Communication" (CMC) -as the researchers are dubbing internet activities. In the not too distant future, computer, telephone and video technology may very well merge into one, perhaps highly addictive, beast.

Perhaps, on a broad level, it makes sense to talk about a "Cyberspace Addiction" - an addiction to virtual realms of experience created through computer engineering. Within

this broad category, there may be subtypes with distinct differences. a teenager who plays "Need for Speed V" in internet may be a very different person than the middle-aged housewife who spends Rs. 500 a month in Yahoo Chat Rooms - who in turn may be very different from the businessman who can't tear himself away from his finance programs and continuous internet access to stock quotes. Some cyberspace addiction are game and competition oriented, some fulfill more social needs, some simply may be an extension of workalcoholism. Then again, these differences may be superficial.

Not many people are waving their fingers and fists in the air about video and work addictions. Not many newspaper articles are written about these topics either. They are passe issues. The fact that the media is turning so much attention to cyberspace and internet addiction may simply reflect the fact that this is a new and hot topic. It may also indicate some anxiety among people who really don't know what the internet is, even though everyone is talking about it. Ignorance tends to breed fear and the need to devalue.

Nevertheless, some people are definitely hurting themselves by their addiction to computers and cyberspace. When people lose their jobs, or flunk out of school, or are divorced by their spouses because they cannot resist devoting all of their time to virtual lands, they are pathologically addicted. These

extreme cases are clear, cut. But as in all addictions, the problem is where to draw the line between "normal" enthusiasm and "abnormal" preoccupation.

Addiction – Healthy or Unhealthy?

"Addictions" – defined very loosely – can be healthy, unhealthy, or a mixture of both. If you are fascinated by a hobby, feel devoted to it, would like to spend as much time as possible pursuing it – this could be an outlet for learning, creativity and self-expression. Even in some unhealthy addictions we can find these positive features embedded within the problem. But in true pathological addictions, the scale has tipped. The bad outweighs the good, resulting in serious disturbances in one's ability to function in the "real" world. Almost anything could be the target of a pathological addiction – drugs, eating, exercising, gambling, sex, spending, working etc.. You name it, someone out there is obsessed with it. Looking at it from a clinical perspective, these pathological addictions usually have their origin early in a person's life, where they can be traced to significant deprivations and conflicts. They may be an attempt to control depression and anxiety, and may reflect deep insecurities and feelings of inner emptiness.

Cyberspace Addiction Diagnosis – Possible?

As yet, there is no official psychological or psychiatric diagnosis of an "Internet" or "Computer Addiction". So far, researchers have only been able to define the constellation of symptoms that constitutes a computer or internet addiction. According to psychologist Kimberly S Young, he classifies people as Internet-dependent if they meet during the past year, four or more of the criteria listed below. Of course, she is focusing specially on internet

addiction, and not the broader category of computer addiction:

- Do you feel preoccupied with the internet or on-line services and think about it while offline?
- Do you feel a need to spend more and more time online to achieve satisfaction?
- Are you unable to control your online use?
- Do you feel restless or irritable when attempting to cut down or stop your online use?
- Do you go online to escape problems or relieve feeling such as helplessness, guilt, anxiety or depression?
- Do you lie to family members or friends to conceal how often and how long you stay online?
- Do you risk the loss of a significant relationship, job or educational or career opportunity because of your online use?
- Do you keep returning even after spending too much money on online fees?
- Do you go through withdrawal when off line, such as increased depression, moodiness or irritability?
- Do you stay on line longer than originally intended?
- If you were honest with yourself, do you feel there is another hidden need that drives this behaviour?

Below is one list from The World Headquarters of Netaholics Anonymous. although this is intended as a humour, note the striking similarity of some of the items to the serious diagnostic criteria. There is a kernel of truth even in a joke:

Top 10 Signs You're Addicted to the Net

Here are the most important symptoms that signal the extent to which One is addicted to the Internet. Some of the signs are conceptual, some practical and the remaining, well outrageous, but nevertheless very real.

- You wake up at 3 a.m. to go to the bathroom and stop and check your email on the way back to bed.
- You get a tattoo that reads "This body best viewed with Netscape Navigator 1.1 or higher".
- You name your child Eudora, Mozilla, Yahoo and Dotcom.
- You turn off your modem and get this awful empty feeling, like you just pulled the plug on a loved one.
- You spend half of the plane trip with your laptop on your lap... and your child in the overhead compartment.
- You decide to stay in college for an additional year or two, just for the free Internet access.
- You laugh at people with 2400-baud modems.
- You start using smileys in your snail mail.
- The last mate you picked up was a JPEG.
- Your hard drive crashes. You haven't logged in for two hours. You start to twitch. You pick up the phone and manually dial your ISP's access number. You try to hum to communicate with the modem. You Succeed.

Cyberspace Addiction – Impact on Life

At the height of the Industrial revolution where the factory system of manufacture reached its zenith, it was told that the revolution enriched man's body (economic &

financial well being) but impoverished his spirit (the inner self). Similarly, the information revolution has a necessary trade-off between the individual development and inter-personal relation, like

- Drastic lifestyle changes in order to spend more time on the net.
- General decrease in physical activity.
- A disregard for one's health as a result of Internet activity.
- Avoiding important life activities in order to spend time on the net.
- Sleep deprivation or a change in sleep patterns in order to spend time on the net.
- preference for online chat rather than face-to-face chat with friends.
- Depending on Internet as the primary and only source of knowledge / data.
- A decrease in socializing time with family.
- Refusing to spend any extended time off the net.
- a craving for more time at the computer.
- Neglecting job and personal obligations.
- Getting very possessive about the Home Computer, much worse – the office Computer.
- Getting disoriented and foxed when the Computer is down – getting unmanageably impatient till it is set right.
- Cyberspace Addiction – Solution:

"It' is problem when your face-to-face life becomes dissociated from your cyberlife. It's healthy when your face-to-face life is integrated with your cyberlife"

"Bringing in the real world" is an important principle for helping people who are

addictively stuck in cyberspace. And it's also a powerful tool for intervening with people who are addicted to misbehaving in cyberspace, such as snorts. How do you cure an acting out adolescent who is hiding behind cyberspace anonymity? Address him by his real name. Find out about his real world interest and talk to him about it. And if all else fails, contact his parents.

Healthy internet use means integrating the face-to-face and cyberspace world. You talk about your online life with your real world family and friends. You bring your real identity, interests and skills into your online

community. You call on the phone or meet in-person the people you know online. And it works the other way too: some of the people you knew primarily in the real world, you also contact through email or chat.

Conclusion:

It's a problem when one's in-person life becomes dissociated from one's cyberlife. The beauty is that it also applies to the mirror image scenario. Some people vilify the internet. They want nothing to do with it. That also is dissociation, a failure to integrate. That also is a problem.

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“E-Safety Information System for Industries”

M. ARULARASU and B.G. BARKI

Abstract

The present economy and liberalization policy of India is making more and more Indian and foreign investors to invest huge resources to make our nation a vibrant economy. This pleased situation may well be spoiled if adequate measures for safety in industries is not launched properly. At present none of the theories of accident causation are universally accepted. All such theories regardless of their origin are logically conceptual in nature and are of limited utility. More recently models for health and safety have emerged which are more user friendly. Safety professionals and others needing information in current quantitative safety assessment generally face a great deal of difficulty. This paper makes attempt of designing computerized safety information system to inculcate the knowledge of safety education and training in the minds of laborers workers and safety managers.

Introduction

Safety is an important concern of almost every organization, as a very large number of people are directly or indirectly concerned with safety in their day to day work environment, safety professionals and others needing information on current quantitative safety assessment generally face a great deal of difficulty because they have to study various specialized articles or related

documents. Hence collective information about the history of accidents and their preventive measures taken at various industries is a vital need within hour. If it is accessible to anybody, in any industry, accidents and losses could be prevented. Therefore we need a powerful safety information system to inculcate the knowledge of safety education and training in the minds of labourers, workers and safety managers.

To impart training and education on safety & safety measures, Internet technology and its security aspects are enough. The encryption technique is enough to prevent the unauthorized persons to access the safety information. Safety professionals spend a significant amount of time sorting through various files to retrieve use of data in some cases; they are required to post log of occupational injuries and illness by a certain date at a specified place in the plant. Some companies may require the collection of accident statistics to define those areas that are in need of attention, in the order of priority and the type and size of resources required in implementing corrective measures. Before such actions can be taken, the available data have to be transformed into information.

Safety Information System

A computerized safety information system [SIS] enables a safety manager and others to prepare reports to meet legal

obligations of the company and to initiate appropriate corrective measures.

The main features of SIS are

1. Store relevant accident and investigate data.
2. Process stored data.
3. Present final results in report format for assisting safety managers in assessing their safety performance and helping them in initiating necessary corrective actions.

Safety Information System permits a continuous updating of relevant data, display of this information and the capability of performing measurements and evaluations of safety performance for which a database is to be created combining all details and these databases can be hosted in a separate E-Safety server [Presently it is designed to host an Oracle SQL server to access anybody and any industry at any time. The present E-Safety information database is designed in Oracle]

The main aim of the Safety Information System to see data through many items, or combination of items, making it possible to generate reports that can identify the correlations that may exist between any variables and frequency of accidents. Such information may provide an insight into the causes of accidents. Safety Information System should provide not only the accident investigations, but investigations of near accidents too in addition to pre-accident investigations and post accident investigations. The pre-accident investigations can be the result of formal inspections that were randomly conducted by safety personnel. Further, special investigations may be generated upon the request of the worker or the safety supervisor.

Post-accident investigations are carried out to investigate an accident. One must note here that the recordable injuries are not the only source of post-accident investigations. Accidents that result in no injuries also provide important information regarding potential hazards.

In the Safety Information System database, univariable distribution, bivariate distribution, statistical calculation, incidence rates and statistical comparison can be incorporated to get all data listing whenever required. The Safety Information System stores information that can readily be assessed and retrieved. The information is displayed in the form of codes and a description the systems enables the user to observe accidents or investigations that have some similarities within a given span of time. This provides the user the opportunity of examining cases that have a common factor or factors among them and obtaining the relations between them.

Conclusion

The E-Safety system can be used to improve safety performance and it is designed to help safety professionals, measure and evaluate their safety performance and indicate areas of improvement. Even though every active step is taken to prevent accidents, still some accidents do occur. The reason is the human element-the human error is the main contributing factor for occurrence of an accident, the physical, psychological and sociological factors of a human being is playing a vital role in the accident proneness. So it is necessary to segregate the persons according to their attitude, ignorance on the job, over confidence, non-cooperation, negligence, fearness, hastiness, carelessness on the job and suitable training should be given for accident prevention.

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Text Mining and its Application in Education & Training

P. MALLIGA, T.G. SAMBANTHAN and T.V. GEETHA

Abstract

The information age is characterized by a rapid growth in the amount of information available in electronic media. Documents and web pages are a source of knowledge for users. Although, they are made available in presentable textual form, they are in an unstructured data format. Search engines are generally applied in finding out required information. But, they only exacerbate the problem by making more documents available in a matter of few key strokes. Text mining is a new method which solves this kind of information overload problem and also useful in discovering knowledge or finding meaningful information from unstructured text. This paper discusses the different tasks of Text mining and its importance to relevant application. A general frame work of Text mining is proposed. This main focus of this paper is to enlist the applications of Text mining in the Education and Training area, which encompasses different tasks of text mining.

1. Introduction

The emergence of the world-wide-web (www) has led to an exponential increase in the amount of document available electronically. The proliferation of documents available not only on the www, but also on corporate intranets, digital libraries, e-mails, news sources, technical reports, user manuals

etc., is overwhelming. While the amount of available data is ever increasing, the ability to absorb and process this textual data for any useful application remains an issue. A large portion of all available information exists in the form of unstructured textual data. Specialized techniques specifically operating on this textual data are necessary to extract useful information from such kind of collections of texts. These techniques are gathered under the name of Text Mining. Text mining has found its application in areas like bioinformatics, life sciences, business, finance and human resources. This paper makes an attempt to analyze and emphasize the need for text mining techniques along with its different tasks, which can be applied in the area of education and training.

2. Text Mining

Text Mining is also known as 'intelligent text analysis' or 'text data mining' or 'knowledge discovery in text' (Feldman 1995, Hearst 1997). Text Mining is "the nontrivial extraction of implicit, previously unknown and potentially useful information from any given textual data" (Fayyad 1996). Text mining is a challenging task as it involves dealing with textual data that are inherently unstructured and fuzzy especially while applying to education and training. The field is interdisciplinary, involving information retrieval, information extraction, database

technology, machine learning, natural language processing, statistics and data mining.

Text mining should not be confused with better known Internet search engine tools or database management capabilities. Analogous to data mining, which extracts useful information from any type of data of large volumes of free unstructured text. Once a traditional search for documents is completed, such as full text, abstracts, or indexed terms, text mining explores the complex relationship between documents. Hence it might be more suitable to education and training. This new technology allows knowledge workers to use the power of computers to perform analysis that were previously not possible. It aims at, to find all the knowledge that a user can infer from the relationships, explicit or implied from all of the information sources. In this paradigm, providing the user with relationships is the primary task of text mining. Text mining involves different tasks while performing on a specific application. Hence the nature of the tasks must be understood first, before applying to a specific application.

3. Different Tasks of Text Mining

Text Mining encompasses many areas that include Text categorization / classification, Clustering, Text Summarization, Conceptual navigation, Feature extraction, Text visualization, Ontology building and Topic Detection and Tracking. They are described with specific suitability of each one.

Text categorization can be defined as assigning category labels to new documents based on the knowledge gained in a certain categorization system. The categorization system is usually based on supervised learning or unsupervised learning or a methodology using concept hierarchy. This is more suitable to categorizing News articles, emails etc. *Clustering* is the process of grouping

documents based on similarity of words, or on concepts in documents as interpreted by an analytical engine. These engines use complex algorithms including Natural language Processing, Latent Semantic Analysis, Bayesian statistical analysis and so on. This is applied in Document classifications based on subject contents. *Feature extraction* deals with finding particular pieces of information that can be of any general form such as type description or business relationships. This is more suitable to patent analysis, business applications etc. The purpose of *text Summarization* is to describe the content of a document in a reduced form. Most text Summarization systems use morphological analysis of words to identify the most frequently used terms while eliminating words that carry little meaning. This is more suitable to personalized information services. In *Text Visualization*, the information extracted via mining is analyzed from various points of view. For instance, the data obtained from text may be word frequency, relative frequency, topicality, area dependence, time sequence and so on. The visualization tool also permits the viewing of the original document for checking mined results. This is more suitable to market analysis and opinion surveys. *Ontology learning or Ontology building* is an emerging field aimed at assisting a knowledge engineer in ontology construction with the help of text mining and machine learning techniques. This task is used in automated knowledge acquisition from huge data, which can assist knowledge engineers. *Conceptual navigation* is used to display key concepts and relationships between words and ideas. From these visual relationship displays, users can drill back to the specific document. In other words, text mining allows to discover key concepts within documents and groups of similar documents without having to read the

entire document or document collection. This may be applied in literature surveys and discoveries. *Topic Detection and Tracking* refers to automatic techniques for discovering, threading, and retrieving topically related material in streams of data, such as newswire and broadcast news. A typical text mining technique may include one or more of the above tasks.

To carry out different tasks, the text mining generally uses a limited amount of natural language processing techniques to extract structure and interpret meaning from unstructured textual data. It also uses techniques from data mining, machine learning, and information retrieval and knowledge management at different levels as required for different tasks of text mining. The general principles and functioning of a Text mining process must be understood.

4. A General Framework of Text Mining

A general framework of text mining consists of two phases viz., i) Text refining phase which transforms free-form text documents in to an intermediate form and ii) Knowledge distillation phase which deduces patterns of knowledge from the intermediate form. According to Ah-Hwee Tan (1999), Text mining may be equated with combining both. Thus Text mining = Text Refining + Knowledge Distillation. Both the phases are described below.

Text Refining:

Text Refining is aimed at obtaining the desired features of a particular task. Text preprocessing includes removal of case, punctuation, infrequent words and stop words (words like a, the, and, of, then and so on). Feature generation may include stemming (reduces words to their morphological root). For example the words "informing",

"informer", "informed", "information" would be stemmed to their common root "inform" and only the latter word is used as the feature instead of the former four. Next, it either extracts phrases or extracts metadata about the documents depending upon the application or suing named entities such as people's names, dates, e-mail addresses, location, organizations. Features are selected from the text using any one or more method(s) described above, which may form the Intermediate form. Intermediate form can be semi-structured (Rajman 1997), or structured like the relational data representation or templates (Grishman 1997). The general framework may be understood from figure 1.

Knowledge Distillation:

Knowledge Distillation deduces patterns and relationship across documents. It can be

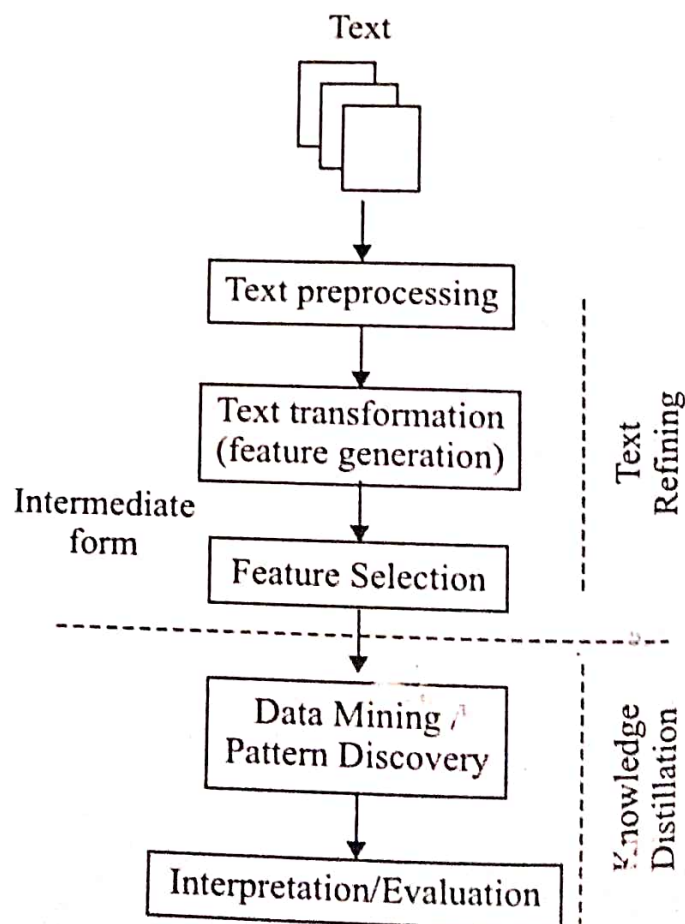


Fig. 1. A general framework of Text Mining

used for the purpose of organizing articles, based on their content, for visualization and navigation purposes. Document clustering/ visualization and categorization are examples of this form. Mining can also derive pattern and relationship across objects or concepts. Data mining techniques, such as predictive modeling and associative discovery are used for mining activities. Depending on the task required, knowledge distillation can be performed on intermediate form to derive at the required knowledge.

These techniques may be more suitable to Education and Training, because the content or any Educational material such as electronic or printed instructional materials, books, periodicals etc., have huge volume of textual data. The systematic approach in adapting this technique in Education and Training is elaborated below.

5. Applications of Text Mining in Education and Training

The usages of text mining techniques are explored in the area of education and training. They are listed below.

➤ Extract metadata of a document

Text mining can be used to extract metadata of a document. The metadata may include name of the authors, title, affiliation, journal, years of publication and references. This would contribute to the advancement and maintenance of any technical discipline.

➤ Classify documents based on content

Automating text categorization can be applied to assigning one or more category for a new document from a set of predefined categories. The categorized documents are more suited for efficient retrieval (Malliga et al 2003). Documents can be of any type namely abstracts, full papers, emails and

online manuals. Categorization can be applied in digital library and also in conferences to automatically categorize the papers based on themes.

➤ Individualized Learning

Online learning can be improved by applying web personalization and by providing learners with added value by knowing and serving them as individuals. Personalization can be based on various techniques from the area of text mining, which undertake to tune the learning experience to individual (for group) requirements based mainly on tracking the user browsing behaviour.

➤ Group work support

Group work support is another potentially interesting problem, where the goal is to associate people (students, teachers) of similar interests and achieve some synergetic effects in a specific application, e.g. education and edition works. Input to the system would be through a model or user interests and text that user wrote (reports, articles, newsgroups messages). The output may be recommended for groups of people with potentially of similar interests (Hejazi 2003).

➤ Curriculum Evaluation

Similarity between curricula can be found out by identifying similar phrases and related terms. Text Mining can be applied to find the level of the subject and then mapped onto the Bloom's Taxonomy. Mapping could be performed by analyzing the verbs used in the description of general and specific objectives of the curriculum.

➤ Question paper Generation & Evaluation

Question papers are to be designed according to the requirements of the objective of the curriculum. Accordingly a question paper setter designs required question paper.

The question paper thus satisfying the objective of the curriculum can be automatically generated using text mining techniques. This is possible with a database of questions accompanied with knowledge base (Sambanthan et al 2002). For each question in the database, the knowledge base contains the competency level and other related data such as unit content of a particular syllabus and marks allocated to them. In addition questions papers prepared by the experts can also be evaluated for the required competency level of the curriculum, using this knowledge base and natural language processing techniques. It is reported that this scientific method of generating question paper may be very difficult through manual methods (Sambanthan et al 2002).

➤ **Discovery from Literature**

Text mining can be applied in literature-based discovery, which includes examining the relationship between linked and overlapping literatures. Relationships or promising opportunities can be discovered which would not be easily understood when read manually. Successful performance of literature discoveries can lead to identification of promising new technology opportunities and research directions, such as extrapolation

of ideas in a discipline to a disparately related discipline.

➤ **Editorial Support**

Text mining can also be used as a support for editors in publishing conference proceedings, gathering and preparing the materials and accessing these materials for the users.

6. Concluding Remarks

Although it has been established that the applications of text mining is suitable to online publishing (Gobelink et al 2001), this paper explores more clearly that the text mining tools may well be extended to online learning, in particular to technical and vocational education. Out of several tasks of text mining explained in this paper, an integrated and hybrid of tasks may be adopted for the respective education application. An educationist is more specific to what he/she wants from huge databases for a particular application, which is different from a novice user who is not specific about what he/she wants but has only a general interest. Text mining hence is more efficient in catering to the formers' needs, which is better than the general search engines used by the latter.

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Teaching in Engineering Institutions

A.M. SARAVANAN, K. ANBALAGAN and KATHIR VISWALINGAM

Abstract

Technical Education is a measure of any developing country, as it has to play a more vital role to produce the good Engineers for the country. India also depends on good technical institutions. Engineering education has been expanding very rapidly in recent years in India. An approximate of 1200 Engineering institutions consisting of Government Universities, Deemed Universities, IIT's, NIT's, Government & Self-financing Engineering Colleges are there excluding polytechnic institutions. Nearly about 10 lakh students are joining in each and every year in the disciplines of Engineering & Technology. It is mandatory not only to have the infrastructural facilities but also to have the strong, trained dedicated faculty members to cater to the needs of the budding engineers. This paper deals with the roles of teachers in Engineering institutions pertaining to characteristics of a teacher, methods of technical teaching, curriculum development & co-curricular activities.

What is Meant by Teaching?

The term **teaching** gives the following meanings.

1. It is a transformation by informing.
2. It is a development of morale for life long learning.

3. It is a process to help pupils to become matrices.
4. To help pupils to become architects of an exciting & challenging future.
5. It is kind of communication, a meeting of minds and merging of ideas.
6. Teaching involves the dynamism and discipline of a good lawyer.

Who is a Teacher?

1. Horace Mann states that "The teacher who is attempting to teach without inspiring the pupil with a desire to learn is hammering on a cold iron".
2. Dr. S. Radhakrishnan defines, "A good teacher must know how to arouse the interest of the pupil in the field of study for which he is responsible; He must himself be a master in the field and be in touch with the latest developments on his subject; He must himself be a fellow traveller in the exciting pursuit of knowledge".
3. A teacher must know the feeling of the students, their beliefs, understandings, aspirations and values.
4. A teacher is a farmer with seedlings.
5. A teacher is a friend, Philosopher guide, who wins the students affection, faith and trust.
6. A teacher helps the students to mould their character & shape their career in

consonance with their aptitudes and aspirations.

7. A good teacher should find a way to release the flood of energy in the young men for the generous task of construction, creation and invention.
8. Academic life is a constant friendly wrestle between students and teachers and struggle has to be renewed and won.
9. A teacher is the master who has to communicate not only his/her knowledge, but also his/her vision, his/her enthusiasm, the ardor of his pursuit, the animation of his/her remembered past victory to the aspiring pupil.

Roles, Functions and Characteristics of a Good Teacher

Characteristics

Good teachers do not just happen/Born. They are the product of the highest personal motivation, encouraged and helped in their work by adequate salaries and the respect, support and good will of the society. It is one of the noblest professions. Therefore, those who are in charge of Teaching must be prepared of themselves for some sacrifice. A spirit of devotion is required for all the teachers. The tasks of the teacher is somewhat difficult and it is a painful, continuous process and a difficult work to be done by kindness and firmness by watching and warning by precept and by praise but above all by involvement.

The teacher plays a vital role for technical teaching in Engineering Education. Their role in this field is more significant. The teacher should have the potential in such a way to spread the technical knowledge, to give general information and to control over the student.

Roles and Functions

The following roles and functions of the teacher will make the teaching a successful one.

1. The teacher should have a good communication skill to express the technical points with respect to the subject.
2. The teacher should have the ability to exhibit patience, enthusiasm and sense of humour.
3. The teacher should spread the knowledge and encourage the students for innovative ideas and to feel happy.
4. If the teacher finds the morale of the students is low he/she should come forward to build up the students interest.
5. The teacher should motivate the students and develop amongst the students the intellectual abilities for problem solving and critical thinking, initiative and sense of responsibility.
6. The teacher should ensure that all the students in the class are taking equal interest and listening to the class with more involvement.
7. The teacher should also foster the students on the social and professional ethics.
8. The teacher should make available the resources of knowledge such as Books, Materials etc.
9. The teacher should conduct the tutorial classes effectively by making the students to recognize the practical importance of solving the problems or designing any reactor or models or research work.
10. The teacher should spare enough time for the success of the students by kindling the inquisitive spirit of their knowledge.

11. The teacher should do the counseling for the dull/weak students as well as should correct the irregular students.

Technical Teaching

A special kind of concept is needed for teachers especially in technical teaching. The efficiency of the teachers depends on the capability to convey the matter very effectively. As the engineering & technological subjects involve more laws, postulations, derivations, definitions, problems etc, the teachers of engineering colleges should teach the subject so as to make the students to understand or visualize or feel the concepts. The teachers should also teach the engineering culture, scientific tempo, leadership quality, professional ethics in addition to routine co-curricular activities.

The teaching is of three types namely Knowing, Feeling and Doing. Knowing is Cognitive (understanding, problem solving, deriving a formula application). Feeling is Affective (Values, Attitudes, Interests, Discipline) and Doing is Psychomotor (Practical Skill, Driving, Assembling and painting)

In technical teaching, the teacher should have strong and depth knowledge in the subject, so that it will enable them to talk boldly with courageness and also practical examples with respect to the subject topic.

The concept of technical teaching can be broadly divided into 5 parts as follows.

- Planning
- Personality
- Performance
- Perfection
- Post teaching/consolidation.

Planning

Planning plays a major role for effective teaching. A teacher should plan for a semester wise programme, which is also called a project brief. A planning can be divided into following groups.

- Project brief
- Unit plan
- Lesson plan
- Class plan
- Plan for co-curricular activities
- Plan for personality
- Plan for body language
- Plan for resource materials such as Books, etc.

Personality of a Teacher

The personality is more important for a teacher, especially in Engineering colleges. It can be divided into 3 groups

1. Outer personality
2. Inner personality
3. Image personality

The **Outer personality** includes dressing, artificial, beautification, speech, renunciation, habits, actions, look and style. The **Inner personality** includes movements, thoughts, tendency. The **Image personality** includes outstanding academic records, outstanding practical knowledge, outstanding knowledge and capacity, outstanding performance, culture (Academic & Engineering culture)

Performance in Teaching

The performance of teaching includes teaching, body language, behaviour of the teachers in & out of the class rooms, routine activities etc. The following are the key points of a good teaching performance.

Extempore speech: In extempore speech, language, style, slang modulations, pronunciation are very important.

Movements: In the class room 80% of the movements to be in the stage and other 20% can be off the stage for interacting with the students. Facing the student is must, and the teacher should not turn to board side and should not show his/her backside very often to the students.

Writing: In the board, the handwriting should be clear, and colour chalks can be used for diagrams. The teacher should give enough time for the students to copy the diagrams.

Dictation: The pronunciation should be clear while doing dictation. It is better to write the unfamiliar words in the Black Board. The teacher should not allow the students to dictate.

Tutorial: In the tutorial classes, students groups can be formed, each should not exceed 5 students. Problem can be given with a information on how to do it. Care should be taken to see whether the students are doing correctly. In the practical classes, it is the duty of a teacher to activate the students.

Command in the Class: The teacher should be confident & courageous in the topic to be discussed. The teachers should command the students and they have to correct the mistakes of the students in the class rooms.

Teaching aids: A teacher can use different teaching aids with respect to the need of the day. The various teaching aids are Chalk, marker, OHP. Record players, Tape recorders, television, players, teaching machines, computer terminals, print and image reproducers, electronic devices (Audio/video access and interaction devices), Cameras, photographs etc.

Priority/focus: At the end of the semester, more priority can be given with respect to examination point of view, The latest

development, concept laws, postulations and applications can be given more priority for a betterment.

Post Performance: Attendance can be taken at the end of the hour. After a mid-sem, the teacher should collect the feed back for their better performance. Home work, assignments should be given to the students with sufficient time in order to enable them to concentrate and write. Random checking of note book can be done.

Involvement: The teacher and students should feel like, they are the members of a family. The teacher makes the student to act and think.

The effectiveness of a teacher can be mainly determined by their communication skill. The responsibility of a teacher is to help, guide and assist the students for learning. In order to discharge this role effectively teachers may use appropriate instructional techniques, understand the learners needs, provide support and encouragement. In other words, teachers have function as facilitators.

Perfection

The teacher should plan their work perfectly for taking classes. The perfection in the class teachers is more important. The following are the points in the perfection.

- i. Be punctual to all the classes.
- ii. Finish the portions correctly.
- iii. Handle all the classes efficiently.
- iv. Give importance on examination aspects.
- v. Guru Tharman/teacher.

Guru tharman/teacher

- a) Teacher should not give major punishment.
- b) They should take care to correct the wrong things of the students.
- c) Teacher should be strict at the same time friendly.

- | | | |
|---------------------------------------------------------------------------------|---|--------------------------------------------|
| d) The teachers should be impartial among the students. | ➤ | Setting the scene – Arrival & arrangements |
| e) All the students should be encouraged in their activities. | ➤ | Covering the project |
| | ➤ | Posture |
| f) Teacher should not receive any bribe, complements or help from the students. | ➤ | Appearance |
| | ➤ | Mannerism – Be poised |
| | ➤ | Be courteous |
| | ➤ | Be sincere |
| | ➤ | Eye contact |
| | ➤ | Gesture |
| | ➤ | Voice |
| | ➤ | Vocabulary |
| | ➤ | Good Communication skill |

Post Teaching

In post teaching teacher should execute the following.

1. Weigh your efficiency by knowing the feed back from students.
2. Analyse the university results for further improvement.
3. Update the teaching plan with latest technical developments.
4. Conduct the unit test, mid-sem, model examination.
5. Conduct the seminars, guest lecture.
6. Arrange the Industrial visit, Group discussion, campus interview.
7. Improve the Communications skill of the students.

Planning the Lecture

The teacher should know how to plan a lecture for a given period say 60 min.

Introduction – 10 min

Body (presentation, discussion, examples, questions) – 40 min

Conclusion – 10 min.

In addition, there are few tips to give a best lecture.

Conclusions

The objective of education is to train the students, so that they can function effectively in a contemporary context. Hence the teachers play a major role in the production of intellectual & potential engineers. The technical teacher therefore has to provide a special attention not only in teaching, but also in communication skill, leadership qualities, practical knowledge & engineering ethics.

The model class lecture should communicate about what you've taught in the previous class, what your are teaching in this class & what you are going to teach in the next class. This is one of the best way of teaching. A teacher just only teaches. A good teacher teaches as well as interacts with the students. A best teacher interacts and makes the students eager to learn to understand the concept.

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A Study on Effectiveness of Training for Pharmacy Students

S.N. MANDAL and R. SRINIVASAN

1.0 Introduction

A 4 week Short Term Training Programme on Environment Pollution and its Monitoring was organized by NITTTR, Kolkata from 17 May to 11 June 2004 for the benefit of B. Pharm students.

Thirty Nine B. Pharm students from Sreemanta Institute of Pharmaceutical Science of Orissa participated in this course. The course was offered at the request of said Institute.

2.0 Objective

The study aimed at

- Assessing the effectiveness of the course
- Eliciting participants views on the adequacy of course content
- Prioritizing their opinions on the strengths of the programme.

3.0 Methodology

An opinionnaire "Training Effectiveness Proforma" was developed and administered to all the students who attended the 4 week residential course. The opinionnaire consisted ten items. The last item was an open ended item which specifically called for their suggestions to improve the course (copy enclosed).

All the 39 participants responded to the study and the summary of findings are as follows:

4.0 Findings

- a) Item 1: 36 of 39 (92%) of students felt that the course duration is not sufficient.
- b) Item 2: 37 students (95%) opined that all experiments have been covered.
- c) Item 3: 36 respondents (92%) said they did not face any problems in completing the experiments.
- d) Item 4: 38 (97%) of students reported that they are now confident of their knowledge in the subject.
- e) Item 5: 37 students (95%) opined that the facilities provided to them during the course are adequate.
- f) Item 6: 69% of them reported adequate time was given to them to complete the practical experiments.
- g) Item 7: All of them unanimously opined that the lecture inputs helped them to complete all the practical experiments.
- h) Item 8: 36 students (92%) are of the opinion that the course material/ laboratory manual supplied to them has enough coverage of the subject content.
- i) Item 9: This item elicited their rating of the course into 3 categories i.e. average, very good and excellent. 23 respondents (59%) feel the course coverage as very

good and the rest (41%) rated the course as excellent.

j) The open ended item invited suggestions to improve the course. A few salient remarks noted by the respondents are –

- The course duration may be increased.
- All medical and pharmacy students should attend this course to have a better exposure to Pharmaceutical Chemistry and Environment aspects of healthy living.
- The NITTTR Environmental Pollution Monitoring Laboratory is equipped well.
- The time given to complete practical experiment in Environmental Pollution Monitoring is short. More time may be allotted.

- It would be better if all the students do the practical individually to get more gain in the theory and practical (skill components).

The course feedback has strengthened the ability of faculty to offer similar courses to benefit Pharmaceutical and Medical Science students. The laboratory facilities have been rated as nice and congenial to contribute to offer excellent teaching arrangements.

The laboratory Manual in Environmental Engineering developed in the institute is being used in most of the Technical and Pharmacy Colleges in the Eastern region. The laboratory manual is also being improved with the facilities added in the laboratory at NITTTR, Kolkata.

A STUDY ON EFFECTIVENESS OF TRAINING FOR PHARMACY STUDENTS

Short Course
on
ENVIRONMENTAL POLLUTION AND ITS MONITORING

Venue: NITTTR, Kolkata
(17.05.2004 to 11.06.2004)

Training Effectiveness Proforma

- | | |
|------------------------------------------------------------------------------|--------|
| 1. Is the duration (4 weeks) sufficient? | Yes/No |
| 2. Whether all experiments has been covered? | Yes/No |
| 3. Did you face any problems in completing the experiments? | Yes/No |
| 4. Are you now confident of your exposure to the subject? | Yes/No |
| 5. Whether the facilities provided adequate? | Yes/No |
| 6. Whether enough time allotted to complete the practical? | Yes/No |
| 7. Whether the lecture inputs useful to complete the laboratory experiments? | Yes/No |
| 8. What are your views on the following: | Yes/No |
| a) All B. Pharm students should complete / undergo this course: | |
| b) Is the course materials / lab manual provided enough coverage? | |
| 9. How do you rate this course: Average / Very Good / Excellent. | Yes/No |
| 10. What are your suggestions to improve this coverage? | Yes/No |

Course:

Year of Study

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CALL FOR CONTRIBUTIONS

Contributors are invited to send their papers for publication in the next issue Vol. 22, No.1 / June 2005 before 15 May 2005.

This journal is priced as follows:

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Subscription for One Number	Rs.50/-	10 US \$
For Five Numbers	Rs.200/-	40 US \$
Month of Publication	Every June/December	

Subscription to be paid through Demand Draft favouring the Director, N.I.T.T.R., Taramani, payable at Chennai.

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