DEVELOPMENT OF SAFETY CULTURE IN THE CONSTRUCTION INDUSTRY: THE LEADERSHIP AND TRAINING ROLES

Mohd Saidin Misnan[1], Abdul Hakim b. Mohammed [2], Wan Yusoff Wan Mahmood[3], Syamsul Hendra Mahmud[4] & Mat Naim Abdullah[5]

[1, 3, 4] Department of Quantity Surveying, Faculty of Built Environment, Universiti Teknologi Malaysia, 81310 UTM Skudai, Johor, Malaysia
Email: b-saidin@utm.my, b-wysoff@utm.my, b-syamsul@utm.my
[2, 5] Department of Property Management, Faculty of Geoinformation Science and Engineering, Universiti Teknologi Malaysia, 81310 UTM Skudai, Johor, Malaysia
hakim@fksg.utm.my

Abstract: The construction industry is unique among industries. The activities of construction often take place outdoor under conditions not condusive for safety and health. Workers in the construction sites have to face constant change in the nature of work, the location of work and the mix of workers. The nature of most accidents at construction recurrent and serious shows that the construction industry is unique. As buildings become higher and larger, the possibility of accidents to occur also increases. However, it is not possible to control all the hazardous activities at a construction site. Factors involved in accidents include human behaviour, different construction sites, the difficulties of work, lack of safety culture, unsafe used of machinery and equipment, and noncompliance with various sets of procedures. Studies show that an accident and injury at the worksite is often the result of workers' behaviour and safety culture. Safety culture is more related to workers' safety practices. An efficient safety management system ought to be based on the safety awareness that should become a culture in the construction industry involving all the parties. The efficient safety culture should be shown to the public as a good value business. Leadership is an essential part of the process of management and it is also an integral part of the social structure and culture of the organization. In addition to providing key skills and knowledge, training can be used to motivate and to modify behavior and attitudes. This paper discusses the framework of the development of safety culture in the construction industry through leadership and training roles although known as one of the dangerous industry but will provide a safe working environment thus offering a safe and promising career. Safety culture is an alternative for encouraging competition at any level in order to reduce number of accidents, fatalities and injuries that involves workers and properties.

Keywords: construction industry, leadership, safety culture, training

INTRODUCTION

The construction industry is unique as construction activities are performed at outdoor under conditions not conducive for safety and health. Workers at the construction sites have to face constant changes in the nature of work, the location of work and work with new workers. Most of the people tend to relate construction industry to high risk working environment as compared to the others. The reputation of the construction industry relies on the expertise of implementation and managing safety, while meeting the consumer's requirements (Mills, 2001; Loosemore *et al*. 2003; Root, 2005; Goetsch, 2005). Although the construction industry has been attempting to find reasonable and efficient safety supervision system, the systems largely being used in preventive is not comprehensive and lacks preventive measures. The safety supervision system being adopted by new construction is inefficient. The

construction sites are constantly exposed to safety risk and that such risks are hard to manage by the supervisors alone. Therefore, it is necessary to prioritize these risk factors and manage them accordingly.

One of the measures that can be undertaken in order to develop a good or better image of construction industry is to provide safe working environment (Mohamad Khan *et al.* 2005). High rate of accidents occuring in the construction industry is causing losses both to the health and safety of workforce and millions of ringgit worth of properties every year in the country (Alves Dias and Coble, 1996; Singh *et al.* 1999). If this situation is not rectified, it will hinder the country's economic growth in becoming a developed country in the year 2020 (CIDB, 2000).

Safety culture and the culture of safety are frequently encountered terms referring to a commitment to safety that permeates all levels in an organization, from frontline personnel to executive management. More specifically, “safety culture” calls up a number of features identified in studies of high reliability organizations, with exemplary performance in respect to safety (Roberts, 1990).

METHODOLOGY

This paper is part of a PhD research and it presents literature review related to the safety culture, and findings from the preliminaries survey. This paper begins with the background of safety issues and safety culture in construction industry. Second part discusses the findings from the preliminaries survey and proposed framework of the developing of safety culture in the construction industry.

SAFETY CULTURE

Accident, Safety and Culture

Quality and safety are key issues in the present construction industry. ISO 9000 has been promoted in the construction industry to ensure the quality of construction work done by the contractors. Besides, a safe work environment is very necessary to erase the high risk image that is closely associated with the construction industry (Mohd Saidin *et al*. 2006a). Safe work environment may also be referred to as construction safety which is a standard of quality that is indicated in the contract and required by the client (Alves Dias and Coble, 1996). Often projects are becoming more complex, and safety has become the main focus in ensuring the safety of the construction personel and properties. Developed countries such as the UK and Australia have enforced safety rules in contractors’ works on site. Revolution and changes in safety system management have become a mandate in

practicing safety action that can be managed interminably (Low and Sua, 2000). The construction industry is labour intensive based on wet trades. This factor contributes to the low quality of work due to the workers' lack of expertise and training, while at the same time exposes them to accidents easily (Mohd Saidin and Abdul Hakim, 2007a).

Accident theory on human factors shows that there is a chain of events which are caused by human faults. In this theory, there are three general factors causing human faults, namely; overload, irrelevant response, and irrelevant activities. Refering to the Heinrich Theory, accidents are caused by main factors that can be predicted such as human faults, unsafe environment, or unsafe use of machineries (Goetsch, 1998). Accidents and injuries can be avoided by eliminating these factors. Changes needed to be undertaken by the construction industry by establishing the paradigm of safety and health culture which may improve the safety and health level in line with the requirements of safety and health in the construction industry (Mohd Saidin *et al*. 2006b).

Definition of Safety Culture

Culture involves learned and shared behaviours, norms, values, and material objects. It also encompasses what people create to express values, attitudes, and norms. Culture is largely undiscussed by the members who share it. Edward Hall, a key researcher into cultures, in Varner and Beamer (2005) stated:

> "Culture [is] those deep, common, unstated experiences which members of a given culture share, which they communicate without knowing, and which form the backdrop against which all other events are judged" .

This is known as 'social culture'. Similar to the social culture, each organization has its own culture dominated by its values and behaviour. This is known as 'organizational culture', of which safety culture is an instance.

According to Booth (1995), the term safety culture was introduced to the nuclear safety debate by the International Nuclear Safety Advisory Group of International Automatic Energy Agency (IAEA) in their analysis of the Chernobyl disaster. IAEA (1986) defined the safety culture of an organisation as the product of individual and group values, attitudes, competencies and patterns of behaviour that determined the commitment, and the style and proficiency of an organization's health and safety programmes. Overall safety culture can be described as a set of beliefs, norms attitudes and social technical practices that are concerned with minimising the

exposure of individuals, within and beyond an organisation, to conditions considered dangerous or injurious (Mohd Saidin and Abdul Hakim, 2007b).

Cooper (2000) considered safety culture as a sub-facet of organizational culture, which is thought to affect member's attitudes and behavior in relation to an organization's ongoing health and safety performance. He argued that defining the product of safety culture is very important to clarify what a safety culture should look like in an organization. He added that this also could help to determine the functional strategies required to developing this product, and it could provide an outcome measure to assess the degree to which organisations might or might not possess a 'good' safety culture. This outcome has been severely lacking in construction, hitherto.

Cox and Cox (1991) on the other hand defined safety culture as one which reflects the attitude, beliefs, perceptions, and values that employees share in relation to safety. A definition of safety culture adopted by many researchers is:

> "the product of individual and group values, attitudes, perceptions, competencies and patterns of behaviour that determine the commitment to, and the style and proficiency of an organisation's health and safety management characterised by communications founded on mutual trust, shared perceptions of the importance of safety and by confidence in the efficacy of preventative measures". (ACSNI, 1993).

PROBLEMS AND ISSUES IN SAFETY CULTURE

Certain guidelines concerning management in the constrution industry are needed to ensure that the safety culture in the industry would be improved. The guidelines should govern the safety management of plant, equipment and workforce. To prevent accidents in work-place, human attitude that is "reactive and bad attitudes, generally a norm, should be changed to positive and proactive culture" (Mohd Saidin *et al.* 2006b).

Two fairly distinct approaches to managing workplace safety have competed for attention and have generated a considerable amount of debate and controversy in the past decade. The first of these approaches, behavior-based safety, focuses on the identification and modification of critical safety behaviour, and emphasizes how such behaviors are linked to workplace injuries and losses. The second approach, in contrast, emphasizes the fundamental importance of the organization's safety culture and how it shapes and influences safety behaviors and safety program effectiveness. Adding to this mix, each movement has recruited its own persuasive proponents and vocal detractors. On the surface, at least, the two approaches appear to be indirect

opposition to each other and represent two entirely different world views of injury causation and safety management (Dejoy, 2005).

Cultural Influences

Businesses are embedded within given institutional and social setting thus making them susceptible to the influence of national culture. This influence is reflected in the general definition of safety culture offered by Waring (1992) as 'aspects of culture that affect safety'. The results of the study corroborate the evidence provided by other studies of the influence of national culture on health and safety. A comparative study conducted by Peckitt *et al.* (2002; 2004) on safety culture of the construction industry of Britain and the Caribbean illuminates the relationship between cultural values and construction site safety. Caribbean site workers viewed values of freedom, love and social interactions as having impact on site safety, whereas, British workers rated these values as having a lower impact. The relationship between workplace health and safety and cultural values is supported by data of the current study. Owner/managers perceptions and attitudes to health and safety are bound together with the extended family system and a collectivist view of life characterized by upholding and providing
for the social needs including health and safety of workers.

The Influence of Culture on Organizational Practices

Given the importance of the external environment of businesses in developing countries, research into health and safety should not only focus more on it alone, but also the workplace. There is a link between culture and the external environment. Culture is the interactive aggregate of common characteristics that influence a human group's response to its environment (Hofstede, 2001). Studies conducted by sociologists such as Hofstede (1980) and Schein (1985) show that organizations are culture bound. This supports the view that the cultural environment is an important aspect which cannot be overlooked when developing ways to improve workplace practices including health and safety.

Safety and Organizational Culture

Culture is defined as those practices common to a group of people. In this context, safety can be expressed in simple direct terms as behavior affected by culture. Note that this topic encompasses both management behavior (action or inaction) and employee behavior (Eckhardt, 1996). Culture is further defined as

missions interacting with work processes and corporate values to generate behavior (McSween, 2003).

Organizational or corporate culture as defined by Handy (1993) is the 'pervasive way of life or set of norms and values that evolve in an organization over a period of time'. Norms are unwritten but accepted rules which tell people in organizations how they are expected to behave. They may be concerned with such things as how managers deal with their staff (management style), how people work together, how hard people should work or the extent to which relationships should be formal or informal. Values are beliefs on how people should behave with regard to such matters as care and consideration for colleagues, customer service, the achievement of high performance and quality, and innovation.

There are also some debates, initiated by Hofstede (1980), and revived by Reason (1998), about the ownership of culture. Some theorists argue that the organization has culture, whereas others argue that the organization is culture. Like organizational culture, safety culture is assumed to be a relatively stable construct, similar to personality, and resilient to change in the face of immediate and transient issues. Safety culture is often seen as a subset of organizational culture, where the beliefs and values refer specifically to matters of health and safety (Clarke, 1999).

It should be noted that the proposed definition of safety culture is stated in neutral terms. As such, the definition implies that organizational culture exists on a continuum and that organizations can have either a good or poor safety culture. However, not all definitions in the literature make this assumption. Some suggest that safety culture is either present or absent within an organization. Nevertheless, it is clear from the initial introduction of the term within various operational environments that safety culture is assumed to be a component of an organization that can be improved rather than simply instilled (IAEA, 1986; Cox and Flin, 1998). Obviously, such a distinction is important when it comes to both measuring and changing safety cultures within organizations. More specifically, safety culture is seen as a subfacet of organizational culture and exists at a higher level of abstraction than safety climate. It seems plausible that safety culture and safety climate are not reflective of a unitary concept, rather, they are complementary independent concepts (Cooper, 2000).

Cultural Change

Mohd Saidin and Abdul Hakim (2007b) state that organizational culture conveys a sense of identity and unity of purpose to the members of an organization, facilitates the generation of commitment and helps shape behaviour by providing guidance on what is expected. This can work against an organization. Cultural change

aims to change the existing values of the organizational system of the values (what is regarded as important in organizational and individual behaviour) and accepted ways of behaviour (norms) which strongly influence 'the way things are done around the organisation'. (Mohd Saidin and Abdul Hakim, 2007a).

It can work against an organization by encouraging unproductive behaviour. Strong cultures may be formed over a considerable period of time and have more widely shared and more deeply held beliefs. But, strong cultures are only appropriate if they promote desirable behaviour. If they do not, they are inappropriate and must be changed (Armstrong and Stephens, 2005).

A CONCEPTUAL FRAMEWORK OF THE SAFETY CULTURE

Glendon and McKenna (1995) stated that effective safety management is both functional (involving management control, monitoring, executive and communication subsystems) and human (involving leadership, political and has safety culture sub-systems paramount to safety culture). This is so, because the concept of safety culture has emerged from the earlier ideas of organisational climate, organisational culture and safety climate. They described safety culture as the embodiment of a set of principles, which loosely defines what organisation is like in terms of health and safety.

Safety is looked into from the cultural point of view as shared characteristics of a group dynamic relating to a system (e.g. group, community, race, nation, religion) which include beliefs, values, attitudes, opinions and motivations. Glendon and McKenna (1995) pointed out that organisations with good safety cultures have employees with positive patterns of attitudes towards safety practice. These organisations have mechanisms in place to gather safety-related information, measure safety performance and bring people together to learn how to work more safely. Ostrom *et al.* (1993) looked at the employees' perceptions of safety culture as follows:

- management attitudes towards safety;
- perceived level of risk;
- effects of work pace;
- management actions towards safety;
- status of safety adviser and safety committee;
- importance of health and safety training; and
- social status of safety and promotion.

Creating a culture of safety means that the employees are constantly aware of hazards in the workplace, including the ones that they create themselves. It becomes second nature to the employees to take steps to improve safety. The responsibility is

on everyone, not just the management. However, this is a long process to get to that point (Dilley and Kleiner, 1996).

Safety and health culture within a company is closely linked to the workforce's attitudes in respect to safety. They share the company's risk, accidents and incidents. The role of management and the involvement of all employees as important key players in safety and health culture are important to cultivate the positive beliefs, practices, norms and attitudes among all in the company. Glendon and McKenna (1995) also identified four critical indicators of safety culture. They are:

i. Effective communication, which leads to commonly understood goals and means to achieve them at all levels.
ii. Good organizational learning, whereby organizations are able to identify and respond appropriately to changes.
iii. Organizational focus upon health and safety, that is, how much time and attention is essentially paid to health and safety.
iv. External factors, including the financial health of the organization, the prevailing economic climate and impact of regulation and how well these are managed.

The theoretical and empirical development of safety culture and climate has followed the pattern set by organizational culture and climate, although to a lesser extent. As stated previously, most efforts have focused on the empirical issues surrounding safety climate although it is possible to identify theoretical development of concepts within the safety culture literature. Also, the terms safety culture and safety climate have been used interchangeably in the literature (Cox and Flin, 1998). Cox and Cox (1996) also demonstrated this point by likening culture to personality, and climate to mood. Conducting a survey will assess the current mood state of an individual. Some responses may be indicative of the individual's stable underlying beliefs, constructs and personality but overall, the survey will reflect how the individual feels at that point in time. The comparison between culture and personality seems attractive because personality is relatively stable over time whereas climate and mood can be susceptible to short-term fluctuations (Pervin, 2003).

In relation to occupational safety, the workers must be able to automatically correct a hazardous act or eliminate a hazardous condition. In terms of occupational health, they ought to automatically undertake measures to ensure protection from health hazards at the workplace using personal protective equipment without having to be told repeatedly to do so (Mohd Saidin and Abdul Hakim, 2007a).

Concept of Safety Culture in Construction Industry

For a long time, the construction industry has been labelled with poor occupational safety and health culture. Efforts to improve occupational safety and health performance will not be effective until the occupational safety and health culture is improved (Mohd Saidin and Abdul Hakim, 2007b). As a result, there is a need for a major paradigm shift regarding attitudes on occupational safety and health in construction sites. Widening the understanding of behaviour increases insights into possible targets for improvements, for example better planning, more effective job design, or more comfortable personal protection. The influence human behaviour on safety performance is enermous. Therefore, this root problem must be solved effectively. The elements that influence the development of safety culture are (Mohd Saidin and Abdul Hakim, 2007d; Mohd Saidin *et al*., 2008):

i. Leadership - Improved safety culture can be achieved through close cooperations between leaders and the workers;
ii. Involvement - An important indicator to a positive safety culture in an organization is the involvement of the leaders and the workers in safety management.
iii. Recognition systems and acknowledgement - The recognition received would only be effective if it is meaningful and given as an acknowledgement to the work produced.;
iv. Training - Training has always been a high priority, and the effectiveness of safety training has been proven to increase knowledge and awareness of workers on safe working culture;
v. Communication - Communication involves all aspects of work in an organization and is able to connect all entities at all levels on safety aspects;
vi. Teamwork - Team members are involved in conveying their opinions on works that they do and strategies to solve problems;
vii. Motivation - Leaders that consider the ideas of the workers and sensitive to their needs will be able to elevate the motivation level of the workers to produce work of better quality;
viii. Safety and Healty Committee - Functions to improve certain aspect of the work environment and develop safety values in everyday work practice, and establishing safety as the main goal to be achieved by the committee;
ix. Workers' behaviour - To understand the implications of social culture on safety culture in order to help develop safty as a culture in the organization;
x. Work environment - The work environment should conform to the standard of safety and health at all times;

xi. Policy and safety planning - Policy pertains to the principle that supports behaviour towards safety, as in making safety policies as a marketing advantage for the organization.

FACTORS INFLUENCING THE DEVELOPMENT OF SAFETY CULTURE: SURVEY FROM G7 CONSTRUCTION FIRMS

An interview was carried out, focussing on the 11 factors that had been identified as the influential factors of the development of safety culture. The factors are: leadership, involvement, recognition systems and acknowledgement, training, communication, teamwork, motivation, health and safety committee, workers' behaviour, policy and safety planning, and work environment. The respondents involved 287 G7 class construction firms in the Klang Valley and 15 professional safety and health expert, with the aim to acquire information on the best activities for the 11 influential factors of the development of safety culture and the level of implementation of safety culture development in construction firms. The findings of the interview are as presented in Table 2.

Table 1: Background of the Respondents of the G7 Class Construction Firms

Nos.	Respondence	Frequencies	Percentage
1.	General Manager	7	2.4
2.	Managing Director	28	9.8
3.	Safety and Health Manager	80	27.9
4.	Safety and Health Officer	105	36.6
5.	Project Engineer	13	4.5
6.	Project Manager	39	13.6
7.	Construction Manager	14	4.9
8.	Facilities Manager	1	0.3
Total		287	100

Based on the findings in Table 2, it can be concluded that construction firms and safety experts recognise leadership as the main influential factor in the development of safety culture, followed by training and education. This shows that both respondents are in agreement that leadership and training and education are of great influence to the development of safety culture in construction firms. With the findings of the interview used as the point of reference, the following discussions shall focus on leadership and training and education as the main influential factors in

the development of safety culture in the construction industry. The delineation of leadership framework and training in human resource development shall be based on the 2 main factors.

Table 2: Findings on the factors involved in the development of safety culture.

Nos.	Factors	Grade G7 Construction Firms		Safety and Health Expert	
		Importance Index	Rank	Importance Index	Rank
1	Leadership	0.8946	1	0.9808	1
2	Involvement	0.6548	3	0.6346	5
3	Recognition system and acknowledgement	0.3879	11	0.3077	10
4	Training	0.6665	2	0.7885	2
5	Communcation	0.5500	5	0.4423	6
6	Motivation	0.3937	9	0.4038	9
7	Teamwork	0.4603	7	0.4231	8
8	Health and safety committee	0.5346	6	0.7692	3
9	Workers' behaviour	0.3922	10	0.4423	7
10	Policy and safety planning	0.5641	4	0.6923	4
11	Work environment	0.4361	8	0.0962	11

FRAMEWORK OF SAFETY CULTURE DEVELOPMENT THROUGH LEADERSHIP AND TRAINING ROLES

Today, the changes in safety management have opened a new outlook to war safety. It is no longer being treated as secondary in the business context rather it is treated as a culture. More emphasis is being put on ensuring everyone understands the importance of safety. However, changing the attitudes and behaviour is the hard task. Safety is not only the manager's responsibility but is obligated to everyone.

The legislation has changed over the years with more emphasis on safety at work. Still, today the rules and regulations are being improved to make the working environment safe. Apart from the effect of laws, many safety activism factors also influence the decision of modern managers pertaining to health and safety such as the active role of the trade unions, consumerism and the legal battle by accident/incident victims. All these factors are forcing managers to change their attitudes towards safety. It is clear that the safety of working environment is escalating towards improvement. Managers are now adopting proactive approaches towards safety.

Figure 1 shows the framework of safety culture development. The development of safety culture as depicted in the framework views that both individual and groups are responsible for developing the total value of safety culture which in turn supports the organisational culture. Everyone must play a part in the organisational culture to ensure correct understanding of the importance of safety and changing the attitude and behaviour through the instrinsic and extrinsic element of the culture. Organisational culture will be transmitted to all organisation activities which involve intrinsic and extrinsic elements of the organisation. This will in turn be transmitted to every member in the organisation. All instrinsic and extrinsic elements of culture will affect the organisation culture throughout the development of safety culture. Consequently, it makes the concept of safety culture more acceptable to wider attention. It does not mean that the safety system, nowadays, is not relevant for practices, but this system will function well when the organization has developed safety culture. The reason could be seen from different perspective but the barriers in implementing the safety system he organization develops a strong safety culture.

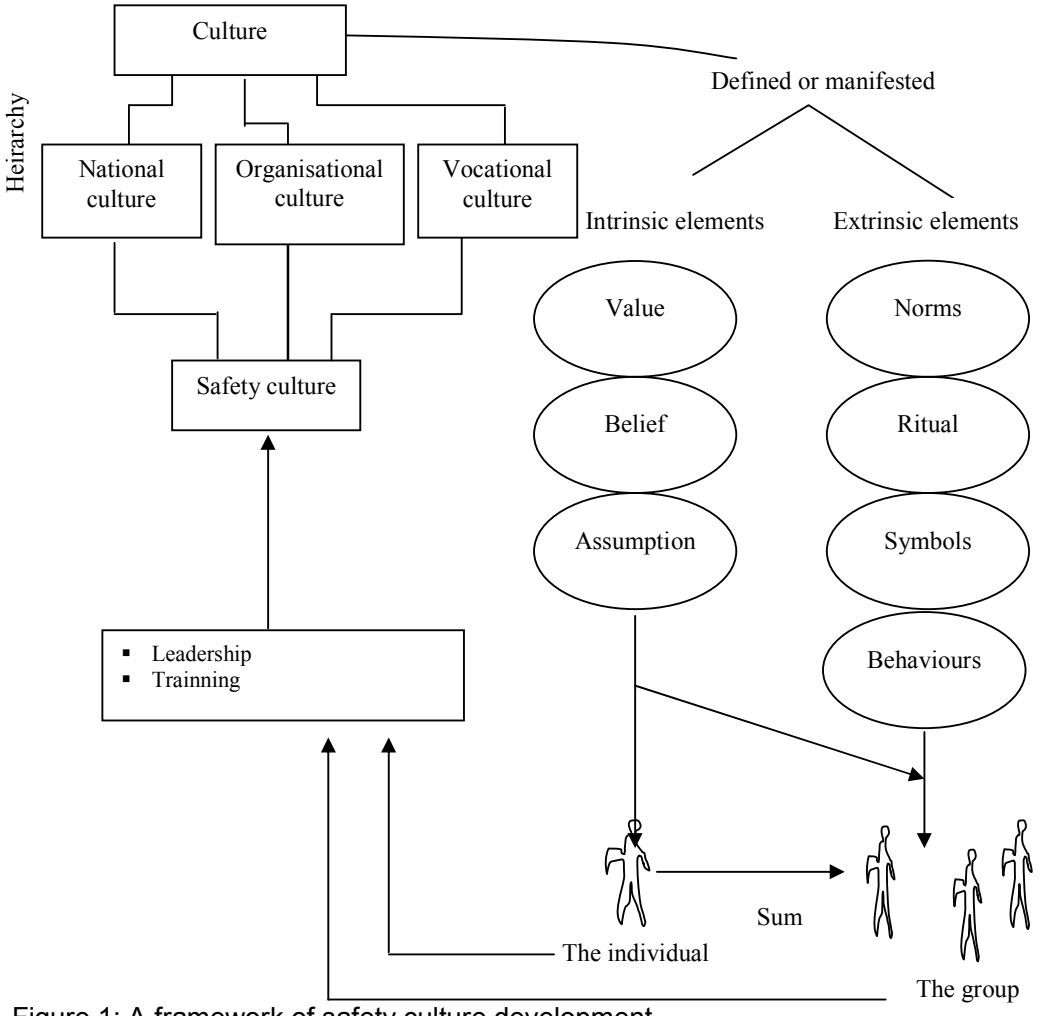

Figure 1: A framework of safety culture development

The safety and health legislations have changed over the years with more emphasis on safety at work. The rules and regulations were improved to make the working environment safe. Besides, the effect of laws, many factors related to safety activism also influence the decision of modern managers regarding health and safety such as the active role of the trade unions, consumerism and the legal battle by accident/incident victims. All these factors are forcing managers to change their attitudes towards safety.

Effective safety management is both functional (involving management control, monitoring, executive and communication subsystems) and human (involving leadership, political and safety culture sub-systems paramount to safety culture). The concept of safety culture emerged from earlier ideas of organisational climate, organisational culture and safety climate. They described safety culture as the embodiment of a set of principles, which loosely defines what organisation is like in terms of health and safety. It is sufficient here to say that people have beliefs about their leaders, and their leaders' strengths and weaknesses can influence their work culture. Furthermore, they will have values and beliefs about what constitutes good leadership.

Leadership is an essential part of the process of management and it is also an integral part of the social structure and culture of the organization. If the manager is to be successful in dealing with people and influencing their behaviour and actions, it requires a leadership style which helps to foster a supportive organizational culture - a type of leadership that goes beyond profitability. For example, to what extent is emphasis placed on long-term survival or growth and development? How much attention is given to avoiding risk and uncertainties? Or how much concern is shown for broader social responsibilities? The organization must give attention to all key areas of its operation. The combination of objectives and resultant strategies will influence culture, and may itself be influenced by culture.

Efforts to implement changes in any culture may be opposed with strong resistance. The same applies in any organization. This change may be perceived as a threat by many within the organization, resulting in resistance to proposed changes. A holistic approach that is required to change safety culture, involving: sustained management commitment; sound safety policy; visible management support; allocation of sufficient resources; use of appropriate safety management techniques; continuous motivation of all staff; safety training provision; fostering a ‘no blame culture’; organisational learning; and persistence of purposes.

Safety is everyone's responsibility. However, at the construction job site, the frontline manager is responsible for ensuring that the company's safety programme is set in motion. Unless line supervisors take an active interest in safety, workers will be injured or possibly killed during the performance of their work. This may be hard to believe, but the frontline manager is the key to the success of a company's job-site safety programme. Take it seriously, and give safety the consideration it deserves.

Efforts in encouraging safety practices should come from the management who should conduct safety promotion, accreditation of status, reward system, distribution of safety information and communication. Commitment from the management can be seen from the continuity of consistency in safety management practices and encouragement of safety proposals from all parties in the organization. Commitment from the management in safety and health can appear from financial budget, scheduling, practices, relationship with others and construction quality and that can be part of the successful organization.

An organization's upper-level management has long been recognized as playing a critical role in promoting organizational safety culture. Organizational commitment to safety refers to the extent to which upper-level management identifies safety as a core value or guiding principle of the organization. An organization's commitment to safety is therefore reflected in the ability of its upper-level management to demonstrate an enduring, positive attitude toward safety, even in times of fiscal austerity, and to actively promote safety in a consistent manner across all levels within the organization. When upper-level management is committed to safety, it provides adequate resources and consistently supports the development and implementation of safety activities. An organization's commitment to safety is therefore ultimately reflected by the efforts put forth to ensure that every aspect of its operations, such as equipment, procedures, selection, training, and work schedules, are routinely evaluated and, if necessary, modified to improve safety. Safety culture is a culture based on the premise in which safety is the priority, the way of life. All activities and processes are accomplished with safety in mind.

If concentrating on physical conditions produces only limited benefits and there are no "essential elements" of a safety programme, what does work? Working toward the concept that achieving results in safety is a management function. For their part, managers must think that they have to do things within their line management structure on a regular basis to develop the culture which produces safe behaviours. It is often heard that we need the support and commitment of management in order to have optimal safety performance. As true as that may be, high safety performance also requires the commitment and support from others, including the safety

professionals themselves. A surprising, unwelcome and occasional response from clients and employees has been the perceived lack of caring on the part of some safety professionals.

Leadership (within a strategic framework) seeks to lay the foundation for the transformation of the construction organization, particularly in relation to the creation of a safety culture for continuous safety improvement. It also seeks to create conditions where the workforce will be empowered to the extent that workers at all levels of the organization will find it their mission to improve the culture of safety.

New employee orientation

One thing that we often forget is new employee orientation. It is critical to get new employees off on the right path. No matter the type of position, an orientation must be conducted. There is one thing for sure, benefits will be discussed with all new employees-why not safety? The following is a list of those who are often overlooked:

i. Training of contractor and/or temporary employees
ii. Training employees who work in high hazard and/or special hazard areas
iii. Training in the use and maintenance of personal protective equipment
iv. Attitudes and perceptions of managers, supervisors, and employees toward safety and health

New employees need to be trained to perform their jobs safely, to recognize, understand, and avoid potential hazards to themselves and others. If new employees are likely to be exposed to hazardous substances, they must be trained before they begin to work. Safety manager are responsible for ensuring that both new and experienced employees received the training they need to do their job safely. This involved the following types of responsibilities: arranging and scheduling training for new employees; arranging and scheduling retraining for experienced employees in need of updating; arranging training for employees whose jobs have changed in some way; identified and assigning instructors to conduct training; monitoring and evaluating training that provided; documanting training; and ensuring that supervisors receive the training they need in order to play their critical role in maintining a safe and healthy work environment.

In addition, contractors (temporary employees, subcontractor employees, visitors, etc.) may need specific training to recognize workplace hazards. One often-forgotten individual is the experienced employee who will need training if the installation of new equipment creates changes to the job, or if process changes create

new hazards or increase existing hazards. All employees may need refresher training to keep them prepared for emergencies and alert to ongoing housekeeping problems.

On-the-job training

On-the-job training (OJT) is still the most widely used training method but it tends to be hit or miss, unless the trainer is carefully chosen and the program is well planned. If the manager is not going to train the worker, then someone else must be selected to do the training. The person selected must be a skilled and knowledgeable individual who is familiar with the safety rules and procedures. Before assigning the training task to someone, the manager must be sure the person is willing to provide the training. In addition, this person must be able to communicate the information to the trainee. If used properly, OJT can be an effective way of training new workers.

Safety and health training must start the first day on the job. An orientation should be held at each level of the organization, with each orientation reinforcing the previous one and becoming more specific in terms of potential hazards and safety requirements as the employee gets "closer" to his or her workplace. In addition to learning key safety rights and responsibilities by repetition, a safety orientation at each level conveys the message early that "These people are serious about safety and really do care about my well being!".

Safety and health training for a new employee includes the four Rs: responsibilities, rights, rules, and regulations:

i. Teaching a new employee his or her responsibilities under the OSHAct.
ii. Teaching a new employee his or her rights under the OSHAct.
iii. Teaching a new employee the general and departmental safety and health rules of the company.
iv. Teaching a new employee starting a job new to him or her about the applicable OSHAct safety and health regulations (standards).

CONCLUSION

In summary, there appears to be a considerable evidence suggesting that organizational and contextual factors are important in achieving workplace safety. However, current definitions of safety culture remain rather vague and variable, and current knowledge does not permit precise statements as to which factors are most important in a given organization or situation. Also, systematic studies evaluating field-based interventions specifically targeted to safety culture change are conspicuous in their absence. But this is perhaps not that surprising given current conceptual and measurement limitations. It is also worth noting that intervening into the culture of an

organization is difficult under the best of circumstances, because it requires that the organization be willing to look at itself and make fundamental changes in the way it pursues its core activities. These limitations, withstanding not, the importance and usefulness of organizational culture as they pertain to workplace safety appears to be broadly accepted by researchers and practitioners alike.

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