

Application of a Proactive Workplace Risk Management Strategy

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Abstract

Workplace risk management encompasses Safety, Health, Environment, Risk and Quality (SHERQ) management. SHERQ management in a workplace is not only about fitting signboards, but also about actuating antecedents and managing consequences. Thus, behavior is a critical variable in a risk management equation that requires monitoring and management. Therefore, getting people motivated to change their behavior is crucial. Behavioral change should support all business processes and must not replace any of the processes. It is generally accepted that activators for incidental business risk emanate (+/-90% of the time) from behavioral attributes. Then environment and conditions account for +/- 8% and other attributes account for +/-2%. Therefore, actuating peer approval through behavior stimulation is a methodology for behavior modification intervention. This research paper reports on a method applied to improve risk rating through a peer review approach to safety management in a workplace. A qualitative research approach is adopted to explore and explain how the risk rating in a workplace can be improved, through a peer review behavior stimulation intervention. The resultant of the research is a framework for sustaining a high-risk rating in a workplace.

Keywords

SHERQ, Workplace, Risk; Monitoring; Modification.

1. Introduction

South Africa suffered a number of occupational injuries, fatalities, and trauma in the mining, building construction and other sectors of the industry (please reference). The phenomenon was accelerated by the scrapping of the previous restriction due to free enterprise and trade to all South African citizens or the chaos caused by the integration of the elements of what is known as the SHERQ management system. The resultant effect observed was an increase in workplace accidents, so much that worker's representatives (unions) and the government intervened. Safety is the freedom from unacceptable consequences, safety management is the process to realise certain safety functions and the objective is to protect human beings and the environment, equipment, and property from unacceptable risk (Li and Guldenmund 2018). Managing safety is a comprehensive effort that needs an organisation to determine safety requirements, design a safety requirement structure and process and decide what need to be implemented in order to achieve predefined safety requirements (Li and Guldenmund 2018). The corporate sector is facing a challenge to ensure that its operations are fully compliant with safety regulations, as this is a requirement by the law. There are many interest groups and organisations, including the government that intervened due to increasing rate of fatalities. Aviation, Mining, Construction, Railways and Road Traffic Management have the highest number of fatalities. These incidences takes place in all sectors, with manufacturing being the lowest (Taylor 2014). Notwithstanding the fact that

more minor injuries, fatalities, and chronic diseases are caused by manufacturing process's lack of compliance to safety (Taylor 2014). The workmen compensation act which indicates that management would pay for injuries occurring on the job, regardless of who is at fault, gradually became the issue of interest and concern to the employers (Li and Guldenmund 2018). After the 1990's, Safety Management System (SMS) became more sophisticated and multidisciplinary by making use of increasing number of new techniques, audit tools and standards (Li and Guldenmund 2018). The impact of technology became visible, and a driving force needed to achieve the desired SHERQ goal and objective.

There is a visible improvement in safety within the workplace in most industries, although risk ratings still indicate a dire and disparately inadequate improvement levels. It is thus needless to indicate that a new frontier is has to be confronted in order to address and maybe find a panacea, if possible, to current safety and risk environment. This new frontier is engaging the reciprocal determinism of employees in a workplace. It is the mechanism that will facilitate the management of intangible assets in the workplace that is, a behaviour intervention that facilitates the achievement and sustainability of SHERQ goal and objectives in a workplace. The process of engaging reciprocal determinism in a workplace is characteristic of the process of appealing to catalysts of behaviour, these are individual characteristics, individual motivation and individual perception and benefits (Gibson et al 1996). It is therefore apparent that the process of changing behaviour of individuals in a workplace, involves two specific areas, i.e. the internal conviction, which is a self-enforcement personal attribute that is activated by motivation and a consequential conviction, which is a group dynamics attribute that is activated by inspiration. Workplace behavioural change is planned organizational change, planned organizational change of large scale, affecting entire workplace environment is not an everyday occurrence. Revolutionary change, i.e. a major overhaul of the organisational culture, resulting in modified behaviour is evolutionary.

Thus, this type of change requires organisations to enthuse a continuous learning environment. This level of proficiency can only be achieved by learning organisations. Change is inevitable in the workplace and in a societal context; change is more the norm than the exception. Similar to the process of reciprocal determinism that has catalysts of behaviour, organisational change has triggers, which are distinguished between internal and external triggers for change. Internal triggers include people, administrative structures, etc, and external triggers include technology, social factors, politics, etc. Thus, authors (Li and Guldenmund 2018) further argue that managing safety is a comprehensive effort that needs an organisation to determine safety requirements, design a safety requirement structure and process and decide what need to be implemented in order to achieve predefined safety requirements.

1.1 Objectives

The objective of this research paper is to report on a method applied to improve risk rating through a peer review approach to safety management in a workplace. A qualitative research approach is adopted to explore and explain how the risk rating in a workplace can be improved, through a peer review behavior stimulation intervention.

2. Literature Review

Environmental Management Systems play a crucial role in helping organizations manage their environmental impacts, comply with regulations, and achieve sustainability goals. Environmental Management Systems has developed within organisations over the past decades as they keep on identifying means to address changing environmental issues (Famiyeh and Anarfo 2014). The institutions have developed and matured into a modern, innovative, and effective 21st Century higher learning institutions, the institutions' institutional governance and management structures have been continually adapted and adjusted to meet emerging regulatory requirements, socioeconomic dynamics and the institutional spirit of transformation and growth (Medvedeva 2015). Environmental degradation and the call for 'sustainable development' provide an extended context and new challenges for research on risk assessment and management (Vlek 1992). Environmental risk management as the resolution of four different types of 'survival' dilemmas in human social activity: benefit-risk, temporal, spatial and social dilemmas (Chen et al. 2014).

These may lead into traps, which arise through discounting of risks, future and distant effects, and collective interests, respectively. The four types of dilemma may combine into various problems of environmental degradation; descriptive field research should clarify this in each case. For resolving such problems, a number of policy strategies is discussed. The dilemmas paradigm suggests multidisciplinary research whereby decision theorists could play meaningful roles, e.g., in formulating decision problems, assessing environmental quality and risk, describing typical human responses to the threat of being trapped, and designing and evaluating ways to achieve a better position in a given dilemma

(Chen et al 2014). The responsibility rests on executive management to ensure that risk management adopts audits and manage the safety health and environmental system and generally, the safety management system is driven by all the change interventions implemented. Environmental education for sustainable development is a system requirement, this include environmental education, research, community engagement assessment and reporting, making the sustainable development an integral part of the workplace institutional framework, and Educating-the- Educators (Ramos et al 2015). Traditionally, strategic risk management has been perceived as a best tool but was only designed to work for a private cooperate world, that has changed as public institutions are now adopting the practice (Uzarski and Broome 2018).

The purpose for a strategic risk management therefore is defined as set of processes undertaken to develop a range of strategies to help an organisation achieve its goals and objectives in a short term (three to five years) medium term (five to ten years) and long term (ten to fifteen years) (Uzarski and Broome 2018). Strategic risk management is an essential component of organizational resilience and long-term success. By integrating risk management with strategic planning, organizations can proactively identify and mitigate risks that threaten their strategic objectives. As technology evolves and the business landscape shifts, organizations must adapt their strategic risk management practices to effectively anticipate and respond to emerging risks. Embracing a proactive and forward-thinking approach to strategic risk management will be paramount in navigating the uncertainties of the future. Environmental degradation poses formidable challenges to ecosystems, biodiversity, and human societies, necessitating urgent action to reverse current trends and safeguard the health of the planet.

By adopting holistic approaches that integrate environmental, social, and economic considerations, policymakers, stakeholders, and individuals can work together to mitigate environmental degradation, enhance resilience, and promote sustainable development for present and future generations. Environmental degradation as subject of a social dilemma, i.e. if one's principal task is to survive in person (or as a group or organization), then to what extent should individual security, comfort and wealth be restricted in order to maintain collective survival conditions such as public utilities, education, transport and healthcare? The problem inherent in each dilemma is that one side may be psychologically more important than the other.

This would make the dilemmas to appear as different kinds of traps: benefit-risk, temporal, spatial and social traps, respectively. Concerning all four dilemmas in combination we may presume that there are strong temptations for people to maximize their own short-term and local benefits at the neglect of collective, long-term and global risks. This is also concluded by Li (2012) who talks about the distality of events with respect to the 'here, now and ego' origin of a person's cognitive space. Environmental risk analysis consists of a series of processes: (1) definition of the scope; (2) identification of environmental risk sources, such as materials, processes and actions contributing to risks; (3) estimation of risk probability and consequences; (4) potential environmental risk receptor analysis, (5) risk evaluation; and (6) proposal for risk reduction and control. Identification of the environmental risk source is one of the most important processes in environmental risk analysis.

A bow-tie analysis is regarded as an effective tool for environmental risk source identification because the diagrams clearly display the links between the potential causes, preventative and mitigative controls and consequences of a major accident (Medvedeva 2015). The left side of the bow-tie diagram consists of a simplified fault tree and the right side of a bow-tie diagram resembles an event Tree (Medvedeva 2015). The tool uses fault tree and event tree analysis to determine the causes and consequences as well as the safety barriers of the basic event. The primary factors that contribute to a fire include explosive/flammable materials and a source of ignition. An accidental fire may cause damage to the plant and injury to human health, environmental pollution and ecological pollution (Chen et al 2014). As the fire proceeds, safety barriers such as equipment quality certification, maintenance of equipment, alarm systems and emergency devices play an important role in ascertaining the amount of damage that will be caused by the accident.

3. Methods

Qualitative case study methodology affords researchers opportunities to explore and explain a phenomenon within its context using a variety of data sources (Baxter and Jack 2008). This approach ensures that the phenomenon under study is explored through a variety of lenses, which allows an in-depth understanding and allows multi facets of the case under study to be revealed and understood (Baxter and Jack 2008). The case study approach aligns to the goals of this research in that the focus of the study is to explore and explain "how" (behavior dictates resultant actions of people in the workplace?) and it covers the contextual conditions in which the phenomenon under study occurs. The

unit of analyses (case) in this study is a focused literature review on curriculum development for ODL in a digital era. The attributes of this research satisfy the definition of a case as stipulated by (Miles et al 1994), they are in line with (Yin 2003), and (Stake 1995) stipulations concerning setting boundaries for cases in a case study research approach (Baxter and Jack 2008). The research also appeals to boundaries stipulated by (Patton 2002), those of time and place (Baxter and Jack 2008). In line with the boundaries of the definition and context, and the research question, the type of case study this research adopts aligns with explanatory and exploratory or descriptive case study as categorized by Yin (Baxter and Jack 2008).

This research will lead to the development of solutions or recommendations that will address the following propositions/ issues regarding divergent, dynamic and sometimes conflicting perspectives with regard to behavioral safety attributes. Propositions and/or issues are necessary elements in case study research in that both lead and precede the development of a conceptual framework that guides the research (Baxter and Jack 2008). Therefore, the research method is link to the research question: How does behavior influence safety management and a risk profile of an organization. This research method will enable the development of a routine management system for environmental risk sources based on behavioral attributes.

4. Results and Discussion

Actuating peer approval through behavioral interventions begins with ensuring behavioral compliance and adopting a methodology for behavior intervention implementation. When starting a program for ensuring behavioral compliance, the space of shared impact in a workplace must be assessed. This space is comprised of the person, the situation and the behavior. The intersection of these three elements of the shared impact in the workplace, is the context (see fig.1). Note that the internal psychological factors and the external observable factors form the frame of reference for each individual.

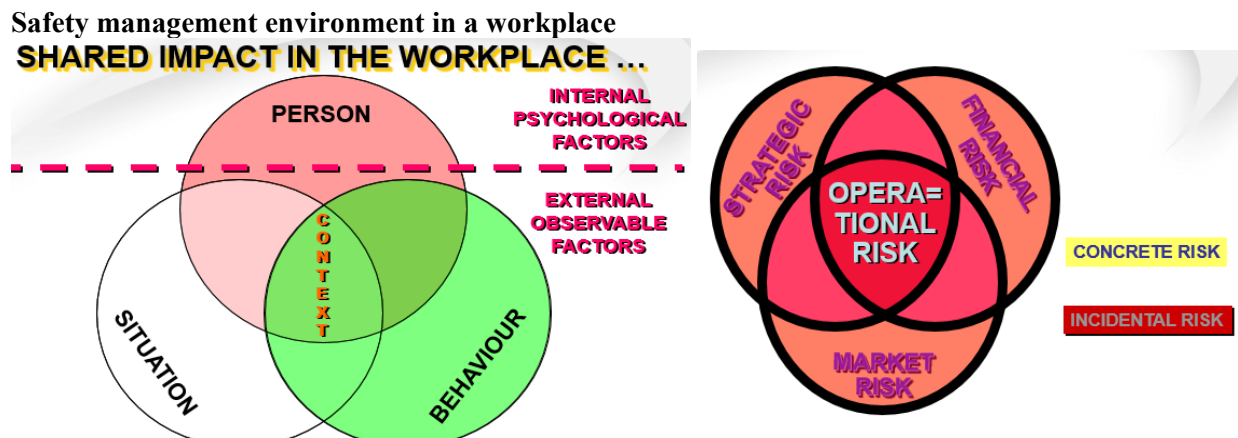


Figure 1. Adapted from (Bandura 1986)

Behavior is influenced by the situation that a person is experiencing, thus the operational risk relates to the context. The context is influenced by the types of risk that exists in that context. Therefore, activators of incidental risk are the context or conditions an individual finds himself or herself in and the behavior that emerges from the context in which the operational risk manifests. Behavior accounts for 90% of the incidental risk and therefore needs to be managed.



Figure 2. Sources of type of behavior (Chen 2014)

In ensuring behavior compliance to safety requirements a model that explains why employees do what they do is adopted and behavior is made a focal point. The model identifies behavior as a visible action that is triggered or inspired and results in consequences. To manage these safety consequences a framework that seeks to control behavior through peer approval is adopted. This framework recognizes the relationships between people, the process that can lead to an operational risk and the technology prevailing.

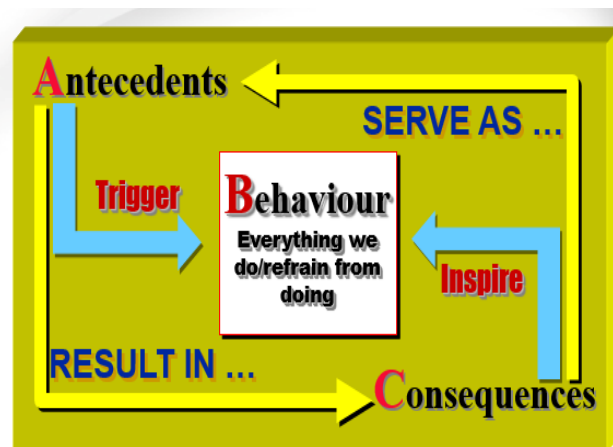


Figure 3. Behavior management Framework

In managing behavior, the catalysts of behavior are recognized as follows: the individual genetic make-up, the internal driving force that makes a person behave in a certain manner and the internal perception and beliefs. Integrating these behavior catalysts into the behavior management framework results in a solution to the behavioral safety risk management challenges (see Figure.3). The challenge is that there is no single solution to influence behavior for workplace safety improvement. Therefore, what qualifies as a solution is a framework that identifies changing behavior as the source for safety challenges in the workplace. This solution recognizes motivation and inspiration as the main solution and a source of internal conviction and consequential conviction, respectively. Internal conviction is the self-reinforcement to compliance with the safety requirements and consequential conviction activates the desire to comply with safety requirements (see figure.4).

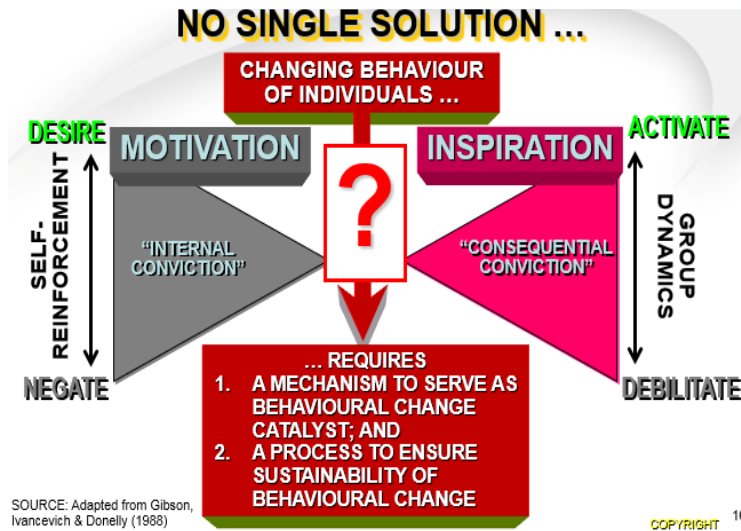


Figure 4. Changing-behaviour solution framework

Note that for behaviour change through internal conviction, an individual will assess the benefit for himself or herself (i.e. what is in it for me?), against their personal expectations and the workplace expectation. The only thing that can override self-reinforcement is the group dynamic, that is, when the group pursues a common goal. In this context, a common goal is improving safety and reducing risk in a workplace. Therefore, if an employee’s self-reinforcement is not congruent with the desire to improve safety and reduce risk, only the group or peer pressure can change the employee and force him/her to comply. In support of group dynamics, changing behaviour must always be support at individual level in order to sustain the change. This means that when peer pressure has been applied to change an individual’s behaviour, support for the new compliant behaviour must be applied targeting an individual and not a group. It is critical in this stage to note that motivation can be used to change perception and the believes and values can be used to re-inforce a positive attitude, which will then trigger a positive intent to behave in compliant to the safety improvement requirements.

Figure.5 below illustrates the activation of a positive behaviour, which is in congruency with the reduction of risk in a workplace and the improvement of safety. The model for behavioural change support the requirement for sustaining behavioural change and focuses on motivation that will ultimately influence intent, which activates behaviour (positively or negatively). It is critical to note that negative behaviour follows the same sequence, and it is triggered by intent, therefore, in activating a safe behavioural change activators of negative behaviour must be removed.

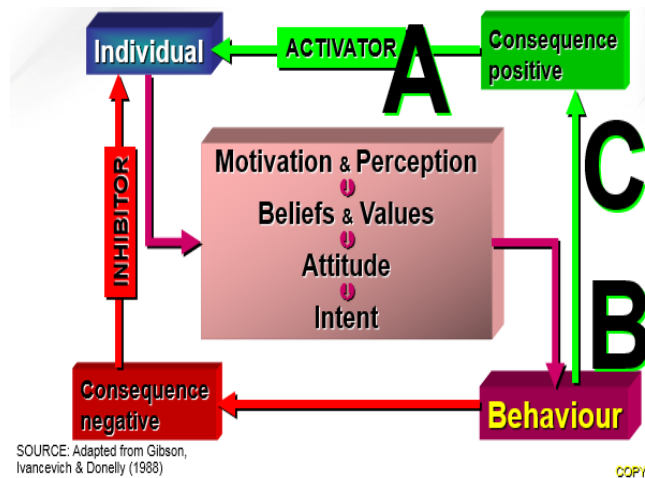


Figure 5. Determinants of positive or negative safety behaviour

Changing non-compliant behaviour implies the application of creative facilitation that will lead to a movement from mediocre and safety threatening behaviour to excellent and safety congruent behaviour. Therefore, this requires a system based on prescribed behavioural attributes, that when executed will result in a change in attitude and thus intent. This movement will lead to the achievement of an improved behaviour that is following safety requirements in a workplace. Figure.6 below illustrates this paradigm.

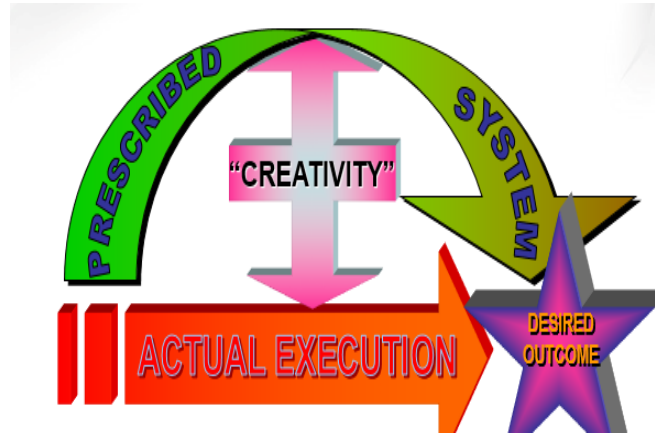


Figure 6. Requirements for changing non-compliant behaviour (Noakes 2010)

Facilitating behavioural change in a workplace is done through engaging natural work team structures. This does not mean the change is brought in as a top down, imposed hierarchical structure but behavioural change to support safety improvement, should involve each and every employee voluntary in their natural work teams. The natural work teams that common in the workplace are management teams (senior, middle, and junior) and the shop-floor employees. Execution of the prescribed safety requirements is done within the teams and across the system of work execution activities. It is evident that behavioural change that leads to improved safety is a process and not an event. It is also apparent that, for the process to result in desired outcomes, it cannot be imposed onto any hierarchical level or individual. Therefore, and in principle for behavioural safety to succeed in any workplace, actuation of antecedents and managing consequences must be established. This process is done through getting employees motivated and inspired to change their attitude and perceptions towards safety requirements. Therefore, change their behaviour and actions in the workplace.

5. Conclusion

It is apparent that changing behaviour is not only about fitting signboards, but it is about engaging in a process of managing consequences, persuading, and convincing employees, in their natural teams, to change their non-compliant behaviour. The process of convincing people applies the use of facts and figure for individuals and a small number of employees. When the groups are big, the method that is applied to convince employees to change behaviour is the continuous re-enforcement of the prescribed principles for the improvement of safety in a workplace (see fig.7).

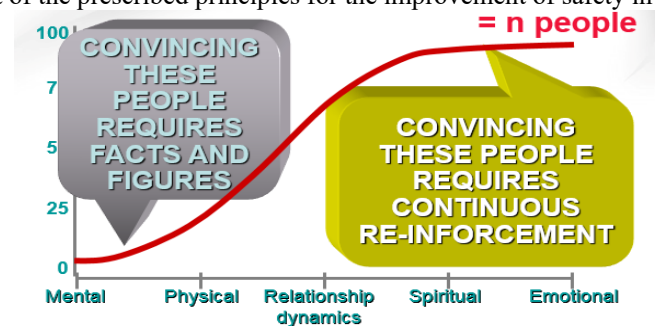


Figure 7. Dynamics for convincing people to change behaviour (Copley 1999)

Change in behaviour can only be achieved with the continuous re-enforcement of the principles prescribed for safety improvement in a system. This implies behavioural change is a process of applying various but synchronised steps that are initiated to activate facilitation of behavioural excellence. The steps required in the process of behavioural change are summarised in five easy steps. Step: 1) Identify critical performance indicators. Step: 2) Implement a process improvement method. Step: 3) Observe, Record, and compile a baseline for the study. Step: 4) Define goals, objectives, and target(s) 5) Gemba daily, observe, give feedback, and manage consequences (until desired result are obtained) for each natural team first and then for the total system (see fig.8 below).

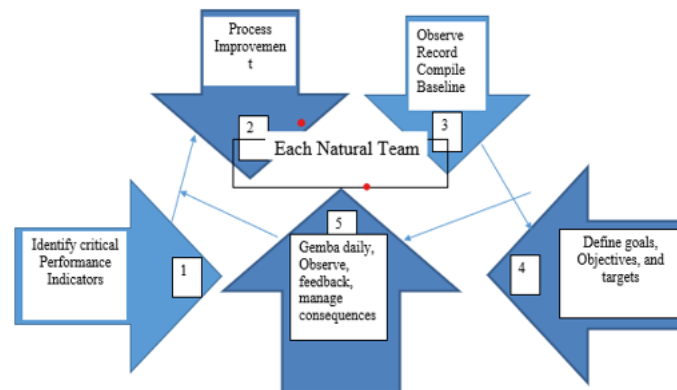


Figure 8. Behaviour modification process

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Biography

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