

Analyzing Policy Limitations in Ensuring Learner Safety in Technology Education Environments

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Abstract

Securing the safety of learners and teachers in technology school workshops requires effective risk management and the enforcement of safety policies. This paper presents the findings of a mixed-methods study conducted in South African technical schools where mechanical technology is taught. The study aimed to investigate the role of safety policies and risk management strategies in safeguarding learners and to explore teachers' knowledge, experiences, and perspectives on workshop safety. A comprehensive literature review and empirical investigation revealed that most schools lack specific safety policies addressing risk management in workshops. The findings indicate an urgent need for clear legal guidelines within school and departmental safety policies to support teachers in fulfilling their duty of care. The study highlights the weaknesses in current safety management practices and emphasizes the importance of policy-driven risk management to enhance workshop safety and prevent injuries among learners.

Keywords: Constitution, safe workshop environment, duty of the school government, duty of the principal, safety policy

Introduction and problem statement

Today, more than ever before, there is a need for effective risk management to ensure safety, as health and safety concerns have become increasingly critical. This is particularly relevant in schools, where management must adopt initiative-taking approaches to minimize and prevent safety risks through well-implemented safety policies. Learners in school workshops are entitled to a safe learning environment, free from harm or unfair disadvantages (Safe-T-Con, 2018). The risks associated with using subject-specific machinery in fitting and turning, automotive mechanics, and welding and metalworking workshops are significant. Given the curriculum requirements for technology subjects, grade 10 to 12 learners spend considerable time working with power equipment and machine tools. The presence of hazardous machinery in mechanical technology workshops increases the responsibility of teachers to manage risks effectively and fulfill their duty of care. Previous empirical research confirms that injuries and incidents occur in school technology workshops (Jurgens, 2019). Limitations in risk

management and safety policies compromise learner safety, making it essential for education role players to prioritize risk management strategies to prevent injuries in school workshops.

Constitution of South Africa

Section 29(1)(a) of the Constitution of South Africa (SA, 1996a) provides that everyone has the right to basic education. According to Section 29(1) of the South African Constitution (SA, 1996a), the State has a responsibility to provide basic education to every learner. The State also has a duty of care to protect the child from abuse, neglect, exploitation, or degradation in any aspect of the school program, including practical curriculum subjects such as mechanical technology, as provided for in Section 28(1)(d). Section 24 of the Constitution of South Africa (1996) provides for the individual right to a safe environment. This section specifically applies to the theme of workshop or workplace safety, health, well-being, and the safety of the learner. Section 24(a) of the Constitution of South Africa (1996) states that “every learner has the right to receive instruction and learning in a safe learning environment that is not harmful to their health or well-being”.

Practical curriculum activities are a secondary part of teaching and learning, and learners have the right to also practice these activities in a safe environment, as already discussed in Section 24. It is, therefore, the learners’ constitutional right to receive education in a safe school environment (Currie & De Waal, 2013). Wentzel (2008) argues that education must be managed in line with the Charter. Educators are responsible for ensuring learner safety in workshops, which means school management and governing bodies must adjust their risk management programs to meet the Charter’s requirements. If a teacher, through negligence, endangers a learner’s safety, they could be held legally liable. The workshop teacher has, therefore, a constitutional obligation to secure the safety of learners under his care. This obligation is highlighted in various articles in the Constitution, as discussed. The Constitution provides a broad framework to indicate that the workshop teacher has a legal duty to regulate the safety of learners in workshops (Currie & De Waal, 2013).

Safe workshop environment

Smit (2022) emphasizes that teachers are responsible for ensuring the safety and well-being of learners, particularly by taking steps to prevent potential risks and injuries in the workshop. This duty of care includes maintaining a safe environment for all involved. Clarke (2012) states that schools should be safe spaces for learners and teachers. Teachers must work in an environment that allows them to carry out their duties effectively while providing a space where learners can thrive academically. A safe school infrastructure is crucial for underpinning a safe teaching-learning situation. A safe school infrastructure allows learners to participate in school activities with confidence, without fear of injury, which can lead to better academic success. Clarke (2012) further indicates that safe equipment and apparatus are further factors in a safe workshop environment. Safe apparatus and machinery stimulate a safe working environment and ensure that quality teaching and academic progress can take place. This allows learners’ intellectual ability to develop maximally.

Duties of governing bodies

The establishment of a safe school is confirmed by legislation and governing bodies; therefore, they have to administer the operation and management of the school's facilities. Mechanical technology workshops form part of the school buildings and are indirectly under the control of the governing bodies, who are therefore tasked with ensuring that they are free from danger (De Wet, 2016). The South African Schools Act 84 of 1996 (SA, 1996b) confers certain duties on governing bodies of schools, which are decisive for the safety management of mechanical technology workshops. Sections 5(5) and 6(2) stipulate that the governing body is responsible for determining policy. De Wet (2016) emphasizes that governing bodies, after careful consideration of national legislative frameworks, must be able to formulate and implement safety policies to guide and control learner safety. In terms of Section 21 of the Act, the governing body has the right to apply to the head of the department for the maintenance and improvement of school property. This right can be interpreted as if the governing body is also responsible for the maintenance and upkeep of workshops, which includes all machinery and tools (Oosthuizen, 2011). About the appointments of teachers to the workshop, governing bodies that make the recommendations must ensure that the workshop teachers are appropriately qualified before the Department of Basic Education makes the final appointment.

Duties of the principal

Under Section 16A(2)(a)(iii), principals must exercise control over the operation of all learner aids such as supplies, machinery, and equipment. Considering this, Oosthuizen (2011) states that the principal delegates his jurisdiction to the workshop teacher, which means that the teacher has the authority over all aspects of the management and control of the workshop. Under Section 20(1)(e), the governing body must assist the principal and teachers in their professional activities. This implies that the principal and governing body are jointly responsible for the administration and use of workshop equipment. Oosthuizen (2011) believes that if the health and safety of learners in the workshops are threatened, the governing body, together with the principal, can be held indirectly liable for it.

Safety policy

Meyer and Van der Westhuizen (2016) point out that the safety measures and safety policies applied in workshops must be in place to eliminate or reduce risks associated with the use of work equipment, unsafe practices, and conditions. Safety policies must, therefore, be developed to identify and correct potential problems. Singh and Surujlal (2010a) believe that risk management forms the core component of any safety policy. According to Singh and Surujlal (Ibid), risk management consists of the following steps: planning, organizing, controlling, and taking direction from others to achieve the goal of the organization. As already discussed, governing bodies of schools with workshops must implement efficient safety programs and policies that comply with existing legislation and policies. The workshop safety policy must comply with the prescriptions as stipulated in the Occupational Health and Safety Act 85 of 1993 (De Wet, 2016). Safety protocols in workshops and learner discipline must be incorporated into the

policies and enforced in the workshops. Learners who adhere to workshop policies experience a secure environment where they feel protected, allowing them to engage in workshop activities with confidence.

Research overview

Research aim

An empirical study was conducted to examine the influence of safety policies and risk management strategies in school-based mechanical technology workshops to ensure the safety of learners.

Research design and method

A literature review was conducted, followed by a sequential mixed empirical experiment. Mixed methods were employed in the empirical phase of the investigation, which combined quantitative and qualitative research methodologies into a single study.

Population

The quantitative investigation's target population consisted of teachers from South African technical schools who taught mechanical technology (N=220). For the qualitative study, a purposeful sample of mechanical technology teachers was selected. Individual interviews were conducted with eight participants.

Ethical aspects

The university's ethics committee approved the study, which was conducted under their oversight and care. All ethical rules set by this committee were followed.

Data collection

A standardized electronic questionnaire was created for the quantitative investigation. The electronic link to the questionnaire was provided to all the school's teachers who teach mechanical technology, and they completed it electronically. One hundred and sixty questionnaires (160) were returned, making up the study population. Following the phenomenological-interpretive phase, eight teachers were interviewed individually using a semi-structured format.

Data analysis

The quantitative data were analyzed and processed by a university's statistical consulting service. The participants' interviews were recorded and transcribed, and several groups, categories, subthemes, and themes were discovered. Upon completion, the conclusive data analysis was made, and views were linked and integrated.

Findings

The findings from the quantitative and qualitative investigations are as follows.

Role of the governing body and principal

According to the teachers, the governing bodies of schools do not play a large enough role in protecting the learners and the educators. The teachers believe that the governing body should accept the responsibility to ensure that the workshop policies are in place and that they are also correctly applied. The teachers point out that the governing body, principal, and school management must create a safe environment for the learner through rules and regulations. Failure to do so can lead to liability. The teachers believe that governing bodies should draw up a safety policy in consultation with the Department of Basic Education that must comply with all legal aspects, and they should ensure that it is effectively applied.

Role of the provincial departments of education

The provincial education departments, as employers, are criticized by teachers for not providing sufficient support to workshop teachers. This study found that the education departments provide insufficient support in reducing risks in school workshops. Each provincial education department should develop a policy that serves as a guideline to assess whether workshops meet the required safety standards and ensure that learners are not exposed to unsafe environments and hazardous conditions. Due to the lack of proper policies and safety regulations that are specifically effective and appropriate for technical workshops at schools, teachers are left in the dark regarding their legal duty. In this regard, there is also a lack of safety among some of the teachers. Some of the teachers are unsure about their duty of care because guidelines for a safety policy are missing.

Safety policy

The teachers are generally aware that a policy is an instrument to determine what needs to be done to limit and reduce risks in the workshops to ensure the safety of learners. The teachers are conscious that effective teaching and learning depend on security and that safety policies are the instrument to achieve this. Most schools do not have a school or departmental safety policy that specifically deals with the application of safety in school workshops. It appears that most of the schools' safety programs that they apply in the workshops are based on general safety measures and safety measures for machinery. Section 19(1) of the Occupational Health and Safety Act (85 of 1993) stipulates that all schools must establish a health and safety committee. Most teachers (85.44%) indicated that they do not serve on the school safety committee. With a question about how much attention their school policy pays to learner safety, 43.13% of respondents indicated that school policies provide only minimal attention to learner safety, 43.13% stated that their schools address learner safety to a large extent, 11.25% reported that their school policies fully prioritize learner safety, and 2.50% indicated that their schools do not address learner safety through policy at all. The data on the implementation of policies related to learner safety followed a similar pattern to the previous question. When asked whether their school had an updated copy of the Occupational Health and Safety Act, 46.25% of teachers indicated that they did, while 53.75% indicated they did not. Similarly, when asked if they had sufficient information from the Department of Education regarding safety in mechanical technology

workshops, 47.50% of teachers reported having enough information, while 52.50% reported insufficient information.

Because the teacher has a duty of care towards the learners, the participants mention that the teacher is expected to do safety management to identify potentially dangerous situations and then take adequate precautions to prevent the risks and injuries. However, the major concern among the teachers is the legal aspects of which they do not have sufficient knowledge. There is a definite need among teachers for the legal aspects to be clearly outlined in the safety policy so that teachers have clear guidelines under which they must exercise their duty of care.

Inadequate qualifications

It was found that some of the teachers in the lower quintile level schools do not have the necessary practical skills to train learners safely. The conditions in the workshops are not suitable for safe practical activities, and the teachers are expected to request the Department of Basic Education to investigate the situation. The conditions are not in the interest of the learners because the safety of the learners is either put at risk due to the incompetence of the teachers, or learners are deprived of teaching and learning because the teachers, due to incompetence, do not present the practical work.

Supervision of the developmental level and competence of the learners

Teachers' level of supervision and responsibility will vary concerning the level of learners' participation, competence, experience, and age of the learners. The study confirms what Singh and Surujlal (2010b) found, that teachers' standard of supervision and control is influenced by factors such as the age, competence, and skills of the learners. It was found that teachers know that risks can be limited or reduced by selecting learners so that certain learners can only perform certain tasks or only work with certain machinery.

Techniques and instructions

Teachers realize that their actions could be considered negligent if injuries result from the incorrect use of machinery and tools when teachers have not properly explained the necessary instructions and techniques to learners.

Unqualified teachers and inadequate subject knowledge

It was found that some teachers teach the subject without having proper knowledge, especially knowledge and experience related to the practical component of the subject. Some teachers think that principals can be held liable if their educators do not have the necessary qualifications to ensure the safety of the learners. The teachers feel that these unqualified or incompetent teachers unnecessarily expose themselves to possible liability if a learner sustains an injury during a practical activity. The findings in the study confirm that a major cause of accidents and injuries, according to Du Bruyn (2007, p. 11), is that the persons are not appropriately qualified or skilled enough to work with the machine tools. When asked if they could confidently implement the necessary control measures to reduce risks in mechanical technology workshops, 25.63% of teachers indicated confidence in doing so, while 74.38% expressed a lack of confidence.

A teacher explains that if the principal and governing body recommend the type of teachers in the workshop and the Department of Basic Education ratifies the recommendation and learners are injured under their care, the Department, principal, and governing body can be held liable for the injuries.

Some of the teachers at the low-quintile level schools that teach mechanical technology are not at all competent to teach the practical component of the subject. Some of the teachers at the low-quintile level schools are ordinary, academically qualified teachers who follow a few short technical training courses and are appointed as technical teachers and then teach the subject. Some of the teachers who teach mechanical technology are not at all competent to teach the practical component of the subject. This deficiency, insufficient skills, and ignorance of these teachers who have only completed a short course were noted by other teachers during practical training sessions offered by the various provincial education departments. To ensure expertise in the workshop, teachers' professional training and qualification must meet the necessary standard as expected of a professional. Some of the teachers argue against the practice of unqualified, ignorant, and incompetent teachers because it is not in the best interest of the child, as stipulated in Section 28(2) of the Constitution.

Conclusion

The study's findings suggest that the teachers who participated feel insecure in various situations in the workshops. There is a lack of safety due to unsafe conditions, unqualified and incompetent teachers, and a gap in safety guidelines that determine effective teaching and learning. The teachers believe they do not obtain sufficient support from their principals and governing bodies, specifically from provincial Departments of Education. As an employer, the Department of Education is obliged to lay down guidelines that must comply with the teachers' duty of care. The teachers have a legal duty to provide careful supervision, but due to certain factors, there is still some restraint, and teaching and learning activities are restricted.

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