Concept development for facilitating the health and safety efficacy of South African mine workers

by

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Supervised by Professor Mokubung Nkomo

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ABSTRACT

The aim of this research is to inform conceptual approaches to health and safety (H&S) training for mineworkers in South Africa. The study focuses specifically on those mineworkers who have the least formal education or training, termed elementary workers (unskilled) and machinery operators and drivers (semi-skilled). It is an integrative literature review of sources drawn from mine health and safety in South Africa; self-efficacy; adult education and training (AET); education and training in mining; and relevant health promotion studies. The sources selected refer to work in the Southern African mine H&S context, or comparable situations. Compelling ideas and formulations for training are suggested in the literature of the different disciplines reviewed.

A core concept considered is self-efficacy and the concept has substantial support in the literature. Both the term and concept of ‘self-efficacy’ have been used in South African and mining studies, but often without proper consideration of the sources of self-efficacy and its task- and context-specificity.

The review reveals a lack of evidence of effective advocacy and training around generic mining occupational hazards, such as lung disease. H&S training is most evidently linked to operator training, which is aligned with unit-standards. However, substantial numbers of mineworkers lack adequate formal education for such training programmes, or the informal skills to be included via recognition of prior learning (RPL) processes. The proposed role of H&S representatives appears demanding, but the associated skills training outlined in public unit standards, lacks essential elements.

The findings identify key considerations for an underpinning approach to H&S training for elementary mineworkers. These are: new learning required; risk perception and management; existing and associated logics; team ethos; maintaining new learning and practice; and a dialogic aspect to programmes. Additional findings suggest that the convergent effects of different policies result in the training of the least educated mineworkers being marginalised. The study concludes with six propositions that relate to the research and development of H&S training for mineworkers, public evidence of training, policy effects and the predicament of mineworkers who lack formal education.
KEY WORDS

Adult education
Adult basic education and training (ABET)
Adult learner
Health and safety (H&S)
Mineworker
Mining
Policy
Self-efficacy
South Africa
Training

ACRONYMS AND ABBREVIATIONS

ABET Adult basic education and training
AET Adult education and training
ANC African National Congress
ASM Artisanal and small mines
BEE Black economic empowerment
BBS Behaviour-based safety
CAL Computer-aided learning
CEO Chief executive officer
COM Chamber of Mines
COSATU Congress of South African Trade Unions
DME Department of Minerals and Energy
DMR Department of Minerals Resources
DOE Department of Education
DHET Department of Higher Education and Training
GEAR Growth, Employment and Redistribution Strategy
GDP Gross Domestic Product (GDP)
H&S Health and safety
HEARD Health Economics and HIV Aids Research Division
HIRA Hazard identification and risk assessment
HIV Human immunodeficiency virus
HRD Human resource development
HSRC Human Sciences Research Council
MHSA Mine Health and Safety Act
MHSC Mine Health and Safety Council
MHSI Mine Health and Safety Inspectorate
MQA Mining Qualifications Authority
ILO International Labour Organisation
IOM Internal Organisation for Migration
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<td>NEPI</td>
<td>National Education Policy Investigation</td>
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<tr>
<td>NGO</td>
<td>Non-governmental organization</td>
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<td>NIHL</td>
<td>Noise-induced hearing loss</td>
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<td>NIOH</td>
<td>National Institute for Occupational Health</td>
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<td>NLC</td>
<td>National Literacy Cooperation</td>
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<tr>
<td>NQF</td>
<td>National Qualifications Framework</td>
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<tr>
<td>NSB</td>
<td>National standards body</td>
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<td>NSDS</td>
<td>National Skills Development Strategy</td>
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<td>OBE</td>
<td>Outcomes-based education</td>
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<tr>
<td>OBET</td>
<td>Outcomes-based education and training</td>
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<tr>
<td>ODMWA</td>
<td>Occupational Diseases in Mines and Works Act</td>
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<td>OHS</td>
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<td>OHSA</td>
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<tr>
<td>PAC</td>
<td>Pan African Congress</td>
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<td>PPE</td>
<td>Personal protective equipment</td>
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<td>R&amp;D</td>
<td>Research and development</td>
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<td>RDP</td>
<td>Reconstruction and Development Programme</td>
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<td>RPL</td>
<td>Recognition of prior learning</td>
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<tr>
<td>SACP</td>
<td>South African Communist Party</td>
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<td>SAIRRR</td>
<td>South African Institute of Race Relations</td>
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<td>SANLI</td>
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<td>SAQA</td>
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<tr>
<td>SETA</td>
<td>Sector education and training authority</td>
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<td>SGB</td>
<td>Standards generating body</td>
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<tr>
<td>SIMRAC</td>
<td>Safety in Mines Research Advisory Committee</td>
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<tr>
<td>SR</td>
<td>Severity rate</td>
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<tr>
<td>TB</td>
<td>Tuberculosis</td>
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<tr>
<td>TWA</td>
<td>Time-weighted average</td>
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<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organisation</td>
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<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
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<tr>
<td>VR</td>
<td>Virtual-reality</td>
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CLEARANCE CERTIFICATE

DEGREE AND PROJECT
PhD
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INVESTIGATOR(S)
Gwyneth Myfanwy Tuchten

DEPARTMENT
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DATE CONSIDERED
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