Rationalising the optimal minimum qualification requirements of a production shift supervisor at a Sedibeng steel company

PR Ntikang

orcid.org/0000-0002-2180-170X

Mini-dissertation accepted in partial fulfilment of the requirements
for the degree
Masters in Business Administration
at the North-West University

Supervisor: Prof Christoff Botha

ABSTRACT

The Sedibeng Steel Company has been employing junior managers since 1928 in production and maintenance. These managers require a minimum qualification: a national matric certificate or equivalent for production function and an artisan TVET college qualification for maintenance function. At the beginning of 2022, the organization introduced a national diploma as a minimum requirement for junior managers. This decision was a one-sided managerial decision. This study investigates empirical evidence to justify this decision. The primary objective was to use the production shift supervisors as a reference group to rationalize the organization's decision to upgrade the minimum qualification requirements for the production shift supervisors to a national diploma. The study first investigated if there is evidence of skills gaps among the current production shift supervisors that justifies the organization's decision to upgrade the minimum qualification requirements to a national diploma. Secondly, the study investigated if upgrading the minimum qualification requirements for the production shift supervisors will successfully address the skills deficit. A qualitative approach was adopted. It's a cross-sectional, inductive study that subscribes to interpretivism philosophy. Interviews with six production managers provided rich data on their working experience with the production shift supervisors. Grounded theory and thematic analysis were employed to analyse the data. The findings confirmed that production shift supervisors have skills gaps. Therefore, the organization's decision to introduce a national diploma as a minimum qualification is justified. The consensus was that a national diploma would improve the performance of the production shift supervisors. However, the findings also showed that upgrading the minimum qualification requirements of current production shift supervisors will be challenging.

Key words: Qualifications, Technology, supervisors, competitiveness, steel Industry

ACKNOWLEDGEMENTS

Firstly, thank You, Almighty God, for giving me the strength and health to complete this MBA program. I want to thank my wife, Letshego and my two sons, Olerato and Bokamoso, for being patient with me throughout the process. Professor Christoff Botha, I would like to thank you for your wisdom and dedication throughout the mini-dissertation process. I want to thank the NWU business school, the management of AMSA, and all my colleagues who contributed to the success of this research study. Lastly, I would like to thank my study group, “Vaalians”, for all the hard work in the past two years.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1 RESEARCH SCOPE

1.1 INTRODUCTION

Sedibeng Steel Company has four layers of management levels: executive, senior, middle and junior management. Production shift supervisors work rotationally at a junior management level to cover a 24-hour day. In addition, day shift supervisors are working from eight o'clock in the morning to four o'clock in the afternoon for disciplines such as mechanical, electrical and millwrights. All day shift supervisors are trained artisans with a trade test who got promoted into management roles. Until recently, the production shift supervisor's position only required a national matric certificate as a minimum qualification to meet a junior manager role requirement. From the beginning of 2022, Sedibeng Steel Company upgraded the minimum qualification requirements for all junior manager-level supervisors to a national diploma.

The steel company has employed artisans as maintenance supervisors and matriculants as production shift supervisors since its inception in 1928. In the past five to ten years, Sedibeng Steel Company started taking advantage of technology by introducing systems such as SAP, Cindel, SMART, and Aspen to decentralize information databases. Other interactive systems, such as MS Project, were also introduced to manage planned plant shutdowns and projects. Managers and technical professionals utilized these systems. They are currently introduced at a junior management level. The world has seen an introduction of technological advancements such as the Internet of Things (IoT), big data analytics, and artificial intelligence (AI), collectively known as the fourth industrial revolution (4IR). This implies that the information is no longer stored and kept for records. Technology enables organizations to use stored information for competitive advantage.

Maisiri and van Dyk (2021:7) researched the impact of industry 4.0 (I4.0) on workforce skills from the South African manufacturing industry perspective and found that I4.0 has the potential to adversely affect jobs if measures are not taken to align the workforce skills with industry skills requirements. It is crucial to promote the learnability of the workforce to exploit technological advancement and meet ever-changing demands fully (Rae *et al*. 2019:36). In addition to technological advancement, the steel company underwent a series of section 189 episodes during the years 2015, 2019 and 2020 where employees were laid off. According to Adriaan's Attorney's (2022), Section 189 of the Labour Relation Act (LRA) allows employers to lay off employees for operational reasons. The dismissed employees' responsibilities were transferred to the remaining workforce.

Instead of focusing on the junior manager population, this study uses the production shift supervisor role to restrict this research work. The primary objective of this research work is to use the production shift supervisor role as a reference group to rationalize the organization's decision to upgrade the minimum qualification requirements for the production shift supervisors to a national diploma. The question is whether the organization's decision to introduce a national diploma certificate as a minimum requirement for the production shift supervisor role is justified.

1.2 BACKGROUND OF THE STUDY

Qualifications such as a national diploma or a degree represent information about an individual's knowledge, skills and experiences. They are used by organizations that require specific capabilities as indicators of sets of skills that are required or seen as value-adding in the workplace (Keating *et al*. 2005:11). Williams (cited by González, 2020:4) argues that experience gives employers confidence that a candidate has a better chance of meeting the job requirements. The steel company in Sedibeng has historically appointed operators with at least eight years of experience, including the time spent in the production learner program as production shift supervisors. The operators start as production learners and are appointed as a "K4 grade"; this is an entry position. They progress from K4 grade to J4 grade, I4 grade and finally, a shift coordinator position (H4 grade) before being considered for the production shift supervisor position.

The organization's policy is that an employee must stay in a position for a minimum of 18 months before they are considered for promotion to the next grade. The minimum qualification requirement for entry into the production learner program is a national matric certificate or equivalent, e.g., N3 TVET college qualification. This qualification requirement remained the same up to the production shift supervisor position. Available vacancies in any job grade are advertised, and employees who meet the minimum requirements may apply. The entry qualification requirement of a national matric certificate or equivalent, minimum number of years in a position stipulated by the policy and complete competence on the individual development program (IDP) are considered sufficient minimum requirements in all job grades. Once employees are invited to the interviews, a panel of interviewers, which includes the production manager, human resources consultant and an additional member, ask questions prepared by the production manager. The candidates are scored based on how they answered the interview questions. An employee with the highest score is appointed to a position.

The IDP is an internal program developed to guide employees into a new role of job grading, and it entails learning the standard operating procedures (SOPs) designed for a specific job grade and undergoing summative and practical evaluation. The shift coordinators and/or production shift supervisors become mentors to employees working on their IDPs . They also train and evaluate them. They declare them competent when the employees can perform their duties independently and without supervision.

The employees in a job grading between K4 and H4 are categorised as bargaining units (blue-collar workers); they are only responsible for machine operation. When promoted to a production shift supervisor position, they become part of package category employees (white collar workers). The package category is a group of employees that either form part of management or are qualified professionals with a national diploma or a degree relating to their organisational functions. When bargaining unit employees are appointed in a production shift supervisors' role, their job requirements go beyond just machine operation. It entails preparing a formal shift report, people management, decision-making, and planning. They learn how to become a production shift supervisor, making mistakes along the way.

The organization's decision to upgrade the minimum qualifications requirements at a junior manager level has created debates amongst the workforce. Those who argue in favour of the organization's decision believe that qualifications are necessary to gain a competitive advantage. Those who argue against the decision believe the organization would suffer because they feel experience is more important than qualifications. The debate on all junior managers is quite broad. This research attempted to isolate the production shift supervisor role from the junior manager population and used them as a reference group. Only the Vanderbijlpark production facility was considered for the research.

1.3 DEFINITION OF TERMS AND CONSTRUCTS

1.3.1 Sedibeng steel company

According to the organization's website (AMSA, 2023), the steel company is the largest steel producer in sub-Saharan Africa. They employ 10 270 employees and contractors to produce flat and long steel in hundreds of grades and specifications for further value added by their customers,

i.e., downstream manufacturers in Southern, West and East Africa (and other markets). The company was founded in 1928 and is well known for its reputation for reliability and a sharply defined business focus, which has forged the organisation into a modern, highly competitive supplier of steel products to the domestic and global markets. This has been achieved through ongoing alignment with international best practices and a comprehensive understanding of the steel business environment, ensuring the company's continued global competitiveness and participation in international markets.

Sedibeng steel company forms part of the worldwide group, which employs approximately 154,000 people and produces more than 59 million tonnes of crude steel annually. They primarily manufacture steel at the capital-intensive factories. Different types of steel are manufactured at the four geographically dispersed factories, Vanderbijlpark (flat) and Vereeniging (long) in the Vaal Triangle of Gauteng, in eMalahleni, Mpumalanga (structural) and in Newcastle (long) in Northern KwaZulu-Natal.

1.3.2 Production shift supervisor

A production shift supervisor, also known as a foreman or team leader, leads a team of operators responsible for operating the plant equipment or machine on 24-hour rotational basis. The role includes leadership, operations decision-making, preparation and presentation of a formal shift report to the production manager, and communication with the process team, equipment reliability team, equipment maintenance team and millwrights. They also interact closely with the human resource department on issues about people management and the SHERQ Department (the SHERQ department refers to *Safety, Health, Environment And Quality)*. They can follow a three- or four-shift pattern depending on the preferred work schedule rules. A three-shift pattern means three shift teams with one production shift supervisor leading each team. Likewise, a four-shift pattern means four shift teams with one production shift supervisor leading each team. In both cases, they relieve each other on a rotational basis for a 24-hour operation organization.

The production shift supervisors are responsible for their team and are accountable to the production manager. The only interface between them is during shift change, where the outgoing production shift supervisor provides a shift report to the incoming one. The shift report entails the production performance, challenges encountered during the shift, risks for the day, instructions

for the day and a plan for remainder of the day. The reporting structure in Figure 1 below suggests that the production shift supervisors are the only employees who did not study beyond matric in the package category.

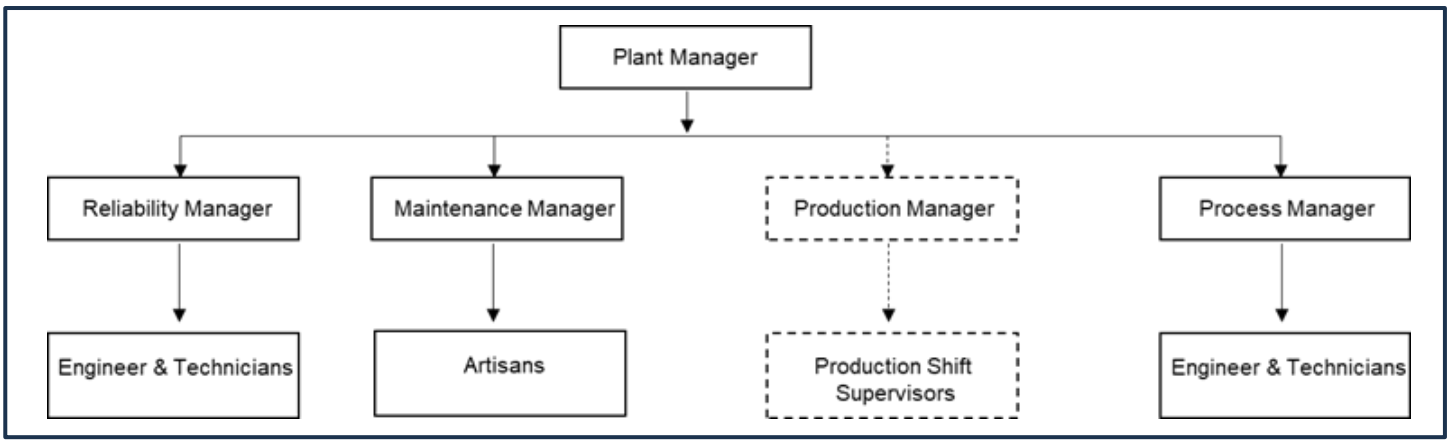


Figure 1: Summary of production facility organogram

1.3.3 Qualification

The Oxford Dictionary explains qualifications as an exam you have passed or a course of study you have completed to have qualifications. The Merriam-Webster dictionary defines qualifications as a quality or skill that fits a person (as for an office). According to Ridoutt *et al*. (2005:22), the term 'qualification' is a quality or accomplishment attached to a person and is generally considered a condition that must be fulfilled before an 'office' can be occupied. A qualification refers typically to a certificated endorsement from a recognized awarding body that a level or quality of accomplishment has been achieved by an individual (González, 2020:3).

1.3.4 Optimal

According to the Oxford Dictionary, "optimal" refers to the best possible, producing the best possible results. Merriam-Webster dictionary defines the word optimal as "most desirable or satisfactory". The research attempts to explain why the national diploma qualification could be at a minimum, the best possible for the production shift supervisor to produce the most satisfactory results.

1.3.5 Fourth industrial revolution

The fourth industrial revolution, also known as 4IR—is the next phase in the digitization of the manufacturing sector, driven by disruptive trends, including the rise of data and connectivity, analytics, human-machine interaction, and improvements in robotics (McKinsey and Company, 2022). The 4IR systems and technologies across diverse sectors rely on having appropriate connectivity services to function. A key component of 4IR is digital infrastructure (Alexander, 2021:3). It is, however, argued that the fourth industrial revolution in developing countries might not thrive or be exploited fully if the enabling resources for its success are not available, one of these enablers is digital literacy (Olaitan *et al*. 2020:2). Sourcing talent that is flexible on their work schedules and open to working with technology is crucial to achieving new workforce models (PWC, n.a.). In an era controlled by digital technology, the most attractive and valuable resource will not only be ordinary labour or capital, but it will also be individuals with innovative and creative minds (Xu *et al*. 2018:93).

1.3.6 Section 189(2) of the labour relations act

Section 189(2) of the Labour Relations Act permits employers to lay off employees for operational requirements, defined as requirements based on the employer's economic, technological, structural, or similar needs (Adriaan Attorneys, 2022). During the section 189 process, the organizations consult with the employee's representatives, and the following are discussed (Adriaan Attorneys, 2022):

- How to possibly avoid the dismissals
- Negotiations to minimize the scale of dismissals
- Measures to change the timing of the dismissals
- Mitigation of the effects of the retrenchment
- The selection criteria when dismissing employees
- Severance Pay

During the 2015 and 2019 section 189 processes, the focus was closing some production facilities. Therefore, the effect on the remaining employee's scope of work was not detected. The 2020 Section 189 process was different because it focused on reducing the number of employees in the operating facilities. During this process, the negotiations were driven by the employee's representative's desire to save jobs and the employer's intention to reduce business costs. The negotiations did not go into the details of the effect of section 189 on the remaining employee's scope of work.

1.3.7 Benchmarking

According to the Oxford Dictionary, benchmarking is a process of judging the quality of something in relation to that of other similar things. Merriam-Webster dictionary defines a benchmark as a point of reference from which measurements may be made. The Sedibeng Steel Company forms part of a global group. Therefore, three sister companies, Tubarão in Brazil, Gent in Belgium and Fos-sur-Mer in France, were used as references to judge the minimum qualification requirements standards of the production shift supervisor at Sedibeng Steel Company.

1.3.8 Rationalising

The Oxford Dictionary defines "rationalize" as finding or trying to find a logical reason to explain why somebody thinks or behaves in a certain way. Merriam-Webster dictionary defines the word rationalize as to bring into accord with reason or cause something to seem reasonable, such as to apply research-based managerial principles to (something, such as an industry or its operations) for increased productivity and efficiency. The study applies research principles to find a logical reason to explain Sedibeng Steel company's decision to optimize the minimum qualification requirements for the production supervisor role.

1.4 PROBLEM STATEMENT

The Sedibeng Steel Company has a total population of 151 production shift supervisors across all its operating sites, i.e., Vanderbijlpark, Vereeniging, eMalahleni and Newcastle. The Vanderbijlpark site contributes 70% to the total population. Figure 2 shows the qualification statistics of the current production shift supervisors. It is evident from the graph that 80% possess a national matric certificate, 8% (artisans) crossed over from maintenance to production, and 4%

do not have matric. The data was collected shortly after the organization implemented a national diploma as a minimum qualification requirement for production shift supervisors. Some 8% of the production shift supervisors have a national diploma. Section 1.2 above discussed how 80% of the production shift supervisors were trained, appointed and informed of what the job entails. The shortcomings of their appointment were also alluded to, mainly because they are self-taught and the calibre of employees they operate amongst.

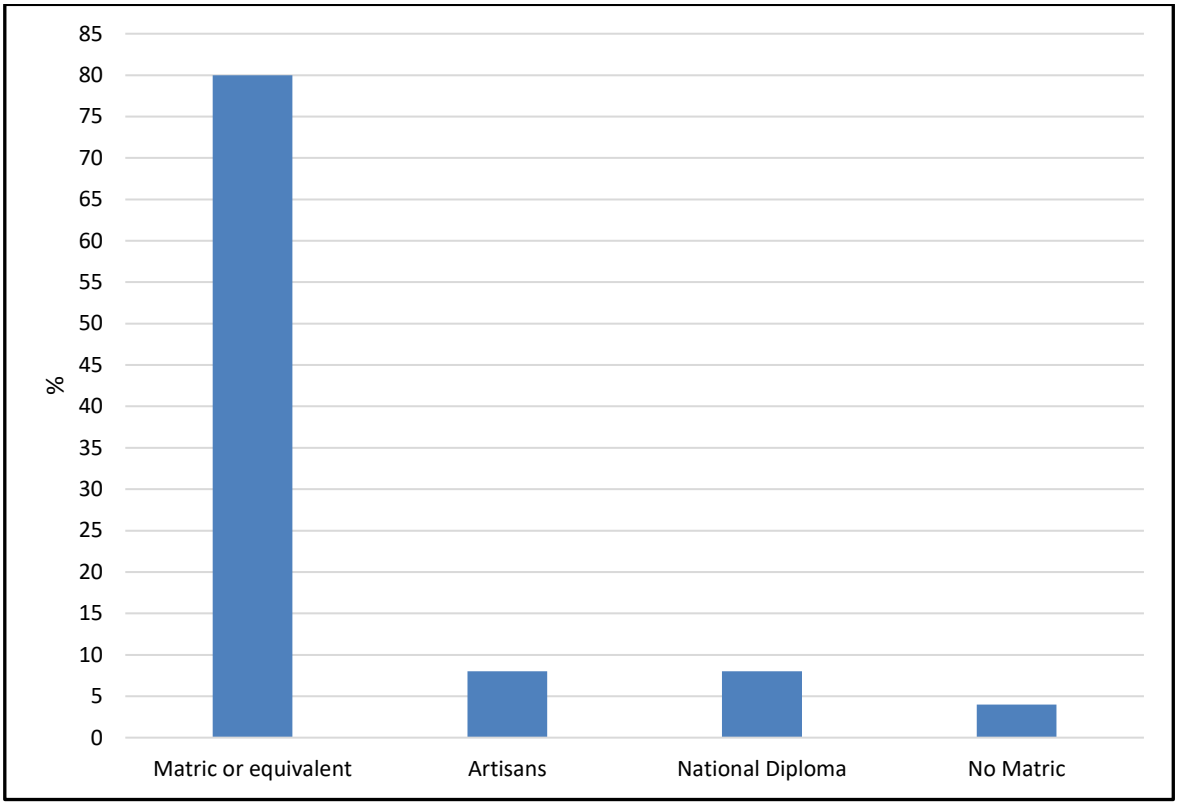


Figure 2: Statistics of current production shift supervisor qualification

Figure 3 shows the organization's performance measured in terms of EBITDA in the past three financial years, 2023, 2022, and 2021 (AMSA, 2023; AMSA, 2022; AMSA, 2021). The cost drivers relevant to this research work, fixed costs and the internal initiatives' cost savings are included. From the financial year 2020 to 2022, fixed costs were significantly reduced (55%). This is attributed to the closure of facilities in the 2019 section 189 process. However, the benefit realized only in the 2020 financial year. The best performance in the past three years was recorded in 2021. However, this was not a true reflection of the business performance. The employees' salaries were reduced by 45%, while the government Unemployment Insurance Fund (UIF)

temporary Employer-Employee Relief Scheme (TERS) took over the responsibilities to help companies survive the pandemic during COVID-19.

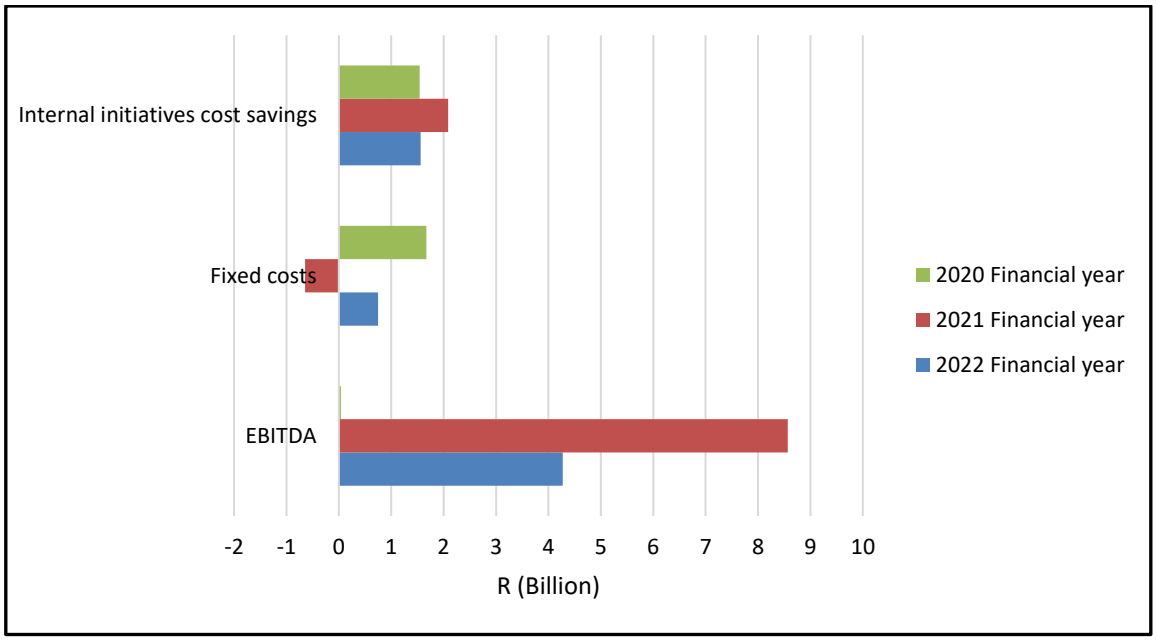


Figure 3: Sedibeng Steel Company's financial performance in the past three years

The organization has reached a point where closing facilities is no longer viable because only core processing facilities are left. The next step is to focus on operational efficiency, which can either be realized through improving existing facilities at a cost or by focusing on uplifting workforce capabilities. The latter has proven a viable option, as seen from billions of rands saved from the internal cost saving initiatives (see Figure 3). The internal cost saving initiatives are ideas from employees to improve production efficiencies. Identifying these initiatives entails knowing and understanding the key performance indicators (KPIs) and the ability to interpret data. About 90% of these ideas come from engineers, technicians and the management layer above the junior management level, all of which have a national diploma qualification or above. This suggests that the current junior managers either do not have the propensity to challenge the status quo or do not have the capabilities to do so.

The challenge with introducing a national diploma as a minimum requirement at the junior manager level is that there was no empirical evidence to support it. As a result, the employees at

all levels were left to speculate whether this was the right decision. The production shift supervisors who are junior managers in the production function are used as a reference group to aid in rationalizing the organization's decision to optimize the minimum qualification requirements at the junior manager level at a Sedibeng steel company.

1.5 PRIMARY AND SECONDARY OBJECTIVES

1.5.1 Primary objective

The Sedibeng Steel Company decided to upgrade the junior manager role's minimum qualifications requirements to a national diploma at the beginning of 2022. This decision suggests that their skill level is not adequate for the role. However, there is no empirical evidence to support the decision. The primary objective of this research work is to use the production shift supervisor role as a reference group to rationalize the organization's decision to upgrade the minimum qualification requirements.

1.5.2 Secondary objectives

- Investigate if there are any skills gap in the current production shift supervisor population that justifies the organization's decision to upgrade the minimum qualification requirements to a national diploma.
- Determine if upgrading the minimum qualification requirements for the production shift supervisor role at Sedibeng will address the perceived skills deficit.
- Benchmark the minimum qualification requirements for the production shift supervisor role at Sedibeng Steel Company against similar companies in the global group.

1.6 PRIMARY RESEARCH QUESTION

Is the steel company's decision justified to introduce a national diploma certificate as a minimum requirement for the production shift supervisor role?

1.7 SCOPE OF THE STUDY OR DELIMITATIONS

1.7.1 Field of study

The research project falls under the category of people management (HRM). The focus was to use empirical qualitative research results to explain Sedibeng Steel company's decision to upgrade the minimum qualifications requirements for junior managers to a national diploma using the production shift supervisor role as a reference group. A sample from the production manager population was interviewed to reflect the performance of the production shift supervisors. The decision to upgrade the minimum qualification requirements of a production shift supervisor role to a national diploma was evaluated by examining the experience of the production managers working directly with the production shift supervisors. Furthermore, Sedibeng Steel Company benchmarked the minimum qualification requirements with similar companies in the global group.

1.7.2 Business under investigation

The research focuses on the steel manufacturing industry, precisely the production function. The Sedibeng Steel Company's strategy is to minimize costs by improving production process efficiencies. The top cost-saving opportunities are in areas such as efficient energy consumption, optimum plant utilisation, and prioritizing quality. A suitable production shift supervisor must be able to effectively manage all the key performance indicators attached to the cost-saving opportunities listed above. High production rates are crucial in diluting production costs. Therefore, production shift supervisors must build a team sensitive to deviation from key performance indicators.

1.7.3 Geographical demarcation

This research is limited to the steel company based in Vanderbijlpark, Gauteng Province, in South Africa. The findings were extendable to other operation sites across the country because the company's headquarters is based in the area. The international benchmarking will only be limited to minimum qualifications requirements for the production shift supervisor role in the company's global sister companies.

1.8 RESEARCH DESIGN AND METHODS

1.8.1 Literature review

Firstly, there is a distinct difference between research method and research methodology – research method is concerned with steps taken to conduct and implement research, while research methodology is the science and philosophy behind all research (Adams *et al*. 2014:5). This section focuses on the method followed.

Research design acts as a master plan that makes it possible to fulfil research objectives. It specifies the methods and procedure for collecting and analyzing data – it also ensures that the data collected is adequate to answer the research question (Adams *et al*. 2014:64). The research topic was chosen as a result of an ongoing debate amongst Sedibeng steel company's employees about whether the organization's decision to introduce a national diploma qualification as a minimum qualification requirement at a junior manager level will improve the performance of the business or not. At the time, there was no empirical evidence to support the debate. The only thing that was clear at the time was the question of whether the decision was justified or not. The researcher mapped out the actions and resources needed to answer the question, also to determine the chances of succeeding before writing a research proposal.

The theoretical lenses from which the researcher approaches the situation, the strategies that the researcher employs to collect or construct data, and the understanding that the researcher has about what might count as relevant or important data in answering the research question are all analytical processes that influence the data (Thorne, 2000:68). The first thing that needed to be established was whether the current junior managers are performing at the required level. The organization has a large and mixed population of junior managers, such as production, maintenance and millwrights. Therefore, attempting to study them all would be too broad and time-consuming. The production shift supervisor population was selected as a reference group. The production shift supervisor population was chosen because the researcher is a production manager with sufficient insight into the discipline to take on the topic.

The sample size must first be considered, confirm whether it is statistically justified and, secondly, what method of sampling is going to be employed to execute a study (Adams *et al*. 2014:72). An

undersized sample can be a waste of resources if it cannot produce useful results while an oversized sample can cost more resources than necessary (Adams *et al*. 2014:77). The organization has a population of 151 production shift supervisors spread amongst four operating sites in Vanderbijlpark, Vereeniging, eMalahleni and Newcastle. The Vanderbijlpark site was selected to be the study focus because the production shift supervisor population in the area constitutes 70% of the total Sedibeng steel company's production shift supervisors.

Qualitative research methods and data collection techniques consume a lot of time in most cases. For example, conducting interviews requires investing a lot of time in the participants, and for this reason, researchers choosing the qualitative method approach tend to be satisfied with a small sample compared to using any other research method, such as the quantitative method (Oun and Bach, 2014:254). The researcher acknowledged that the topic of minimum qualification requirements for junior managers was susceptible, and the research outcomes were at risk of being distorted if the production shift supervisors were used as study participants. It was decided that the production managers be chosen as the study population. Sedibeng Steel Company has a population of 17 production managers presiding over 106 production shift supervisors. Statistically, one production manager would represent a total of 6.2 production shift supervisors. Based on the statistics, at least four production managers must participate in the research study to achieve a minimum sample size of 25% of the total production shift supervisor population at the Vanderbijlpark site.

The data collection and analysis should be done until no new information emerges (Mayer, 2015:60). Interviewing only four production managers, as determined by statistical calculation, posed a risk of working with an undersized sample. Therefore, the aim was to interview nine production managers. However, only six were interviewed because three out of nine identified participants did not respond. Six participants were considered sufficient because it was 33% more than the minimum required. Furthermore, saturation was reached when the sixth participant was interviewed.

Qualitative research can make use of different data sources, like observation, unstructured interviews, group interviews, and the collection of documentary materials (Graue, 2015:8). The semi-structured interview type was chosen for this study because it provides a good balance of

consistency and the ability to extract more information by asking probing questions. The researcher also contacted the human resource departments of similar companies in the global group. For that purpose, the in-depth or unstructured interview was employed because the intention was not to restrict the information from the interaction. Individual interviews for the qualitative method can be designed in three different ways, depending on the researcher (Oun and Bach, 2014:254):

- Type (I) is the In-depth interview or the unstructured type
- Type (II) is the focused interview or Semi-structured
- Type (III) is the structured type. In this type, the interviewer asks the participants the same questions in the same way

The term “qualitative research” encompasses a wide range of philosophical positions, methodological strategies, and analytical procedures (Thorne, 2000:70). The first step in organizing and analyzing verbal data is transcribing, which involves close observation of data through careful, repeated and attentive listening - transcribing verbal data is a helpful starting point for data organization and analysis for some reasons (Widodo, 2014:102). All the interviews were conducted remotely through Microsoft Teams to exploit its recording and transcribing functionalities. The language setting was American English; therefore, the transcript must be edited by listening and correcting. After transcribing, the analyzed responses identified quotes that were clustered as codes. Tables and graphs represent the results.

1.8.2 Empirical study

An empirical study is based on demonstrated objective facts. It relies on observations and experimentation (Oun and Bach, 2014:252). The research method was outlined in the preceding section. This section focuses on the research methodology applied.

1.8.2.1 Research paradigm

All research is based on some underlying philosophical assumptions about what constitutes 'valid' research and which research methods are appropriate for the development of knowledge in a

given study - the selection of research methodology depends on the paradigm that guides the research venture (Antwi and Hamza, 2015:220). The selection of research methodology is determined by the research philosophy the researcher chooses to conform to - this choice informs the research objectives and the research instruments employed as well as the quest for the solution to the problem being investigated (Khaldi, 2017:16). The interpretive paradigm is concerned with understanding the world as it is from the subjective experiences of individuals (Antwi and Hamza, 2015:217). The research philosophy applied is that of interpretivism with an inductive approach, as the intention was to compile the views of the production managers about their lived experiences working with the production shift supervisors. These views were analyzed and interpreted to formulate a verifiable theory to support the Sedibeng Steel Company's decision to upgrade the production shift supervisor role minimum qualification requirements.

1.8.2.2 Research approach

Qualitative research is used when little is known about a topic or phenomenon and when one wants to discover or learn more about it. It is commonly used to understand people's experiences and to express their perspectives (Antwi and Hamza, 2015:220). The qualitative research method examines and answers questions of how, where, what, when, and why a person would act in a certain way toward a specific matter (Oun and Bach, 2014:252). The study followed an inductive approach to answer why the Sedibeng Steel Company upgraded the minimum qualification requirement for the production shift supervisor role. The inductive approach relies on empirically verifying a general conclusion derivable from a finite number of observations. That is, if an event repeats itself enough times, it can be concluded that the event will continue to occur *ceteris paribus* (Adams *et al*., 2014:10). An instrument used to collect data was semi-structured interviews, i.e., standard questions asked in the same manner. The advantage of this type of interview question was that the patterns quickly began to emerge from one interview to another, reaffirming the researcher's choice of research approach.

1.8.2.3 Methodological choice

Researchers choose between inductive and deductive reasoning when they conduct research, e.g., they use inductive reasoning when searching for patterns in the data to generalize their findings to a larger population and when they make inferences as to best explain a phenomenon (Antwi and Hamza, 2015:220). They use meaning-oriented methodologies, such as interviews or

observations, that rely on a subjective relationship between the researcher and the subjects (Antwi and Hamza, 2015:217).

1.8.2.4 Research strategy

Qualitative research uses several methodological approaches based on diverse theoretical principles. It employs a method of data collection and analysis that is non-quantitative, aims toward the exploration of social relations, and describes reality as experienced by the respondents (Adam *et al.,* 2014:6). The research strategy was to collect data from the research participants, formulate a theory based on the findings and generalize it to the applicable population.

1.8.2.5 Time horizon

When the data is collected in one instance, it becomes a snapshot or a fixed image of the phenomenon under study. Data collected in this time horizon manner is cross-sectional (Fernandes et al. 2020:92). One of the exclusions for this research is that both the production manager and the production shift supervisors must be in a position longer than 18 months. This would imply that the participant's responses would, therefore, express what they have observed over that period. Because the interviews were scheduled for a fixed time and done only once, the time horizon for the research is cross-sectional.

1.8.2.6 Study population and sampling

Data collection methods for qualitative research are mostly time-consuming. Individual interviews, for instance, are a process that takes a lot of interaction with the participant. For this reason, researchers using the qualitative method tend to be satisfied with a small sample compared to using any other research method, such as the quantitative method (Oun and Bach, 2014:252). The South African government has recently introduced the Protection of Personal Information Act 4 of 2013 (POPI Act). The purpose of the act is to (POPIA.ORG, 2020):

"Protect the participant's constitutional right to privacy by ensuring that the personal information is safeguarded and fairly used when processing data. It gives the participants the right to be informed on how the information will be processed and, most importantly, that the participant's involvement in the study is voluntary."

The Human Resource Department provided raw data of all the production shift supervisor populations at Sedibeng Steel Company. The data contained a list of production shift supervisors and production managers, their years of service in the organization, operating area, geographical location of the operating area, the highest qualifications and their job grades. The appointment date for the production shift supervisor role was obtained from SAP. The data was processed to consist of only the production shift supervisors and production managers from the Vanderbijlpark site. The data was processed further to categorize facilities according to production units, i.e., coke-making, Ironmaking, and flat steel.

Figure 4(a) represents the production shift supervisors in terms of their average years of experience in the position and the percentage distribution. Only 30% of the production shift supervisors have been in the role for less than 5 years. The rest are five years and above. Figure 4(b) shows the percentage distribution by operating area, revealing that the flat steel operating area constitutes 58% of the Vanderbijlpark production shift supervisor population.

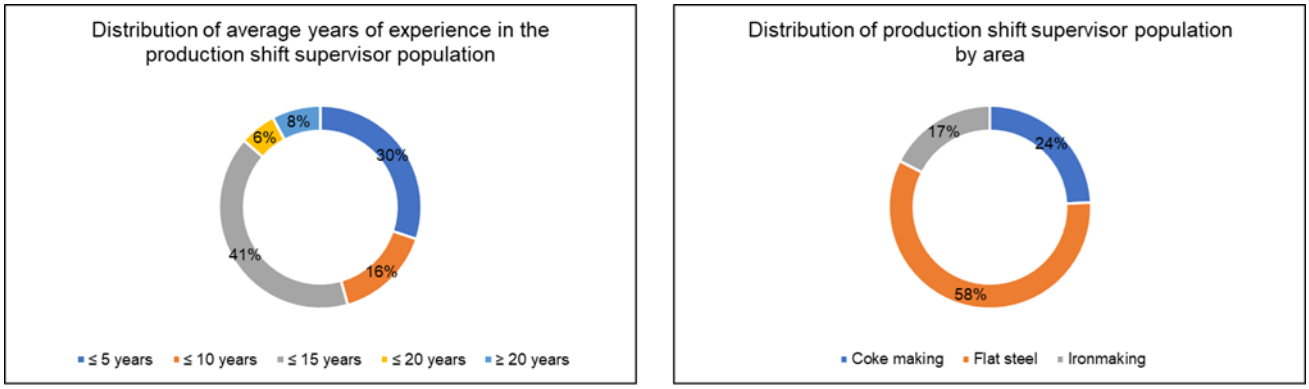
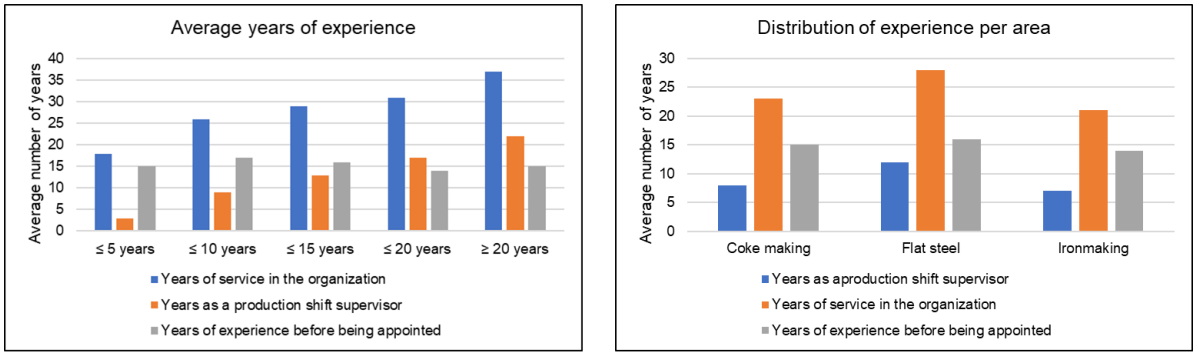


Figure 4: Shows Vanderbijlpark production shift supervisor analysis

The production shift supervisors started as machine operators before being appointed. Figure 5 shows the average years of service in the organization, the average years in the production shift supervisor role, and how long it took them to be appointed. Figure 5(a) shows the production shift supervisor population by average years of experience, and Figure 5(b) shows the same by area.

In both cases, it takes an average of 15 years for a production shift supervisor to be appointed to the role.



(a) (b)

Figure 5: Shows the average number of years before a production shift supervisor is appointed to the role

A similar analysis of the production managers declared them as trustworthy sources. Figure 6(a) shows that 35% of the production managers have been in a position for less than five years, while the rest are five years and more. Flat steel contributes 59% of the production managers' population.

(a) (b)

Figure 6: Shows Vanderbijlpark production manager population analysis

Based on the statistical calculation in section 1.8.1., the minimum sample size required for the study is only four production managers. To make a sample representative of the areas, two

production managers must come from flat steel and one each from coke- and iron-making. Only six production managers agreed to participate in the study. As a result, the sample size obtained is 35% of the population, and they were as follows: 50% flat steel, 33% coke making and 17% Ironmaking. The study had exclusion criteria for the production managers and the production shift supervisors. On the production managers, the exclusion criteria for the study outlined a minimum qualification of a national diploma and at least 18 months in the position. The exclusion criteria for production shift supervisors were that they must be in a position for at least 18 months and must have matric or equivalent; all other qualifications were excluded.

1.8.2.7 Designing the measuring instrument

The research question is if the organization's decision was justified to upgrade the minimum qualification requirement for the production shift supervisor role. What was needed to answer the question was firstly to establish if there were any gaps in the production shift supervisor's performance. Secondly, benchmark with similar companies in the global group to compare the minimum qualification requirements for the production shift supervisor role, and lastly, find answers as to whether the national diploma would address the gap. The questions were structured as follows (Annexure A):

- Demographic questions to ensure that the exclusion criteria were adhered to, also to test the environment in the operation area
- Strengths and weaknesses of the team to draw a correlation with the gaps identified
- Capability scoring to identify gaps
- Probing questions aimed at determining if a national diploma is a solution
- Asked question on whether section 189 and/or technology influence performance
- Asked participants what they thought was the right thing to do

1.8.2.8 Collection of data

The first contact with the participants was through an email sent by a human resources consultant inviting them to participate in the study. The email's contents included the researcher's identity, a short background of the research, anonymity assurance, and the time the interview would take. Attached to the email was a participant consent form (Annexure B) to comply with the POPI Act. The employees were approached during office hours to collect data regarding the nature and

rationale of the research. The respondents were guaranteed that privacy and secrecy of the data and results were in place (Khan, 2014:230). All the interviews were conducted through Microsoft Teams to take advantage of the recording and transcribing functionality and the convenience it brings to both the participants and the interviewer. A field worker was identified and trained on how to handle the interviews. The downloaded transcripts were emailed to the researcher.

1.8.2.9 Statistical analysis

The research study strategy is that of grounded theory. Grounded theorists consider data as evidence of what is happening either in the participant's minds or in the social environment or practices – this strategy does not require the researcher to use any particular theoretical lenses through which to read this evidence (Flick, 2014:145). Thematic analysis is essentially a process of unpacking large volumes of data, arranging it into smaller meaningful sections, and then reassembling them into groupings of concepts and ideas which fit together (Archer, 2018:6)

1.8.2.10 Reliability and validity

Maisiri and Van Dyk (2020:4) applied a systematic method of data analysis, ensuring the rigour of the study findings and its integrity by minimizing the researcher's subjectivity and maintaining neutrality in the data analysis. The participants were carefully selected to meet the required credibility and ensure the correct representation of each operating area, refer to section 1.8.2.6. The sequencing of the interview questions was also used as a safeguard against inconsistencies. The transcripts were sent back to the participants to confirm the contents or make corrections if there was a need to do so. However, there was no response from any. Therefore, it was interpreted as confirmatory.

1.9 ETHICAL CONSIDERATIONS

The research study is based on the minimum qualification requirements for production shift supervisors at Sedibeng Steel Company. The data belongs to the organization. The participants and a field worker are employees of the organization; therefore, they could only attend to the researcher's request during working hours. A request letter was sent to the human resource department representative to obtain permission to conduct the study. Permission was granted (see Annexure C). As a result of sensitivity, the production shift supervisors were excluded as

participants and only the production managers were interviewed because they were not directly affected. The researcher is employed in the same organization as a production manager and intended to conduct the interviews personally. The ethics committee identified him as a risk and subsequently used a field worker for data collection. A consent form was provided to each participant to grant the researcher permission to use the information they provided. This followed the POPI Act.

1.10 CONTRIBUTION OF THE STUDY

1.10.1 Practical contribution

It highlights the importance of supporting evidence when making decisions open to scrutiny or of public interest. All interview participants agree that the decision has more benefits than disadvantages. However, the implementation process did not consider the situation holistically.

1.10.2 Theoretical contribution

The study confirms that the debate between experience and qualifications is subjective to each industry. Experienced employees with a proven track record possess guaranteed knowledge and personality attributes; they can obtain a qualification if willing. A qualified individual has a certified degree or diploma, the personality attributes required for the job cannot be guaranteed, and they have no proven track record. A learning curve is essential if everything else is the same; the only difference is years of work experience and qualifications. An organization that intends to maintain the status quo is better off with experienced people. An organization that wants to grow requires experience and qualifications; these can be found in the same person or achieved by matching individuals who complement one another in terms of experience and qualifications.

1.10.3 Industry contribution

Decisions must be made when necessary. Sedibeng Steel Company identified a skill gap within its ranks and was bold enough to address it. Unfortunately, the losses associated with the skill gap cannot be quantified into rands or dollars. Many organizations are experiencing similar losses and present them as inefficiencies. Sedibeng Steel Company identified a source of their

inefficiencies as a skill gap and took a risk to address it, believing that the benefits would be greater than losses.

1.11 LIMITATIONS OF THE STUDY

The research study was in response to whether the Sedibeng Steel Company's decision to upgrade the junior manager's qualifications to a notional diploma was justified. The junior manager position exists in different functions, e.g., production, maintenance or millwrights. The researcher studied the phenomenon using the production shift supervisor role as a reference group. Only the Vanderbijlpark site's flat steel, ironmaking and coke-making production shift supervisors were considered for the study. The study findings can only be generalized to the entire production shift supervisor population in all Sedibeng sites, Vanderbijlpark, Vereeniging, eMalahleni and Newcastle. However, these findings cannot be generalized to similar companies in the global group. Furthermore, the findings cannot be generalized to any other function or discipline at Sedibeng Steel Company.

1.12 THE LAYOUT OF STUDY

Figure 7 presents the five-chapter mini-dissertation's outline.

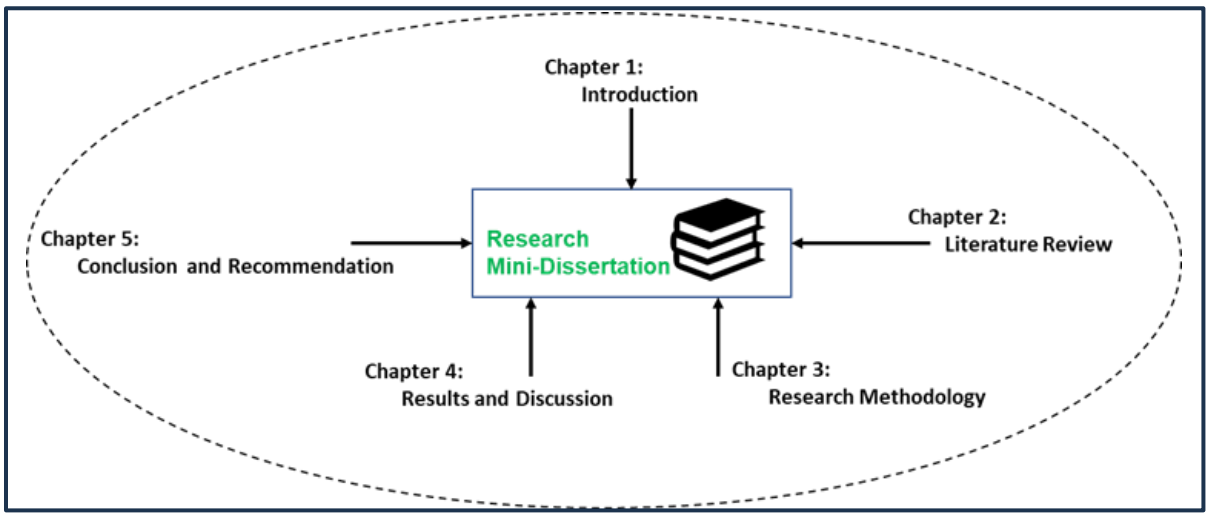


Figure 7: Layout of the study

- Chapter 1 introduces the research study and outlines the definitions and terms
- Chapter 2 presents a detailed literature review
- Chapter 3 presents the research methodology
- Chapter 4 consists of a discussion of the research study results

- Chapter 5 covers the conclusion and recommendations of the research study

In conclusion, two populations have been identified for the study, namely the production managers, the study participants, and the production shift supervisors, the study subject. The interview questions were prepared and asked the same way to all participants. The following four chapters cover the literature review on factors influencing production shift supervisor performance, the research methodology, results and discussion, and the conclusion and recommendations.

CHAPTER 2 LITERATURE: FACTORS THAT MAY INFLUENCE THE PRODUCTION SHIFT SUPERVISOR PERFORMANCE

2.1 INTRODUCTION

The research objectives were developed, and the research methodology was outlined in Chapter 1. Section 1.2 gave a detailed background of the current production shift supervisor's highest qualifications and how they were appointed. Chapter 2 covers the literature review on the factors that play a role in the production shift supervisor performance and could potentially be overcome by introducing a national diploma as a minimum qualification requirement for this position at Sedibeng Steel Company.

According to the World Steel Dynamics 2021 report (cited by AMSA, 2021:33), the steel company is currently lying in the third quartile, i.e., 35th out of 63 companies surveyed, and the ambition is to achieve the 16th spot for both flat and long steel by 2026. The manufacturing industry has shifted its focus from increasing production to improving productivity. This extends to automation, the ability to connect using cyber-physical systems in production processes (Sima *et al*. 2020:2). The responsibilities of a supervisor include problem-solving, fast decision-making, planning and organising materials and papers for production, coordination with other departments and meeting management and solving workers related problems, training new employees and ensuring conformance to personnel policies and other internal regulations (Sreekumar *et al*. 2018:638).

2.2 IMPACT OF INDUSTRIAL REVOLUTIONS ON THE PRODUCTION SUPERVISOR'S ROLE

The human operator used to rely on processes and systems to drive efficiency, productivity, and cost savings. With the fourth industrial revolution, there is an emergence of digital technologies to automate machines and processes, guaranteeing performance measures that could not be achieved in the previous three revolutions (Kaasinen *et al*. 2020:3). The industry is making a generational shift from machine-based assembly lines to "smart factories," using robotics, the Internet of Things (IoT), data analytics, augmented reality (AR), and other cutting-edge technologies (Lindquist, 2023). The advantages of the Industrial Revolution 4.0 are an increase in economic efficiency, labour productivity, flexibility and intelligence, reduction in manufacturing costs, and increasing returns on investments (Sima *et al*. 2020:3). As Artificial Intelligence,

machine learning, IoT, and robotics play a more prominent role in warehouses and factories, there will be less emphasis on physical labour and more on analytical work (Lindquist, 2023). Effective data management is crucial. Accurate, timely data can inform decision-making, identify inefficiencies, and predict trends - however, managing and making sense of vast amounts of data can be challenging; this is where automated data collection and analytics come in, i.e., by automating data collection and using advanced analytics tools, manufacturers can gain valuable insights, make informed decisions, and ultimately boost productivity (Sapot, 2023).

One of the main problems in the steel sector lies in the lack of sufficient information to know what skills companies need and which skills training is suitable for the current needs (Maldonado-Mariscal, 2023:1). Zincume and Jooste (2020:184) in Figure 8 confirm that the supervisory role also known as foreman or team leader has always been about the ability to take instructions in the form of a shift or day plan from management and execute at a required level, the means applied to achieve results have evolved over the years – the role was regarded a necessary bridge between higher management and the employees on the floor. Although most aspects are still relevant, the fourth industrial revolution shifts the focus from people to managing systems that interface humans and equipment.

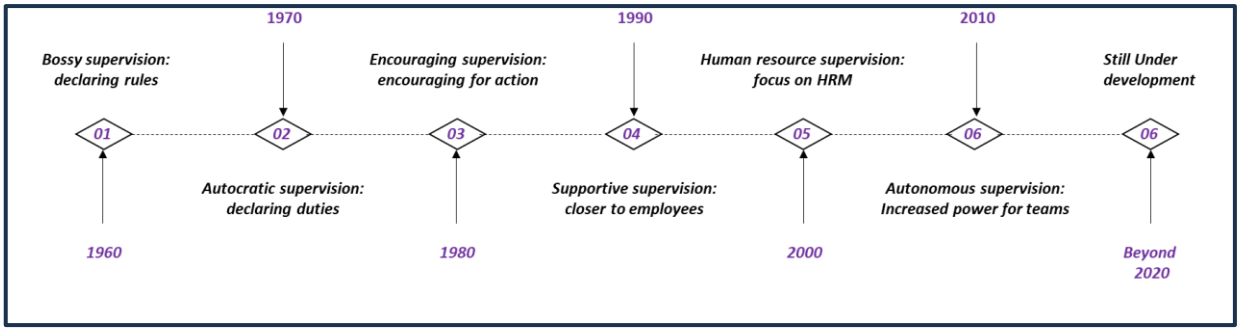


Figure 8 Evolution of the supervisor role

2.3 EFFECT OF EMPLOYEE RETRENCHMENTS ON THE ORGANIZATION

Francas *et al*. (cited by Mendes and Machado, 2015:2) noted efficient use of resources as a major concern due to a sharp decline in capacity usage, especially in capital-intensive industries. The efficient use of resources may be a significant source of advantage. The construction industry, infrastructure development, automotive sector, oil and gas sector, and consumer durables drive the demand for steel (Elearnmarkets, 2022). The steel industry is extremely sensitive to inflation

because they carry high fixed cost; therefore, survival depends on the ability to remain profitable during the economic downturn (Princeton University, 2015:141). Organizations like Sedibeng Steel Company are constantly pursuing opportunities that minimise production costs, especially during the lowest peak in the economic cycle. The reasons for retrenchments in organizations vary from improving productivity, economic outlook strategies, and overall competitiveness; the perception is that these are the only existing options to save companies from bankruptcy (Mujtaba and Senathip, 2020:210). Retrenchment is one of the turn-around strategies organisations adopt; the process entails downsizing to reduce expenditure or restructure the business to become more financially solvent (Simiyu and Auka, 2018:126).

Ochurub *et al*. (2022:776) conducted a study on the impact of retrenchment at WordPress Namibia Limited and found that the retrenchment process resulted in increased workload, extended working hours, fewer leave days, and employee burnout. Duncan *et al*. (2013:12) found that the loyalty of employees, especially towards their managers, is greatly affected by the retrenchment process. Dibua *et al*. (2018:131) reported that restructuring of work has a direct and positive relationship with employees' service delivery, i.e., an increase in the restructuring of work will bring about a 286.6% increase in employees' service delivery.

2.4 QUALIFICATIONS AND EXPERIENCE

It is estimated that Industry 4.0 and the gradual digitization of manufacturing will significantly affect human resources and their positions in companies. This implies that Industry 4.0 would lead to a considerable decrease in standardized work tasks with low qualification needs and to an increase in the tasks that require a high level of qualification (Kucharčíková *et al.*, 2021:2). As the world is experiencing digital transformation in Industry 4.0, we are experiencing a paradigm shift that has profound implications for the workforce and will affect strategy, talent, innovation, and business models (Li, 2022:10). Skills and competencies attributed to 4IR include communication (skills), innovation, creativity, problem-solving, collaboration, critical thinking, and decision making (Chaka, 2020:23).

Traditional roles in production will disappear, and new ones will emerge. These new jobs will require employees to acquire new skills, especially digital ones - Industry 4.0 needs Education 4.0. to meet the needs of the economy in the future, Education 4.0 must be viewed from a four-

dimensional perspective: vocational education, entrepreneurial education, financial education, and digital education (Sima *et al*. 2020:20). According to Fisher (2020:2), there is room for both theory and practice, and it appears that the optimum situation is when both co-exist. Ratnawati *et al.* (2020:110) define work experience as a skill or knowledge owned and controlled by an employee for several periods. They further claim that the higher the work experience, the higher the employee's performance - conversely, the lower the work experience, the lower the employee's performance.

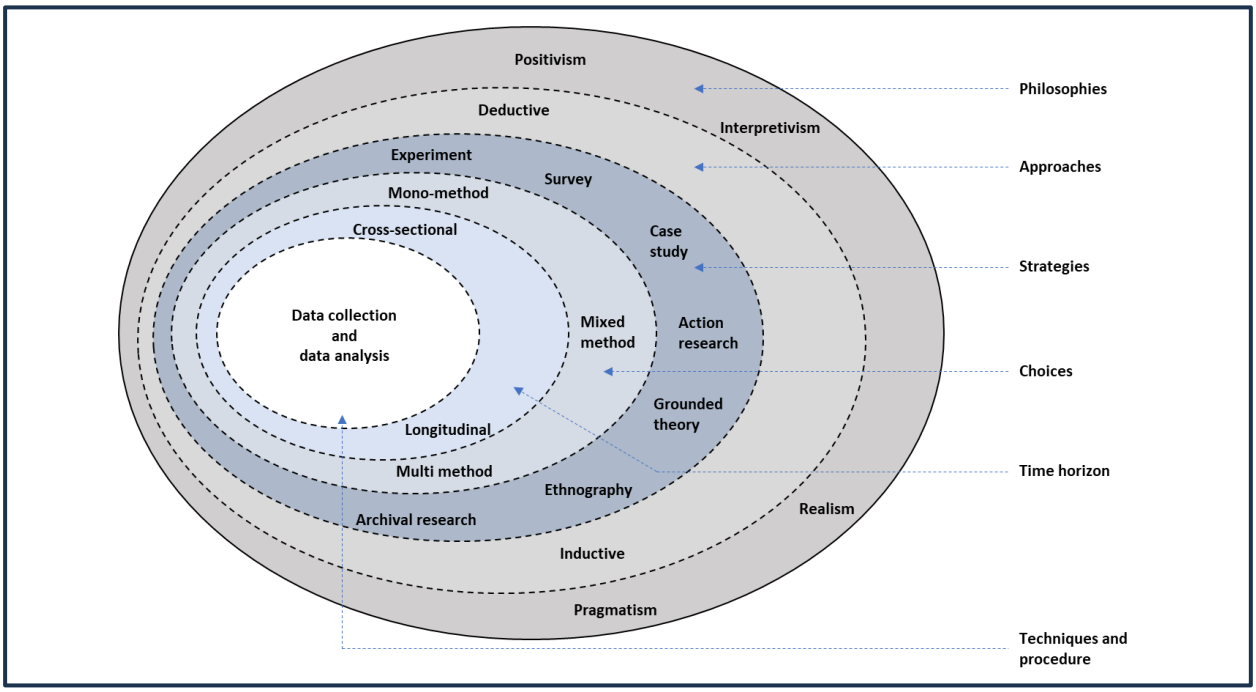
In conclusion, for Sedibeng Steel Company to achieve their goals of being among the world's best steel producers, they need to keep up with technological developments. There is a 4IR-induced shift in how the manufacturing industry operates. The Sedibeng Steel Company needs to upgrade their facilities to keep up with changes, while they focus on upgrading their workforce’s skills. An educational background plays a critical role in navigating the dynamics of technological developments.

CHAPTER 3 RESEARCH METHODOLOGY

The previous two chapters discussed the current production shift supervisors at Sedibeng Steel Company, the problem statement, research objectives and where the organization wants to be. Chapter 2 highlighted the main factors that influence the performance of the production shift supervisor and what the future holds for the manufacturing industry. This chapter discusses the methodological process followed to achieve the research objectives and addresses the research question.

3.1 Methodology

Mackenzie and Knipe (2006) state that paradigms determine which methodology (qualitative/quantitative or mixed), and data collection is most suitable for research. Kuhn (1962) said that throughout the research, the researchers remain within a paradigm in which they are chosen (as cited by Tharsika and Pratheepkanth, 2020:302). The research process is described metaphorically by Saunders *et al* (2009) as a research onion (Figure 9). The process entails peeling away the outer layers before reaching the core, i.e., data collection and data analysis (Mayer, 2015:53). Tharsika and Pratheepkanth (2020:301) summarized the main paradigms in Table 4, its relevance is to help navigate decisions on options available in each layer.



Source: Saunders, Lewis and Thornhill, 2009,(Cited by Mayer, 2015)

Figure 9 Research onion

Table 1: Summary of the main paradigms

	Positivism	Constructivism/ interpretivism	Transformative	Pragmatism
Ontology	The reality is objective, perceived, external, independent and ordered; Universal true reality, for instance, researchers reject or fail to reject hypotheses.	Reality is subjective, complex, and socially constructed through culture and language; Reality is socially or experimentally based, local, and specific in nature.	Reality is complex and nominal, Socially constructed through political power relations; The realities are dominated and silenced by others.	Reality is complex, external and it is the practical consequence of ideas; Pluralist.
Epistemology	Data, and evidence shape knowledge. For instance, the researcher objectively collects data on instruments based on measures completed by observations recorded, thus developing numeric measures of observations; Measurable facts Law that needs to be tested, verified, and refined.	The knowledge consists of mental structures surrounded by relative agreements; Theories and concepts too simplistic; Focus on narratives, stories, perceptions and interpretations; New understandings and worldviews as contribution and collaboration (e.g. researchers actively involve participants as collaborators).	Knowledge and truth are decided by dominant ideologies and intertwined with political agenda	Focus on problems, practical applied research, integrating different perspectives to help interpret the data.
Research methods	Deductive approach: Highly structured and large samples, measurement; Quantitative methods of analysis, but a range of data can be analyzed.	Inductive approach; Small samples, in-depth investigations; Qualitative methods of analysis, but a range of data can be interpreted.	Deconstructive reading texts and realities against themselves; Range of data types, typically qualitative methods of analysis	Range of methods: mixed, quantitative, multiple, qualitative, action research

Source: Tharsika, and Pratheepkanth (2020)

3.1.1 Layer (I) - Philosophy

The first layer consists of four philosophies: positivism, realism, pragmatism and interpretivism. The latter is concerned with in-depth variables and factors related to a context. It considers humans as different from physical phenomena as they create further depth in meanings with the assumption that human beings cannot be explored in a similar way to physical phenomena (Alharahsheh and Pius, 2020:41). This research study seeks to unpack unexplained decision by Sedibeng steel company's executive management to upgrade the minimum qualifications requirements for the production shift supervisor role. A decision cannot be measured. However, factors that led to it can be identified, investigated and tested for validity. The philosophical choice dictates the ontology, oncology, epistemology and research methods (Table 1). The research study does not intend to change the decision. It only seeks to find empirical evidence that can explain the thought process which led to a conclusion that presented itself as a decision.

3.1.2 Layer (II) - Approach

In any research, two styles of reasoning exist. The two approaches to scientific enquiry are inductivism and deductivism. The inductive research approach relies on the empirical verification of a general conclusion (Adams *et al*. 2014:10,11). The theory formulation led to the study's conclusion depending on participants' experiences, representing their truth or perceptions about the topic. A total of six participants were interviewed, and a theory was formulated based on their emerging response patterns.

The ontology of this approach leaned towards inductivism because the theory formulation process started with a relatively large volume of information and was truncated into constructs that can be verified. Table 2 confirms this study approach by contrasting the deductive and inductive research approaches. The study did not test any existing theories.

Table 2: A contrast between qualitative and quantitative methods

	Quantitative	Qualitative
Principal orientation to the role of theory concerning research	Deductive: testing theory	Inductive: generation of theory
Epistemological orientation	Natural science model, in particular, positivism	Interpretivism
Ontological orientation	Objectivism	Constructivism

Source: Bryman and Bell, (Cited by Mayer, 2015)

3.1.3 Layer (III) - Strategy

According to Khan (2014:227), grounded theory is not a theory but a strategy. It is defined as a research strategy whose purpose is to generate theory from data. The study developed theoretical concepts based on empirical data collected from the participants. Therefore, it is grounded in inductively generated data.

3.1.4 Layer (IV) – Methodological choice

Quantitative and qualitative are opposite ends of the continuum, i.e., on one end, more objective or positivist paradigm is represented by quantitative methodology - in contrast, the other end of the continuum, which is more subjective or constructivism or interpretive paradigm underpins qualitative methodology, in the middle of the continuum lies a mixed-method which is more transformative and pragmatic because it incorporates both quantitative and qualitative methodologies (Tharsika, and Pratheepkanth, 2020:303). The methodological approach of the research study was a clear-cut mono-method because it did not involve measurements. The scoring question in the interview questions was merely a tool to capture the difference in participants' responses. The scores obtained were a convenient technique to capture the responses to present the results.

3.1.5 Layer (V) – Time horizon

Saunders and Tosey (2013:59) describe a "snapshot" or cross-sectional time horizon as a way to answer a question or address a problem at a particular time. They represent a longitudinal time horizon as a way to answer the question or address the problem by collecting data over an extended period. The study's exclusion criteria required that both participants be in the position

for at least 18 months. This meant the participants would share their experience with the production shift supervisors for the same period. Because the interview was conducted in one instance, the time horizon is categorized as cross-sectional.

3.1.6 Layer (VI) – Technique and procedure

3.1.6.1 Sampling method

Quota sampling is a type of purposive sampling because the method entails how many participants to include in the study (Mack *et al*. 2005:5). The sample was carefully studied to ensure it accurately represents the population (as presented in section 1.8.2.6). Three operating areas were selected for the study, and a representative sample was drawn using quota sampling.

3.1.6.2 Participant recruitment

The study investigates employees of the Sedibeng Steel Company. Therefore, all participants are the organization's employees. Firstly, permission to conduct the study was sought and granted. The permission included an arrangement to access the participant through the human resources department. Due to the study's sensitive nature, the researcher could not use the study subjects as participants. The best option was to substitute the study subjects by their managers. One of the steps to answering the research question was to determine if there were any skills gaps in the performance of the production shift supervisors. The production managers were identified as best placed to reflect on the production shift supervisor's performance. Furthermore, the success of production managers depends on the production shift supervisor's performance.

The Human Resource Department was requested to provide data on the production managers and production shift supervisors. The data provided included the population sizes, qualifications, appointment dates, years of service in the organization and the operating areas they belonged to. After developing the exclusion criteria, the data were processed to determine the required sample size. The researcher drafted an email to invite the participants and forwarded it to the human resources consultant to send to nine identified participants, although the study only required a minimum of four. Included in the invitation was a participant consent form. Only 70% of the participants responded positively.

3.1.6.3 Data collection method

Interviews

A field worker was appointed, familiarized with the research study and trained on how to conduct the interviews. All participants were contacted by the human resources consultant to allow them to express a suitable time for interviews. The interviews were scheduled on Microsoft Teams to take advantage of the application's recording and transcribing functionalities. A set of structured interview questions were prepared and asked similarly. The transcripts and recordings were downloaded and sent to the researcher.

Benchmarking

The contact details of the human resources departments of sister companies in the global group i.e., Gent in Belgium, Tubarão in Brazil and Fos-sur-Mer in France, were requested from Sedibeng Steel Company's Human Resources Department. Each company was contacted via email. The email also contained the agenda. A meeting was arranged and scheduled on Microsoft Teams. The data was documented in a notebook and later processed. Table 3 highlights the identified companies' similarities to Sedibeng Steel Company.

Table 3: Selected global sister companies for benchmarking

Country		South Africa	France	Belgium	Brazil
Production facilities	**Area**	**Steel Company**	**Fos-sur-Mer**	**Gent**	**Tubarão**
Sinter Plant	Ironmaking	X	X	X	X
Blast Furnace		X	X	X	X
Coke Plant	Coke making	X	X	X	X
BOF Plant	Flat steel	X	X	X	X
Casting		X	X	X	X
Hot Strip Mill		X	X	X	X
Finishing lines		X	X	X	X

Source: developed by author

3.1.6.4 Data analysis

The research study strategy is that of grounded theory. The transcripts were studied for understanding and identifying patterns in the participant's responses. The statements from the participants were unpacked and presented as a list of codes. The number of times each code was mentioned during the interview was recorded. Each code was captured only once and the number of times it appeared was recorded as a frequency. Each code and the associated frequency were assigned to categories (Annexure D). A sum of all frequencies was determined using Microsoft excel spreadsheet. The frequency of each category was divided by the sum of all frequencies to determine the strength of a view concerning others. The strength of each category was graphically presented to show their relative importance. The related categories were further lumped together to form themes. The frequencies of all categories falling under one theme were added together and assigned to a theme. Similarly, a sum of all frequencies from each theme was determined using Microsoft excel spreadsheet. The frequency of theme was divided by the sum of all frequencies to determine the strength of a view concerning others. The strength of each theme was graphically presented to show their relative importance.

CHAPTER 4 RESULTS DISCUSSION

The results are presented in two parts: firstly, the outcome of the investigation on whether there is the existence of a skills gap in the current production shift supervisor population, and secondly, whether the introduction of a national diploma as a minimum qualification requirement for the production shift supervisor role has a potential to close the skills gaps identified. Furthermore, an attempt was made to benchmark the production shift supervisor role at Sedibeng Steel Company with that of the global sister companies.

4.1 SKILLS GAP

Table 4 shows an extract developed to assess if there was a skills gap among the production shift supervisors. Seven key performance areas were taken from the production shift supervisor job advertisements in the past five years. The participants (Annexure E) were asked to rate the average performance of their teams on a scale of one to ten. The results are presented in Figure 10, and they confirm the existence of a skills gap.

Each operating area was plotted separately and compared to the average of all three plants. The key performance areas, technical understanding of maintenance, technical understanding of the process and computer literacy, were rated high in the flatsteel area compared to ironmaking and coke-making operating areas. Safety management and computer literacy were rated the least in ironmaking and coke-making areas. What is essential from the results is that, in general, the production shift supervisors perform either below average on three out of four key performance areas. In the areas where they are doing well, it's because of one area out of three scoring high and pushing the overall average performance higher.

Table 4: Production shift supervisor performance measurement criteria

Key performance area	Guidelines to consider
Safety management	Incident investigation, Enforcement of safe work procedure, Leadership behavioural interactions, housekeeping, visibly felt leadership, task observation, safety meetings, SHE rep inspections, statutory compliance
Training & Development	Ensure training and licenses are valid, Individual development program, production learners, Succession planning, cross-pollination of skills
Quality & Environment	Quality and environment management systems, Handling of quality audits, handling of environmental audits
People management	Leadership skills, conflict resolution, enforce discipline, command respect, human resources management, team performance
Technical understanding of the process	Process parameter management, root cause analysis, short-loops, process improvement, clearly express process challenges
Technical understanding of maintenance	Equipment specs, Functional failure, equipment commissioning, project management, signing off the equipment after repair, inspections
Computer literacy	SAP, Time & Attendance system, E-doc system, Pivot/WorkSafe, Aspen, S-Drive, portal, SMART system

Source: Developed by author

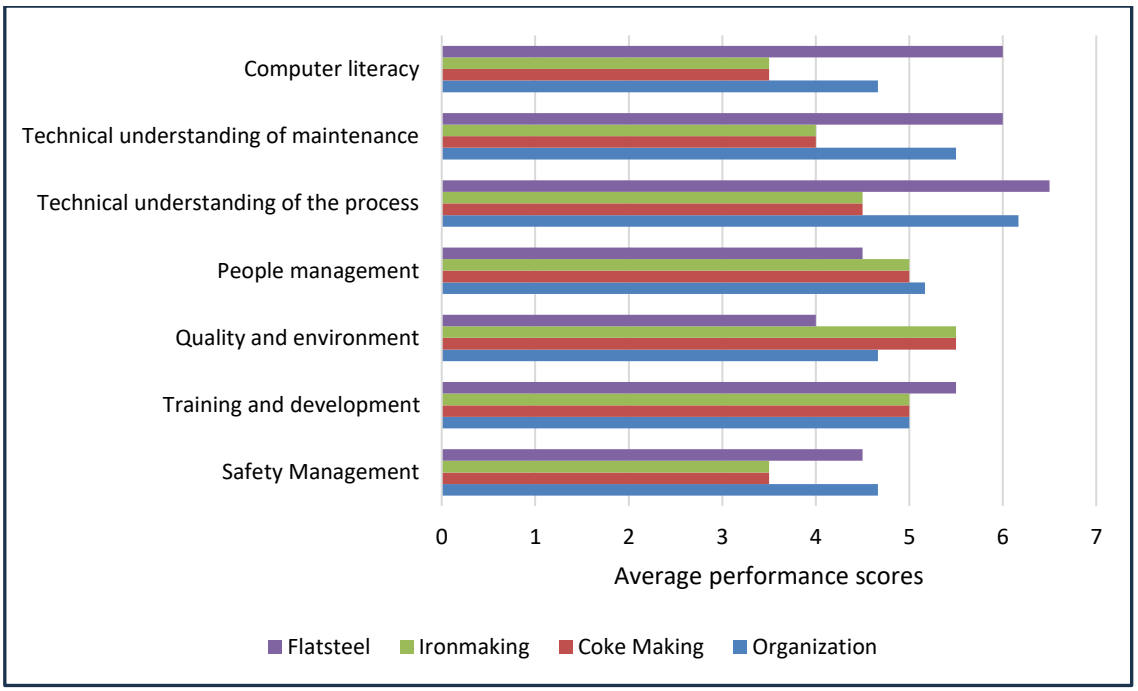


Figure 10: Presentation of production shift supervisor performance

Highly qualified human capital ensures the strong competitiveness of companies. By investing in human capital, a company increases the knowledge, skills and abilities of its employees, who can make the production of the company more efficient and generate profit (Kucharčíková *et al.*, 2021: 1). According to Memon *et al.* (2009:4182), human capital is an essential element of competitive advantage in most organizations, such as the competencies people possess including various skills, education, experience, potential, and capacity - it is believed that if an organization understand the contribution of its human capital to success, it is in a better position to manage them effectively. The most concerning part of the results is computer literacy, which at this stage is an essential functioning skill or, simply put, using internal systems on the intranet, Microsoft Office, viewing plant performance trends and responding to process malfunction alarms.

Participant 1 showed how the production shift supervisors struggle to capture plant task observations (PTO) on the internal webpage. They capture it one at a time, he attributed this to the age. Some are in their late 50s, and they take up to one hour or two hours to complete a typical shift report. The shift from machine-based operation to digitization requires an above-average digital literacy. The production shift supervisor's lack of basic computer skills threatens Sedibeng Steel Company's chances of developing their facilities into modern plants. Participant

3 asserts that the organization needs to be competitive in the market, and the current challenge experienced is a lack of development in its workforce. The organization needs to develop employees and give them the required skills. Participant 6 emphasized the issue of lack of development by referring to the fact that the organization still has the legacy process controllers (machine operators) with Grade 4 or Grade 7 as the highest grade passed in the basic education system still operating equipment in the control rooms and only few would have matric.

The entry requirement of matric for production learners was only introduced about 15 to 20 years ago at most. According to Participant 2, many employees who have got matric and went through the production learnership program that are exceptionally intelligent individuals but are still at lower job grading could have quite a reasonable success rate in becoming production shift supervisors. Figure 5(a) shows that the production shift supervisors with the least years of service in the organization have been employed by the organization for an average of 15 years or more. This indicates that, when they were appointed in the production shift supervisor role, they were amongst the best in a pool full of employees without matric. Participant 2 was very despondent about one or two of the current production shift supervisors. He was quoted saying:

"*From what I'm seeing currently in my plant is that ….let's say one or two of the individuals that I'm sitting with……is that I don't think it's within their capability to really achieve the expectation of the production shift supervisor role which might have been an error, management error on our side, but it's difficult.*"

Participant 5 was also quoted: "*I think they are coping with the work; I am not always so sure that they have knowledge of what to do or to do their work correctly, some of them.*"

4.2 BENEFITS OF NATIONAL DIPLOMA AS A MINIMUM REQUIREMENT

The participants' transcripts were coded and categorized (Annexure D), and nine themes (Figure 11) were established. It is evident from the participant's responses that the introduction of a national diploma for production shift supervisors promises positive prospects. Figure 12 shows more details of which dimensions were measured.

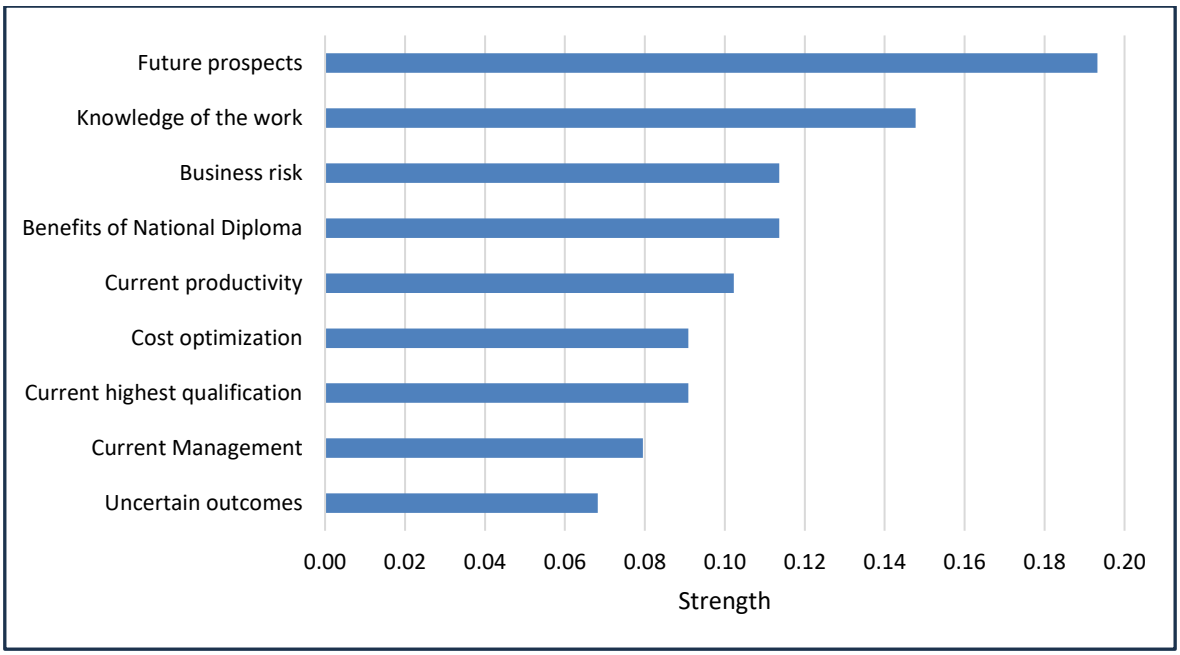


Figure 11: Study themes adopted

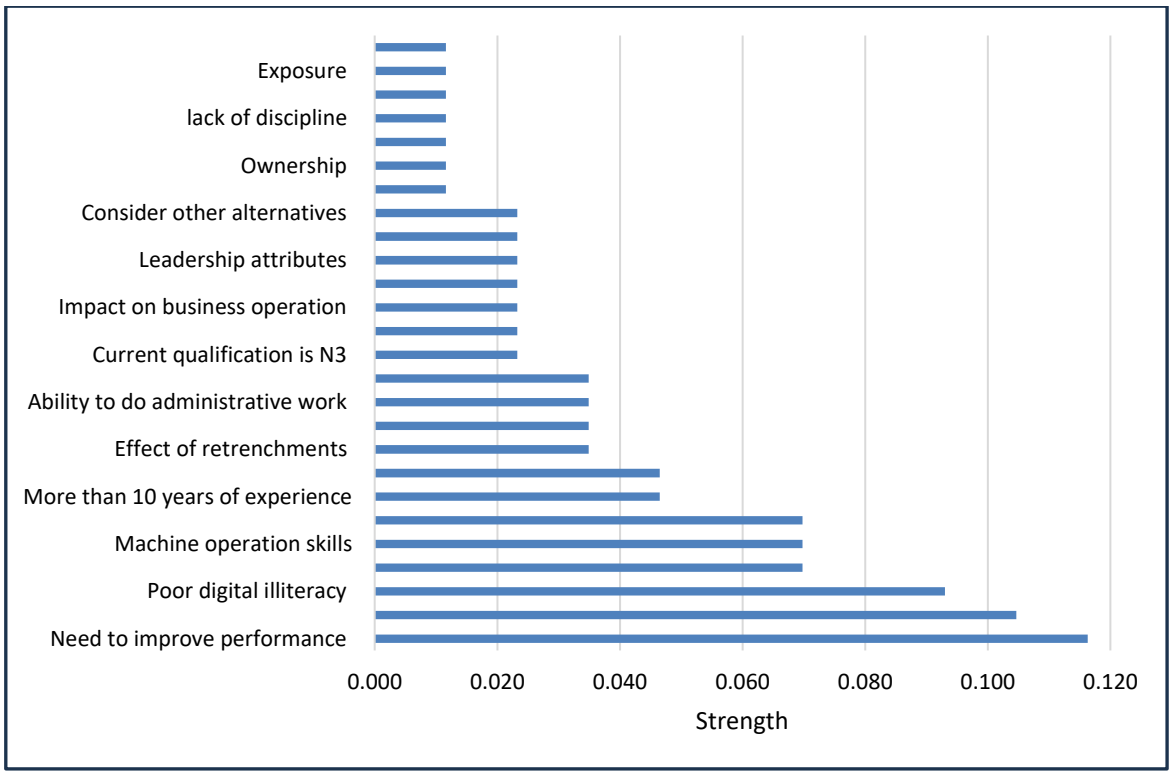


Figure 12: Study categories adopted

All participants were unanimous about a need for improvement in the current production shift supervisor population. Digital literacy, which correlates directly with future prospects, can be attributed to the level of comprehension an individual has. Digital literacy is slowly becoming comparable to medium of instruction, and it will soon be required for survival. However, it is not yet incorporated into basic needs. Participant 4 alluded to the fact that one's educational background, the ability to read on your own and keep yourself updated, is key because people need to research certain issues or topics in the background. According to Participant 4, it would work mostly in terms of the administrative and technical aspects, and the national diploma graduates catch on to the concepts quicker. They have a very short learning curve, which will help a lot in adapting to technology from now on. Participant 5 welcomes the decision as a brilliant idea but recommends that much thought must be put into how it can be implemented without causing instabilities in the operation of the plant. The top four dimensions based on the strength determined by how frequently they emerged during the interviews are discussed below.

4.2.1 Future prospects

Participant 3 believes that change is inevitable. Today's time is no longer the same as 20 years ago when organizations would employ 18-year-olds and get a return on investment 35 years later when they have acquired extensive years of experience. Participant 4 claims that as much as experience is necessary, technically qualified individuals can cover it because of their steep learning curve. Participant 6 attributes the appointment of undeserving individuals into positions to a larger number of employees without qualifications in the organization. A lack of skills and capabilities sets the organization back and leads to frustration and unhappiness for all involved.

Participant 2 feels that there is a high volume of information in circulation that some of the production shift supervisors are unable to grasp, and this is one of the reasons why it is necessary to appoint individuals possessing national diploma qualifications in the role – they are better tasked to identify trends and act accordingly. Participant 6 referred to Sasol, a South African petroleum company with a similar historical background as Sedibeng Steel Company, but they are far ahead. They have their challenges, but if you make a comparison, they have consistently adapted to the change, which is why they are in a better position regarding skills, i.e., they employ process engineer to operate their equipment. The future prospects are discussed in the context of addressing the skills gap. All the referenced participants agree on the existence of the skills

gap and are positive about the future due to the implementation of a national diploma as a minimum requirement for the production shift supervisor role.

4.2.2 Knowledge of the work

According to Participant 6, production shift supervisors are very instrumental in locating an equipment and the knowledge of how it functions, and this is based on what they have seen for many years – this is how the value of experience is derived. However, if there is, for example, a breakdown or equipment malfunctions, they are not able to identify the contributing factors (such as incorrectly operating a machine). He attributes this to a lack of basic theoretical knowledge of how the equipment works or a lack of knowledge of the process parameters. They have limited knowledge, and this manifests as capability problems. Conversely, participant 1 believes that since all machine operators have years of experience in the plant, they have a better understanding of the process. He, however, understands that the quality of their decision-making is not up to standard. They do not understand why certain decisions are made. In some processes, a single wrong decision could take up to 20 hours of production time to recover from. Individuals with a national diploma are much better at grasping concepts without having to work for ten years in the same position. These two contrasting views lead back to a dilemma of qualifications and experience, whether knowledge is a function of education or experience.

4.2.3 Business risk

Decisions such as introducing a national diploma as a minimum qualification requirement for production shift supervisors bear risks because of their long-term effects. Participant 5 warns that the organization needs to ensure prospective candidates understand what becoming a production shift supervisor means. He asserts that an individual with a national diploma in engineering aspires to work as a technical person. Participant 2 referenced his role in the organization's mentorship program, where he interacts extensively with young engineers and technicians. He is concerned that not a lot of them have the aptitude or ability to manage people or have an interest in managing people. Participant 5 insists that the prospective candidates must actually understand what the job requires because a production shift supervisor is a special kind of human being, and qualification does not automatically turn a person into one.

Participant 3 believes that the risk can be mitigated. He says the problem lies with appointing production shift supervisors and letting them figure out what the role entails without supporting

them. With support, he refers to involving the human resources department and putting them through leadership programs. Participant 2 had a similar view regarding developing internal employees, which applies to all prospective candidates. He said that it's not enough to appoint employees in leadership positions based on opinions. They must undergo psychometric analysis to assess if they have a personality attributes profile suitable for the role.

Another risk highlighted by Participant 2 is that the organization will have high turnover. Currently, the organization has production shift supervisors with up to 25 years of experience. With the introduction of a national diploma as a minimum requirement for the production shift supervisor role, the organization will be adding to a high turnover challenge they are currently struggling with on the engineers and technicians. He asserts that the national diploma graduates have prospects of finding employment opportunities from others.

4.3 BENCHMARKING

Interactions between the researcher and benchmark companies did not go as expected due to the written and spoken language barrier. In South Africa, the communication medium in a corporate environment is English, but in Brazil, they use Portuguese. In Belgium, Dutch is used, while in France, they communicate exclusively in French. The other factor that made communication difficult was the difference in the organizational structure and the difference in position titles. The education systems are also different. Grade 12 (formally matric) is also labelled differently in each country. The discussions were superficial. It wasn't easy to extract useful information that could add value to the research study. The best that came out of the discussions is documented below.

4.3.1 Tubarão – Brazil

According to Tubarão Human Resources Department, they are ahead of Sedibeng Steel Company in terms of introducing a tertiary qualification as a minimum requirement for the production shift supervisor. Their equivalent position is a foreman. They apply a dual approach, first identifying talent from their technicians and engineers. The criteria they use are personal attributes for a leadership position because technical skills are standardized as a requirement. Once candidates are identified, they invest in training and development to prepare them for the role.

4.3.2 Gent in Belgium and Fos-sur-Mer in France

Gent and Fos-sur-Mer apply the same practice the Sedibeng Steel Company is currently moving away from. The equivalent positions are a team leader and head of shift for Gent and Fos-sur-Mer. The difference between these companies and Sedibeng Steel Company is that they have an active succession planning program. The talent is identified and informed, and the expectations are laid out and monitored. Sedibeng Steel Company also have a great succession planning document; however, it is not implemented satisfactorily.

In conclusion, the study confirmed the existence of a skills gap. It was also revealed that the three operating areas identified have varying degrees of skills gaps. However, the overall performance was generally below 50% of the expected performance. Nine themes were developed, and the positive future prospects as a result of the introduction of a national diploma as a minimum qualification requirement for the production shift supervisor role are envisaged by all participants. The uncertainty of whether introducing a national diploma as a minimum requirement was rated the lowest of all nine themes. Benchmarking with the global sister companies did not yield the level of depth anticipated due to constraints encountered. However, Tubarão in Brazil is the only company to require a tertiary qualification as a minimum qualification for the production shift supervisor role. The next chapter wraps up the study with a conclusion and recommendations.

CHAPTER 5 CONCLUSION AND RECOMMENDATIONS

The research study sought to answer the question of whether the organization was justified in introducing a national diploma as a minimum qualification requirement for a production shift supervisor role. Based on the skills gap identified and the participants' view about the performance of the current production shift supervisors, the organization's decision to introduce a national diploma as a minimum qualification requirement for the production shift supervisor role is justified. However, there were concerns about whether the national diploma qualification would address the people management capability challenge that the current production shift supervisors generally struggle with. Most participants recommended training and conceded that people management skills are mostly dependent on the individual's personal attributes. The following conclusions were made:

- The skills gaps were identified with significant concerns on computer literacy particularly because of the risk of hindering the exploitation of the fourth industrial revolution.
- All participants unanimously agree that there is a need for intervention on the production shift supervisor's performance.
- They had different views on how the skills gap could be addressed. Some believe internal talent within the production function should be developed, while others suggested that the millwrights should be considered for the production shift supervisor role.
- All participants welcome a decision by executive management to introduce a national diploma as a minimum qualification requirement for a production shift supervisor role.
- They, however, have concerns that the national diploma graduates would not be able to cope with the people management key performance area, and they are prone to add to the staff turnover.
- On the issue of experience versus qualification, some participants feel the lack of experience could work against the organization's competitive advantage. Others feel it could be mitigated by putting the prospective candidates through leadership programs.
- The participants noted technical ability, digital literacy and learnability as benefits of introducing a national diploma as a minimum requirement for the production shift supervisor role.
- Furthermore, the participants were concerned with the implementation process, particularly the risk of business interruption.
- Regarding benchmarking, Gent in Belgium and Fos-sur-Mer in France also have high school completion certificates as a minimum qualification requirement for the role equivalent to the production shift supervisor.

- Only Tubarão in Brazil has tertiary institution qualification as a minimum qualification requirement.

It is recommended that another benchmark study be launched to determine how Tubarão implemented a national diploma as a minimum qualification for the production shift supervisor role. The focus must be on how they helped the production shift supervisors cope with the people management key performance area. Secondly, a study could focus on how Gent in Belgium and Fos-sur-Mer in France operate their facilities successfully without needing tertiary qualification as a minimum requirement for a production shift supervisor role.

REFERENCES

Adams, J., Khan, H.T.A. & Raeside, R. 2014. *Research methods for business and social science students.* 2nd ed. London: Sage.

Adriaan Attorneys. 2022. *The section 189 retrenchment process in terms of the labor relations act*. https://adriaansattorneys.com/the-section-189-retrenchment-process-in-terms-of-the-labour-relations-act/#:~:text=Section%20189(1)%20of%20the,be%20affected%20by%20the%20retrenchment Date of access: 15 Oct. 2022.

Alexander, R. 2021. *The Fourth Industrial Revolution and National Innovation Systems: Key Concepts and Snapshot of South Africa*. (SARChI Industrial Development Working Paper Series WP 2021-8a). https://www.uj.ac.za/wp-content/uploads/2021/10/sarchi-wp-2021-8a-alexander-september.pdf Date of access: 28 Oct. 2023.

Alharahsheh, H.H. & Abraham Pius, A. 2020. A Review of key paradigms: positivism VS interpretivism. *Global Academic Journal of Humanitarian Social Sci*ences 2(3):39-43.

AMSA. 2021. *Integrated report 2020*. ArcelorMittal IR 2020_HR.pdf (arcelormittalsa.com) Date of access: 10 Jan. 2023.

AMSA 2022. *Integrated report 2021*. 2021_Integrated_Annual_Report_1.pdf (arcelormittalsa.com) Date of access: 10 Jan. 2023.

AMSA. 2023. *Integrated report 2022*. 2022 Integrated Annual Report.pdf (arcelormittalsa.com) Date of access: 4 Apr. 2023.

Antwi, S.K. & Hamza, H. 2015. Qualitative and quantitative research paradigms in business. *European Journal of Business and Management,* 7(3):123-134.

Archer, E. 2018. Qualitative data analysis: A primer on core practices. In S. Kramer, S. Laher, A. Fynn, & H. Jansen van Vuuren (Eds). *Online reading research methods*. Johannesburg: Psychological Society of South Africa. DOI: https://DOI.org/10.17605/0sf.10/BNPFS

Chaka, C. 2020. Skills, Competencies and Literacies Attributed to 4IR/Industry 4.0: Scoping Review. *IFLA Journal*, 46(4):369-399. DOI: https://doi.org/10.1177/0340035219896376

Dibua, E., Idemobi, E.I. & Okoli, I.M. 2018. Effect of Retrenchment on Employees' Service Delivery: A Study of Ten Districts of Enugu Electricity Distribution Company (EEDC). *Southeast Nigerian European Scientific Journal*, 14(13). DOI: https://10.19044/esj.2018.v14n13p121

Duncan, N.N, Sakwa, M. & Kiriago, A.N. 2013. Effects of retrenchment on the motivation and loyalty of surviving employees of Telkom Kenya Limited. *International Journal of Academic Research in Business and Social Sciences*: 3(9). DOI: https://10.6007/IJARBSS/v3-i9/185

Elearnmarkets. 2022. *The growth and investment opportunity in the steel industry*. https://www.elearnmarkets.com/blog/growth-and-investment-in-steel-industry/#:~:text=Growing%20demand%20in%20the%20construction,the%20growth%20of%20steel%20industry Date of access: 27 Mar. 2023.

Fernandes, J., Machado, C.F. & Amaral, L. 2020. *Methodology used for determination of critical success factors in adopting the new general data protection in higher education institutions*. *Research Methodology in Management and Industrial Engineering*. DOI: https://doi.or/10.1007/978-3-030- 40896-1

Fisher, E. 2020. Qualifications and Certificates v Practical Knowledge and Experience: Is There a Winner? *Business and Economic Research:*10(1) DOI: 10.5296/ber.v10i2.16520

Flick, U. 2014. *The SAGE handbook of qualitative data analysis*. London: Sage. DOI: https://doi.org/10.4135/9781446282243 Date of access: 3 Apr. 2023.

González, Y.S. 2020. Qualifications and certificates v practical knowledge and experience: is there a winner? *Business and Economic Research*. 4(1). DOI: https://doi.org/10.5296/ber.v10i2.16520

Graue, C. 2015. Qualitative research with a focus on qualitative data analysis. *Journal of Sale, Retailing, and Marketing,*4(9):5-13.

Kaasinen,E., Schmalfuß, F., Özturk, C., Aromaa, S., Boubekeur, M., Heilala, J., … Walter, T. 2020. Empowering and engaging industrial workers with Operator 4.0 solutions. *Computers & Industrial Engineering*. DOI: https://doi.org/10.1016/j.cie.2019.01.052

Khaldi, K. 2017. Quantitative, qualitative, or mixed research: which paradigm to use? *Journal of Education and Social Research,* 7(11). DOI: http://dx.doi.org/10.5539/ijbm.v9n11p224

Keating, J., Nicholas, T., Polesel, J. & Watson, J. 2005. *Qualification used for recruitment in the Australian labour market*. Australia: NCVER. http://hdl.voced.edu.au/10707/17552 Date of access: 1 May 2023.

Khan, S.N. 2014. Qualitative Research Method: Grounded Theory. *International Journal of Business and Management*, 9(11). DOI: http://dx.doi.org/10.5539/ijbm.v9n11p224

Khan, N.S. 2014. Quantitative research method: grounded theory. *International Journal of Business Management,* 7(2). DOI: http://Doi:10.5901/jesr.2017.v7n2p15

Li, L. 2022. Reskilling and upskilling the future-ready workforce for industry 4.0 and beyond. *Information Systems Frontiers,* 19:1-16. DOI: http://10.1007/s10796-022-10308-y

Lindquist, M. 2023. *Top 5 industrial manufacturing trends in 2023*. https://www.oracle.com/za/industrial-manufacturing/industrial-manufacturing-trends/ Date of access: 30 Oct. 2023.

Maisiri, W. & Van Dyk, L. 2021. Industry 4.0 skills: A perspective of the South African manufacturing industry. *SA Journal of Human Resource Management*, 19: A1416. DOI: https://doi.org/10.4102/sajhrm.v19i0.1416

Mack, N., Woodsong, C., Macqueen, K.M., Guest, G. & Namey, E. 2005. *Qualitative research methods: a data collector's field guide*. Research Triangle Park, NC: Family Health International.

Maldonado-Mariscal, K., Cuypers, M., Götting, A. & Kohlgrüber, M. 2023. *Skills intelligence in the steel sector. (Machines).* DOI: https://doi.org/10.3390/machines11030335

Mendes, L. & José, M.. 2015. Employees' skills, manufacturing flexibility and performance: a structural equation modelling applied to the automotive industry. *International Journal of Production Research,* 53: 4087-4101

Mayer, I. 2015. Qualitative research with a focus on qualitative data analysis. *Journal of Sale, Retailing, and Marketing*, 4(9):53-67.

McKinsey & Company. 2022. *What are Industry 4.0, the Fourth Industrial Revolution, and 4IR*? https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-are-industry-4-0-the-fourth-industrial-revolution-and-4ir Date of access: 28 Oct 2023.

Memon, M.A., Mangi, R.A. & Rohra, C.L. 2009. Human capital a source of competitive advantage "Ideas for strategic leadership". *Australian Journal of Basic and Applied Sciences*, 3(4):4182-4189.

Mujtaba, B.G. & Senathip, T. 2020. Layoffs and Downsizing Implications for the Leadership Role of Human Resources. *Journal of Service Science and Management*, 13(2). DOI: https://doi.org/10.4236/jssm.2020.132014

Ochurub, M., Jeremiah, A. & Ignatius, M. 2022. Impact of retrenchment on employee productivity at Wordpress Namibia Limited. *International Journal of Research and Innovation in Social Science,* 6(7). Impact of Retrenchment on Employee Productivity at Wordpress Namibia Limited (rsisinternational.org). Date of access: 5 Apr. 2023.

Olaitan, O.O., Issah, M. & Wayi, N. 2021. A framework to test South Africa's readiness for the fourth industrial revolution. *South African Journal of Information Management,* 23(1), art#1284. DOI: https://doi.org/10.4102/sajim.v23i1.1284

Oun, M.A. & Bach, C. 2014. Qualitative research method summary. *Journal of Multidisciplinary Engineering Science and Technology*, 1(5). https://popia.org/definition-purpose/ Date of access: 17 Jun. 2022.

Parliament of the Republic of South Africa. 2013. Protection of Personal Information Act, 2013. (Notice 581): Condition for lawful processing of personal information. *Gazette*, 37067:4, 26 Nov.

Princeton University, 2015. *The steel industry.* Chapter 7 https://www.princeton.edu/~ota/disk3/1983/8312/831210.PDF Date of access: 27 Mar 2023.

PWC. 2023 *The fourth industrial revolution: a recovery plan for today's economic storm*. Fourth Industrial Revolution: The upside of a downturn: PwC Date of access: 10 Jun. 2023

Rae, S., Shrestha, U., Khatiwada, S., Yoon, S.W. & Kwon, K. 2019. The rise of technology and its impact on skills. *International Journal of Training Research*, 17(1). DOI: https://doi.org/10.1080/14480220.2019.1629727

Ratnawati, E., Sukidjo & Efendi, R. 2020. The Effect of Work Motivation and Work Experience on Employee Performance. *International Journal of Multicultural and Multireligious Understanding*, 7(8). DOI: http://dx.doi.org/10.18415/ijmmu.v7i8.1809

Ridoutt, L., Smith, C.S., Hummel, K. & Cheang, C. 2005. *What value do employers give to qualifications?* Australia: NCVER

Saunders M., Lewis, L. & Tosey, P. 2013. *The layers of research design.* layers.pdf (uoc.gr) Date of access: 22 Jan. 2023

Sapot, B. 2020. Manufacturing productivity: a benchmark report on trends and best practices. *Mingo Smart Factory*. Optimizing Manufacturing Productivity: Trends & Best Practices (gomingo.io) Date of access: 14 Nov. 2023.

Sima, V., Gheorghe, I.G., Subi´c, J. & Nancu, D. 2020. Influences of the Industry 4.0 Revolution on the human capital development and consumer behavior: a systematic review. *Sustainability*, 12(10), #art4035. DOI: https://doi.org/10.3390/su12104035

Simiyu, T.W. & Auka, D.O. 2018. Effect of retrenchment practices on performance of surviving employees in state corporations of Nakuru County. *International Journal of Science and Research.* DOI: https://doi.org/10.21275/ART20178292 Date of access: 7 Jul 2023.

Sreekumar, M.D., Chhabra, M. & Yadav, R. 2018. Productivity in the manufacturing industry. *International Journal of Innovative Science and Research Technology,* 3(10):51-67

Kucharčíková, A., Mičiak, M., Bartošová, A., Budzeľová, M., Bugajová, S., Maslíková. A. & Pisoňová, S. 2021. *Human Capital Management and Industry 4.0.* https://doi.org/10.1051/shsconf/20219001010 Date of access: 10 May 2023.

Tharsika, K. & Pratheepkanth, P. 2020. *A review of methodological choice: Research paradigm underpins.* 3rd Research Conference on Business Studies (RCBS) – 2020. Date of access: 11 Aug. 2023.

Thorne, S. 2000. Data analysis in qualitative research. *Evidence-based Nursing* 3(3). DOI: http://dx.doi.org/10.1136/ebn.3.3.68

Widodo, P.H. 2014. Methodological consideration in interview data transcription. International *Journal of Innovation in English Language,* 3(1):101-107

Xu, M., David, J.M. & Suk Hi Kim, S.H. 2018. The Fourth Industrial Revolution: Opportunities and Challenges*. International Journal of Financial Research*, 9(2). DOI: https://doi.org/10.5430/ijfr.v9n2p90

Zincume, P.N. & Jooste, J.L. 2020. Validation of supervisor effectiveness determinants for engineering team-based organisations. *South African Journal of Industrial Engineering*: 31(3). DOI: http://dx.doi.org/10.7166/31-3-2430

Zondo, R.W.D. 2020. Influence of a shop floor management system on labour productivity in an automotive parts manufacturing organisation in South Africa', *South African Journal of Economic and Management Sciences* 23(1): a3269. https://doi.org/10.4102/sajems.v23i1.3269

ANNEXURE A – INTERVIEW QUESTIONS

Private Bag X6001, Potchefstroom
South Africa 2520
Web: http://www.nwu.ac.za

NWU BUSINESS SCHOOL

Tel: 018 299 1379
http://commerce.nwu.ac.za/business-school
Email: Elma.Senekal@nwu.ac.za

14 February 2023

Subject: Research study questionnaire

Demographic questions about the production shift supervisors

I. How many production shift supervisors do you have on your team?
II. Without mentioning their names, roughly how many years of experience does each have in the position?
III. Without mentioning their names, what is each production shift supervisor's highest qualification?
IV. How many positions were cut from your department during the previous two section 189 processes combined?
V. What functions were added to the production shift supervisor scope as a result of section 189?
VI. In your opinion, are the production shift supervisors coping with all the work?

Production shift supervisor's strengths and weaknesses

I. Would you list each production shift supervisor's strengths without mentioning their names?
II. Similarly, would you also list their weaknesses?

Capability scoring questions

A few production shift supervisor vacancy adverts were retrieved from the archives and summarized into categories. You will be requested to rank your team capability on a scale of 1 to 10, a guideline of what to consider when ranking is provided. Also, elaborate on the score you provided.

Category	**Guidelines to consider**	**Ranking (1 – 10), 1 = poor, 10 = outstanding**
Safety management	Incident investigation, Enforcement of SWP, LBI's, Housekeeping, VFL, Task observation, Safety meetings, SHE rep inspections, statutory compliance	
Training & Development	Ensure training and licenses are valid, IDPs, Production learners, Succession planning, cross-pollination of skills	
Quality & Environment	Quality & Environment management systems, Handling of quality audits, handling of environmental audits	
People management	Leadership skills, conflict resolution, enforce discipline, command respect, manpower management, team performance	
Technical understanding of the process	Process parameter management, RCA, Short-loops, process improvement, clearly express process challenges	
Technical understanding of maintenance	Equipment specs, Functional failure, equipment commissioning, project management, signing off equipment after repair, inspections	
Computer literacy	SAP, Time & Attendance system, Edoc system, Pivot/WorkSafe, Aspen, S-Drive, portal, SMART system	

Probing current production shift supervisor capabilities

I. In case of low scores in part 3 above, what would it take for the production shift supervisor to improve?
II. How long would it take for a newly appointed production shift supervisor to settle in the position considering all the categories in part 3?
III. Do you think this could be fast-tracked by appointing an individual that possesses a national diploma?
IV. What is your take on the organization's decision to introduce a notional diploma certificate as a requirement for the production shift supervisor role?

Impact of section 189 and technological advancement on the roles and responsibilities of the production shift supervisors

The contents of section 189the agenda are usually concerned with saving jobs and cost reduction from the employee's representatives and employer's point of view respectively. The implication is that the total number of employees is gradually reduced while the roles and responsibilities expand. The jobs that were previously done by retrenched employees are shared amongst the remaining workforce. The departments are also forced to absorb employees from other plants and they come without specific experience.

I. What challenges does section 189 bring for the shift production supervisors?
II. Do you think that the shift production supervisors are coping with the technological advancement in the plant?

Advice to executive management

What advice would you give to the executive management to keep employees' skills aligned with the changes such as what we have seen recently?

- Recommendations
- Benefits

ANNEXURE B – CONSENT LETTER

BUSINESS SCHOOL
BESIGHEIDSKOOL
SEKOLO SA KGWEBO

Private Bag X6001, Potchefstroom

South Africa 2520

Web: http://www.nwu.ac.za

NWU BUSINESS SCHOOL

Tel: 018 299 1379

Supervisor for general enquiries:

Prof. Christoff Botha

Email: Christoff.Botha@nwu.ac.za

16 January 2023

CONSENT LETTER FOR PARTICIPATION IN A RESEARCH STUDY

I am participating voluntarily in a research study conducted by Mr Puso Ntikang (Student No.: 44658370), an MBA student at the NWU Business School. I understand that this research study aims to gather information to answer a research question(s) in a study titled **"Rationalizing the optimization of production shift supervisor minimum qualification requirements at Sedibeng Steel Company"** as a requirement for the completion of an MBA degree. I have been assured as a participant that:

1) The Protection of Personal Information Act 4 of 2013 (POPI Act) aims to protect the participant's constitutional right to privacy by ensuring that the personal information is safeguarded and fairly used when processing data will be adhered to.

2) My participation does not involve any form of payment and I may decline or withdraw at any time during the process without any penalty and there will be no harm because of my decision.

3) The questions are strictly about the research topic and nothing about my personal life. If I find any question uncomfortable, I have the right to decline to answer or withdraw my participation completely.

4) There will be no activity that requires any physical or biological testing or anything that might lead to emotional or psychological damage to me because of my involvement in this study.

5) My participation is limited to answering questions in the form of semi-structured interviews. The exercise may last between 30 - 45 minutes, and the scheduling of this interview will depend solely on my availability and convenience.

6) The interview will be audio recorded, and my identity will be kept anonymous. To ensure further anonymity of a participant, the researcher will not in any given circumstances, share my audio recording with anyone. The information I provide will only be used to contribute to answering the research question. The information shared will only be in a form of text.

7) I have read and understand the explanation provided to me. I have had all my questions answered satisfactorily, and I voluntarily agree to participate in this research study.

8) I have been provided with a copy of this concern form to keep in my records.

9) The interview will take 30 - 45 minutes of your time to complete

I Agree ☐

I do not Agree ☐

ANNEXURE C – PERMISSION TO CONDUCT THE RESEARCH STUDY

ArcelorMittal South Africa
Corporate Office

ArcelorMittal

University of North-West
School of Business
Faculty of Business Management
Potchefstroom Campus
Potchefstroom

ArcelorMittal South Africa
08 DEC 2022
Human Resources
Vanderbijlpark Works

To Whom it may Concern:

08 December 2022

Re: confirmation of authorisation to conduct research – Puso Ntikang

This letter serves as confirmation that Puso Ntikang (Student No 44658370) has been granted permission to conduct his research entitled ***"Determination of ideal competencies of a team supervisor in a production shift environment at a steel company in Sedibeng"***. The research will be conducted at ArcelorMittal South Africa at Vandebijlpark Works for the purpose of completing his MBA Degree at University of North-West. The interview/questionnaire and its distrubution on site has also been approved.

For further confirmation or clarification, please contact the undersigned

Yours Faithfully,

Lewisham Gutsa
Human Resources Manager
Flat Steel, Rolling & Quality Management
Vanderbijlpark Works
0166898839 or 0834218586

08/12/2022
Date

ArcelorMittal South Africa Limited
Delfos Boulevard Vanderbijlpark, 1911
PO Box 2 Vanderbijlpark 1900
South Africa T +27 (0) 16 889 9111

www.arcelormittal.com/southafrica/

Reg. No. 1989/002164/06

ANNEXURE D – DATA ANALYSIS

Codes	Category	Frequency	Theme (frequency)
Current qualification is matric	Current qualification is matric	6	Current Highest qualifications (8)
Current qualification is N3	Current qualification is N3	2	
Current qualification is matric			
Current qualification is N3			
Current qualification is matric			
Current qualification is matric			
Current qualification is matric			
Current qualification is matric			

Codes	Category	Frequency	Theme (frequency)
Average 15 years of experience	More than 10 years of experience	4	Knowledge of the work (13)
Average 15 years of experience		2	
Average 5 years of experience	Less than 10 years of experience	1	
Average 11 years of experience			
Average 10 years of experience	National diploma doesn't bring experience	6	
Average 6 years of experience			
National diploma doesn't come with experience	Machine operation		
The strength is their ability to deal with process challenges			
Their strength is in execution of the work			
Their strength is quick decision-making			
Their strength is knowledge of the plant			
Their strength is knowledge of the plant			
Their strength is knowledge of the plant			

Codes	Category	Frequency	Theme (frequency)
Positions were cut during section 189 process Positions were cut during section 189 process Positions were cut during section 189 process Positions were cut during section 189 process Retrenchments didn't really affect the job Retrenchments did not affect the job Readjust because of retrenchments	Reduction in labour costs Impact on business operation	4 2	Cost optimization (8)

Codes	Category	Frequency	Theme (frequency)
Retrenchments created a bit more work Retrenchments put a pressure Retrenchment had a negative impact Production shift supervisors are not coping with the job Production shift supervisors are not coping with the job Production shift supervisors are not coping with the job Production shift supervisors are not coping with the job Production shift supervisors are coping with the job Some production shift supervisors are coping with the job, some aren't	Effect of retrenchments Capability	3 6	Current Productivity (9)

Codes	Category	Frequency	Theme (frequency)
Their weakness is administrative work Their weakness is leadership Their weakness is planning, monitoring, and control Their weakness is people management Their weakness is administrative work Their weakness is people management Their weakness is lack of commitment	Leadership Administrative work Ownership	3 3 1	Management (7)

Codes	Category	Frequency	Theme (frequency)
National diploma means better work performance National diploma will take company to the next level National diploma means sustainability in our company National diploma will address administrative challenges National diploma means better understanding National diploma means maturity in terms of thinking National diploma will address administrative challenges National diploma means they can catch on much quicker National diploma means better chance of succeeding National diploma ensures that they grasp quick	Need to improve performance	10	Benefits of National Diploma (10)

Codes	Category	Frequency	Theme (frequency)
It would take executive management involvement to improve production shift supervisor performance Coaching is required to improve production shift supervisor performance Structured training is needed to improve production shift supervisor performance Exposure is required to improve production shift supervisor performance Training is needed to improve production shift supervisor performance Enforcement of discipline is needed to improve production shift supervisor performance	Training Coaching Enforcement of discipline Executive leadership involvement Exposure	2 1 1 1 1	Uncertain outcomes (6)

Codes	Category	Frequency	Theme (frequency)
National diploma does not guarantee people management National diploma does not guarantee people management skills National diploma means higher remuneration National diploma would increase employee turnover National diploma was not implemented satisfactorily Give internal employees opportunity to study national diploma Consider someone like an artisan instead of national diploma People with national diploma are not going to stay long People with national diploma won't stay long Agree with national diploma but not with the implementation method	Leadership attributes High labour cost High employee turnover Poor implementation Consider other alternatives	2 1 3 2 2	Business risk (10)

Codes	Category	Frequency	Theme (frequency)
National diploma is a good thing National diploma means a very steep learning curve National diploma is a good thing National diploma will help in this regard Production shift supervisors are struggling with technology Production shift supervisors wont cope with technology Production shift supervisors are not coping with technology Production shift supervisors are struggling to catch on with technology Production shift supervisors are not coping with technology Production shift supervisors lack knowledge of technology Production shift supervisors are not coping with technology Production shift supervisors are not capable of handling technology Initially resistant to introduction of national diploma I strongly believe that it is a good thing I fully support that His learning curve is very steep National Diploma is a good thing Introducing national diploma would be perfect	National Diploma brings good future prospects Poor digital illiteracy	9 8	Future prospects (17)

Categories	Frequency	Strength
Need to improve performance	10	0.116
National Diploma brings good future prospects	9	0.105
Poor digital illiteracy	8	0.093
Current qualification is matric	6	0.070
Machine operation skills	6	0.070
Capabilities	6	0.070
More than 10 years of experience	4	0.047
Reduction in labour costs	4	0.047
Effect of retrenchments	3	0.035
Leadership	3	0.035
Ability to do administrative work	3	0.035
High employee turnover	3	0.035
Current qualification is N3	2	0.023
Less than 10 years of experience	2	0.023
Impact on business operation	2	0.023
Training needs	2	0.023
Leadership attributes	2	0.023
Poor implementation	2	0.023
Consider other alternatives	2	0.023
National diploma doesn’t bring experience	1	0.012
Ownership	1	0.012
Coaching needs	1	0.012
lack of discipline	1	0.012
Executive leadership involvement	1	0.012
Exposure	1	0.012
High labour cost	1	0.012
Total	86	1

Themes	Frequency	Strength
Uncertain outcomes	6	0.07
Current Management	7	0.08
Current highest qualification	8	0.09
Cost optimization	8	0.09
Current productivity	9	0.10
Benefits of National Diploma	10	0.11
Business risk	10	0.11
Knowledge of the work	13	0.15
Future prospects	17	0.19
Total	86	1

ANNEXURE E – INTERVIEW TRANSCRIPTS

Participant 1

Interviewer: Alright, let me jump straight to it, I am going to skip all the formalities because we already covered them on the phone. Alright, I give you a background of the research, that it's all about trying to develop a theory to justify Sedibeng Steel Company's position on the minimum qualification requirements for Production Shift supervisors. So, since you're one of the production managers, I need you to share with me your real-life experiences working with them. So, the questions are basically a build up to formulation of theory.

Participant 1: Alright

Interviewer: The first question will cover demographic questions about the production shift supervisors. The first one would be how production shift supervisors do you have in your team.

Participant 1: Uh, in my team, my direct reports are seven, but I work with all the production shift supervisors at the coke batteries and COR, so that would be 7 + 8 what's the number 15? Yeah.

Interviewer: 15 OK, but this one is going to be a bit complicated, but maybe I'm going to need an average number of years of experience roughly for all 15.

Participant 1: I would say average would probably be around 15 because most of them are, they've got like, yeah, they started there, you mean work experience as a production shift supervisor?

Interviewer: yes, as a production shift supervisor

Participant 1: Then let's work with 15 years' experience because they are 15 yeah.

Interviewer: Well then roughly their qualifications? Is there anyone that don't have matric, or have a matric or qualifications higher?

Participant 1: So, I think all of them have matric or equivalent of matric like your N-qualifications or the old N2, but none of them has is anything higher than a diploma or anything.

Interviewer: But is there anyone of them who has a diploma?

Participant 1: No, not the production shift supervisors

Interviewer: OK, alright, Going back to section 189, November 2019, I'm not sure if you were here.

Participant 1: Yeah, I was here

Interviewer: You were here 2019 when we had section 189. Did they cut any positions from your department, like in terms of positions that would sort of affect how the production shift supervisors work?

Participant 1: You mean not the production shift supervisor position but their direct reports? Then no.

Interviewer: Positions under the production shift supervisor

Participant 1: You can say that because we used to like for example, I am just making an example, at battery 8 & 9 we used to have a heater man for #8 and a heater man for #9 working with the team. So, the positions of two heater man were cut and made one, but what they did then they introduced the coke makers, I4s

Interviewer: More like a replacement position?

Participant 1: yeah, at a lower level, a gap between a driver and a heater man. So, I don't think it really affected, although there's a bit of grey area between an I4 and H4 in terms of the job description. But in terms of the work, I don't think there was a major change.

Interviewer: OK, so you now in general, considering the previous questions about the, the, the qualifications, the positions that were cut, umm, whether the functions were added to the scope of work or not, do you think currently all your production shift supervisors are coping all the way?

Participant 1: Definitely not. Uh, and the reason? Let's just start with safety. If you do the audit on the legal compliance, you know using of this system, this work safe.

Interviewer: Yes, I see.

Participant 1: Remember, they have to do task observation and capture it one by one. It's a challenge, mind you, we've got the slowest computers and they're old. They're in their late 50s, 58/59, so Computer literacy is also not that good. The typical report, they will take about an hour to two hours to do it, and there it is also evident when you look at the online production shift supervisor's leadership training, they are busy with, you know, they are taking forever to do it so much that we have to literally threaten them with disciplinary for them to do it. And some are saying they are already old and things like that, however they do it.

Interviewer: Umm.

Participant 1: but generally, competence in terms of their work, there's a few in my opinion that I can say, yeah, these are real production shift supervisors. If I were to move to another company, I will call them, but majority no.

Interviewer: So out of 15, those that you are saying, these are the real production shift supervisors, How many are they out of 15?

Participant 1: Maybe 7, let me say 5 production shift supervisors but the other two would be the new guys. Let's work with six, for me only about six of them. Like when they are working night shift and I'm on Standby duty, I know that I am going to sleep.

Interviewer: Ok

Participant 1: Umm.

Interviewer: Think of them as a collectively, if you were to mention their strengths, what would that be?

Participant 1: Their strengths, because of their years of work experience, I would say their ability to deal with process challenges and working in a very hostile environment. it's not everyone who can work there. I'm not sure if I'm making sense.

Interviewer: very clear, and then their weaknesses? As a collective again.

Participant 1: Their weaknesses collectively, I would say administrative, and I would say leadership in general. I mean, there's a big gap in terms of, you know, the leadership qualities.

Interviewer: Umm

Participant 1: Yeah. So, I always, me and Selbourne (the other production manager) we always have two step a little bit lower to enforce certain things like with aggression you know. You need to go down with aggression other than that you don't get anything from them.

Interviewer: Umm

Participant 1: Like for example a simple, let's say we have a shut down.

Interviewer: Umm.

Participant 1: The production shift supervisors would be scared to tell their guys that hey guys we are on a shutdown, let's do housekeeping.

Interviewer: Ok

Participant 1: The guys will be sleeping the whole 8 hours, so if you don't go there and make sure they are working? And then you're going to have unions on your case, you know, big disciplinaries unions and so forth. And they're going to be threatening you, things like that.

Interviewer: OK. The next step, you touched on it several times in the previous questions. Several production shift supervisor advertisement job specifications were summarised, like past five years, key points were grouped into categories.

Participant 1: Umm.

Interviewer: So, I need you to rank them on a scale of 1 to 10, one being poor, 10 being outstanding. So, let's start with safety management.

Participant 1: Umm.

Interviewer: I'm talking about the stuff you mentioned, like incident investigation, enforcement of working procedures, LPI's housekeeping the whole, what you call worksafe stuff that they need to capture. So, on a scale of 1 to 10 and you must always think collectively here. Where would you rate them?

Participant 1: Well, I'll be generous when I give them a 2 or a 3, let's work with a 3. Number one, our actions management just actions from 2018, they are not done. And mind you, I'm a champion for gas and confined space FPS standard. The actions are outstanding from 2018, before I joined the company.

Interviewer: Umm. And then training and development and this would entail ensuring training and licenses are valid, IDPs production learners, succession planning, cross pollination of skills, things like that. Where would you rate them?

Participant 1: I'll give them a 5.

Interviewer: 5?

Participant 1: All average. You don't need the reasons.

Interviewer: No, I don't need the reasons. I just want you to give me your general view.

Participant 1: And I'm looking at all the production shift supervisors, obviously for those 5, they would probably be higher, but then there has to be low.

Interviewer: Yes, that's what I'm asking for. And then quality and environment? So, I'm talking about quality environment management systems, handling of quality audits, handling of environmental audits, you know, all of those things around quality and environment.

Participant 1: There I think because of like up until recently, I think there's a big improvement in terms of how the guys deal with quality issues. So, we would maybe give them a 6 for quality and environment, although even like even if you don't meet specifications, they would be proactively taking steps to correct.

Interviewer: Ok. And then people management? Same approach, think collectively.

Participant 1: People management, I would say 5, let's say, it's 6 because we are dealing with very, very difficult people. It's not normal people.

Interviewer: Ok. And then technical understanding of the process where do you rate them, I'm talking now process parameter management, RCA, short loops, process improvement, clearly expressing process challenges.

Participant 1: I think they because for you to be a production shift supervisor in our plant you must be an H4 first. So, in terms of process or I will say maybe an 8 like the understanding because no one becomes a production shift supervisor without being an H4 and they stay there for like a while. So, there I think you know, there's a big understanding, although sometimes there are clashes and you feel there's certain decisions that were not made. But I think in general it's an 8.

Interviewer: an 8?

Participant 1: Yeah, a 7 or 8, let's work with a 7.

Interviewer: Ok. And then technical understanding of maintenance like equipment specifications, understanding a functional failure, equipment commissioning, project management, signing off equipment after repairs, inspections, all of those, where would you rate them? They do not physical do maintenance work, but at least understanding the maintenance strategies and the function of maintenance team.

Participant 1: Uh, I'll give them as A6. There they do understand because we deal with maintenance on a daily basis, in fact they are the ones who actually drive everything, I would give them a 6.

Interviewer: OK. And then Computer literacy. I am referring to examples like time and attendance system, e-doc system, a pivot, worksafe, Aspen, S-drive portal, smart system. All of those things where would you rate them? Everything, everything.

Participant 1: There are you combining it with the usage of computers because the guy's maybe literate, but our computers, even you, I can tell you are going to struggle because the computers are so slow. Even me, My own PC, it doesn't work.

Interviewer: Let's say the computers are working perfectly fine

Participant 1: I'll give them a 5. I think they just know the basics, If anything goes like sideways, they cannot really troubleshoot, I'll just give them a 5, an average.

Interviewer: Alright, I'm going to jump into the next one. So, in case of low scores on the previous question, especially the safety management part because you rated it the lowest, it's a 3. But I want to also include training and development as well as computer literacy because you scored them 5 each. What would it for them to improve?

Participant 1: First of all, let's start with safety. For them to improve, we need more focus from leadership. When I say leadership, I'm speaking about the highest level, the CEO and COO. For example, it's easy for them to just say, we are on quarantine, will give you the support and they give nothing. You know, we struggle. They just demand feedback, but they give absolutely nothing. For us quarantine doesn't mean anything. It just means we're going to be doing the reports every week. Secondly, even safety like PSIF and whatever, our response, how we deal with them is very poor. Those two, not just the production shift supervisors, even us you know, it is very poor. Thirdly, I will say the system itself. In my opinion, SHERQX was much better than worksafe. Worksafe is nonsense to be quite honest with you. To log this you must like, it's just so complicated, even as we do struggle with it and looking at the monthly reports, their participation is very poor. Even the best guys, they are not doing it as well as they should.

Interviewer: So, if you were to appoint a new production shift supervisor, how long would it take him to settle?

Participant 1: From outside.

Interviewer: Yeah, considering all your previous responses, Yeah, let's say from outside

Participant 1: Unless if maybe he's got like a qualification or something, then yeah. Just on safety, It will take him a long time.

Interviewer: And then from inside?

Participant 1: The H4s would be much better, like there's an I4 guy with a B-Tech degree. He was doing much better. He was handling these challenges much better than the old guys.

Interviewer: So now, you are mentioning the qualifications already and its actually my next question. I wanted to ask if you if you think appointing someone who has a national diploma or B-Tech that you mentioned could fast track the learning process for a newly appointed production shift supervisor?

Participant 1: I would say yes and no and the reason I'm saying yes is purely because for me, one of the bigger issues that we have is decision making and understanding of certain things. Why certain decisions have to be made. I mean, Coke making is quite a complicated process and a very sensitive one. So, sometimes a simple decision can take like 20 hours to correct if you get what I mean. So, these new guys who went to school with B-Techs are much better, they grasp the concepts much better without working 10 years in the same position like I mentioning an I4 you know. He can make decisions; he can understand when you come to him and talk about control plans. He can grasp information quicker than the old guys. So, the no part, would be that our company doesn't really pay. I'm sure you are aware of the difference between H4 and the production shift supervisors. Like, if you are an H4 and you become a production shift supervisor, you get like 10% or whatever. Naturally the H4s earn more than the production shift supervisor. When it comes to their overtime, they get 1.5 and then on public holiday and Sunday they get times 2. And now these new guys, I don't think they will tolerate it. They will not take it well. Looking at their subordinates with lesser qualifications earning more than them working the same hours and them having less responsibilities, you understand what I mean?

Interviewer: Yeah, I do.

Participant 1: So and another thing with the B-Tech guys, remember that they are not fixed. They can always get a job somewhere else. So that's why I am saying for me they would be good, but it won't be a long term thing because coke making is all about experience. Those guys are going to leave, they are not going to tolerate that nonsense.

Interviewer: So with everything considered, what is your take on the organization's decision to introduce national diploma as a minimum requirement for qualifications?

Participant 1: For me, and I expressed this before, I think even with Eugene (Former General Manager) ideally in a normal organization, that would be perfect, it would work. But like I'm mentioning, there's no point in wanting a person with a diploma and not willing to pay them. And let's say you take them, and you want to pay them a certain whatever. You are going to get an

individual with a B-Tech, you put him there or a diploma, you put him there, you pay him 60K and then you have another one who has been a production shift supervisor for 20 years and you pay him 45K, do you think they are going to help him, or they are going to give him the information? The thing about salary at work is that they are not as confidential, these guys will know. Sometimes you have to print your payslip then you leave it on the printer or whatever. These guys would know, and it will cause a big issue. So, unless if you are willing to pay these guys, of which I don't think the company is willing to pay. So, it is ideal. But for me it is not going to work, and these guys are also not going to stay. You also know that next year we are not getting an increase. So, the guy with B-Tech who is still young, who's not married, who does not have to be in Vanderbijlpark, Who can go to Mpumalanga or anywhere.

Interviewer: Umm.

Participant 1: So, for me, my recommendation back then was why don't you at least consider someone like an artisan, which is what the other mines did? You know an artisan, they understand maintenance, they can do first line maintenance before standby arrives, like a fitter or a millwright. If something trips, he can quickly reset, he can check you know. He can do basic stuff while waiting for the standby team to arrive.

Interviewer: So, you'd rather have Artisans as production shift supervisor?

Participant 1: Yes, that's what other companies are doing because artisans would stay long. People with diplomas, they are going to be studying. They're not going to stay there. Artisans for me would be a better option.

Interviewer: I'm sure you guys also have some technological changes; you are introducing some stuff that are meant to make your life easy that side. So now in terms of the production shift supervisors, how are they coping with all of these technological improvements in the plant?

Participant 1: They're not. I'm seeing it every time you change something. Yerr, it’s a mission, That's what I'm saying we have to use aggression. Some do respond, but most hey they struggle. They are not refusing but they are struggling. Like even worksafe, if you were to go to, let's say I can pick two or three guys. You say have your safety meeting load it onto worksafe, You're going to see miracles.

Interviewer: What advice would you give to the executives then? Maybe recommendations and the benefits of those recommendations? Specifically, production

Participant 1: Firstly, for me the like I'm saying, the production shift supervisors, if you're just focusing on the production shift supervisors, it will be number 1, yeah, firstly to consider the artisans, the companies that I have worked for outside, for me, they were using artisans as production shift supervisors. Use artisans, I know they will have to pay a little bit more for an artisan, but the value they are going to get is much more. In fact, other companies even go as far as using artisans as machine operators. You understand? If a pusher trips, a millwright/ driver can quickly open the panel to see what's wrong, reset and go, but then they will probably be more expensive. So at least if you have a production shift supervisor as an artisan then later you start them at H4. Because I think artisans are I3 you know, from I3 and then you just promote them to H4 so that you know like a production shift supervisor development thing because that number one will assist in terms of decision making, in terms of understanding the process as a whole, not just the production part, but the machine part as well, you know, making the right decisions because sometimes the guy will call you at night and then when you get to work, you find that no he didn't really give you the proper problem. Well, or we didn't really call the right people, or we waited too long for standby, we could have done something and also it will also I think bridge that gap between production and maintenance then about you know, so number two, if you want someone with certain qualifications or certain experience at least pay them for that because I don't know. I mean, I think there we have a mindset that, you know these guys, you can just pick them on the streets. So, if they want to leave, they can leave. I've had several discussions with people who go to Brazil to other plants, and there's one key thing that those guys are doing and it's valuing their people. And now times have changed. When I say value employee, I cannot value you by thinking you are human, doing whatever and not paying. Paying someone is also part of valuing someone. I know they talk about markets and what and what not. You know, and coming to that point again next year, you know that you're not getting anything but the H4 and downward, they're getting the bargaining unit increase, they are getting that KPI bonus, they're getting their R10,000, they're getting everything. So ultimately, those guys are going to end up earning more than us managers.

Participant 2

Interviewer: I just to give you a background that this is for MBA research purpose and the aim is to try to develop a background behind Sedibeng steel company's decision to introduce National Diploma certificate as a minimum qualification requirement for production shift supervisors. So, the only way to get this information is to speak to production managers to get their experience of working with production shift supervisors.

Participant 2: OK.

Interviewer: So, I'm going to straight into it. So, we'll start with the demographics. How many production shift supervisors do you have in your team?

Participant 2: In terms of production shift supervisors its 4 in my team, this is obviously excluding what we call production specialists or coordinators.

Interviewer: We are only focusing on the productions shift supervisors.

Participant 2: The production shift supervisors, that would be 4.

Interviewer: So how many years of experience do they have? On average, how many years of experience?

Participant 2: So, three of the four were actually appointed when we moved over to a 4 shift, so that would have been around 2010. So, I would say about let's say, yeah, 2011, about 12 years of experience and then one has quite a lengthy experience. One of the four, he's got about 25 years of experience as a production shift supervisor but three of them are, let's say, 12 years.

Interviewer: And what is their highest qualification? Do they have matric or is there any one of them who's got the qualification beyond matric?

Participant 2: Uh, no. The bulk of them have matric, one has some artisan experience, so he has converted typically from artisan to production shift supervisor in the past.

Interviewer: So, artisan would be a trained artisan as in the person that went through a maybe college or something? Or is it just an experience?

Participant 2: No, he went through college and then did apprenticeship.
Interviewer: OK, OK. So basically, this person has an N-qualification?

Participant 2: That's correct.

Interviewer: Alright.

Participant 2: but not all of them. Right. The other three have matric.

Interviewer: Alright. Umm, section 189. let's refer to the 2019 one. Did they cut any positions from your department?

Participant 2: Yes, So we've got one J4 position per shift, a total of 4 and we have also lost one technician uh position during 189, but they have been put back now. So, we've lost them through section 189, but as of last year it was again budgeted for.

Interviewer: Alright, so they did cut positions. How did they affect the way production shift supervisors work?

Participant 2: Well, it didn't really affect their work per say in the sense that the position that was cut was a relief position on shift. So, what that typically then means? The only impact on them is if obviously they have vacancies now, they would then be required to manage their overtime you know the manning points on the shift more proactively in terms of arranging of overtime and so forth.

Interviewer: OK, so in the past like from 2019, section 189. were there any additional functions to the production shift supervisor responsibility?

Participant 2: Not as a result of section 189. No, but we do have additional functions for the production shift supervisor due to other activities that was not typically part of their scope. So let me give you an example, but due to, let's call it poor performance of the steel plant. We have a lot of hot metal which is pooled. OK. So, in Vanderbijlpark, we are currently we are sitting with about 200 kilotons of pool iron inventory, and this is where the additional functions come in. We are now exporting this material which is not part of their normal responsibility, and this is now an additional responsibility. We need to export about 30 kilotons per month. So that's the only

additional responsibility, but it's not ensuing from 189 process no. From section 189 process there was no real change to the scope of their work.

Interviewer: So, in your opinion, do you think the production shift supervisors are coping with all of the work?

Participant 2: Umm, yes and no so. But obviously I think that in some instances, yes and in others no. So I would say two out of the four guys are doing quite well in terms of coping with the work that is expected of them. The other two I won't say they are failing miserably, but they are really struggling to manage all KPIs and all expectations on a shift. So that's why I say yes and no. But often at times, the two, which do well, they also on occasions well, from my personal discussions with them, they indicate that the workload is too much for them, even though they are managing the KPI's.

Interviewer: OK.

Participant 2: Yeah, but the other two are really struggling to manage the workload and the expectation of what is required of them.

Interviewer: So now and I don't want you to mention names but, I want you to think collectively, your whole team. What are their strengths?

Participant 2: Ohm, on the production shift supervisors, right? Their strength is, yeah, their strength is actually on execution to be honest. Collectively execution.

Interviewer: OK. And then in the same vein, their weaknesses?

Participant 2: Weaknesses is actually planning. Monitoring and control.

Interviewer: Alright, so more like the administrative part of things.

Participant 2: That's correct.

Interviewer: OK. The next question, a number of previous production shift supervisor adverts were summarized, and key aspects were compiled into categories. So, I need you to rate them between 1 and 10, one being poor and then 10 being outstanding. Let's start with safety. In terms

of safety management and I'm referring to incident investigation, enforcement of safe working procedures, LBIs, housekeeping, task observations etc, you know the whole safety package from 1 to 10, where would you rate them? Collectively.

Participant 2: And if I look at the KPIs, safety KPIs for all those metrics, they are, they are complying to the target. So, I will be forced to rate them quite high there. The problem I sit with is actually not whether we are chasing the numbers, but actually the quality of work that goes into that. So, for arguments sake, if I have to say just to give you an example, task observations, we're required to do 2 per week. We are doing 2 per week, but if I delve into the quality of the task observation….so in terms of the quality there of I would say probably 4 OK.

Interviewer: So, if we move on to training and development and I'm talking about ensuring that training and licenses are valid, managing IDP's, production learners, succession planning and cross pollination of skills, where would you rate them?

Participant 2: On that, I would definitely rate them a 5.

Interviewer: OK. OK. Alright, let's move on to quality and environment. So here I'm talking about the quality and environment management systems as a whole. How they handle the quality audits, all the audits to do with quality and environment. How much would you rate them for that?

Participant 2: a 4.

Interviewer: a 4?

Participant 2: Yeah.

Interviewer: OK. And then people management like their leadership skills, conflict resolution, enforcement of discipline, command of respect, manpower management and team performance where we would you rate them on that one?

Participant 2: You're going to say I'm very harsh with them, I would say collectively a 3.

Interviewer: No, no, no, you are not harsh, You are sharing your lived experience. Remember that it's just your lived experience. You are not exposing anyone. Your name won't be seen anywhere. Their names won't be seen anywhere. It's just a matter of you and me talking.

Participant 2: The problem that I sit with in terms of people management is that the production shift supervisors that we have currently are reluctant for some other reasons. And I've seen it through….Remember, I'm doing a lot of chairing of disciplinaries across organization as well, so they are reluctant to charging individuals. So normally when you're sitting in a disciplinary and so forth you can see quite quickly, you will detect that the production shift supervisor has actually been tasked by the manager to discipline the individual in most cases. So, our production shift supervisors are very reluctant to do that.

Interviewer: Umm, alright, now your process. Their technical understanding of your process, like the process parameter management, the RCA's, the short loops, process improvement and then expressing the process challenges, where would you rate them on that one?

Participant 2: OK. On that, I would say probably a 7.

Interviewer: Clear. OK. And then the technical understanding of maintenance, they are not really executing the maintenance themselves, but I want to know if they understand the equipment spec, if they can spot a functional failure on the equipment and whether they are involved in equipment commissioning, project management, if it's part of their scope, signing off of equipment after repairs and inspections in general. In that one how much would you rate them?

Participant 2: I think in that, our guys are not very involved in those categories. But normally if I look at failures in the plant, there are quite I think because of the years of experience, even though they don't have qualifications really in the maintenance environment, they are quite well informed I would say probably about 5.

Interviewer: But just the exposure to that environment you rate them a 5.

Participant 2: Yes

Interviewer: Yeah. And then the Computer literacy? I'm talking now how they navigate SAP, time and attendance, e-docs systems, the pivot or worksafe, aspen etc. How would you rate them?

Participant 2: So, one of them was really struggling, but the other three are actually don't have any problems with the system, so I think it would be unfair to rate them collectively low, So I would

probably go with a 6 in that aspect, since three out of the four have no problems whatsoever to handle the systems that are currently expected of them to handle uh, but one then struggles

Interviewer: do you mind giving an idea of which one is it?

Participant 2: Funny enough, it's not the older one. It's one of the younger ones.
Interviewer: OK. you said it's 6?

Participant 2: Yes 6

Interviewer: OK, I want to focus on the lower scored ones, so I'll say the people management where you scored a 3 quality and environment you scored a 4 and people management you scored a 4. What would it take for them to improve?

Participant 2: Very difficult question because most of these guys have gone…..ok, I must say I'm not also familiar with what they have done in the…. you know what to really. What I captured by the production shift supervisor development program that was done, so they have all been through that process. I would imagine that these topics that we are discussing now would be part and parcel of that training program. So that means that production shift supervisor development, but still, they find difficulty with those categories so. So, the only thing.

Interviewer: You don't sort of have an idea of a specifically, what would they need because you are alluding to the fact that you don't know their background, that you can actually link to why they are struggling. So, you are only relying on the production shift supervisor development programs and this leadership program that is currently ongoing for them to improve?

Participant 2: You know what I'm saying is, they have been to that program but I imagine that those topics have been there, so the only thing from my side which I'm currently busy doing with them is typically on the coaching side, but I have a weekly umm, I have a weekly session with three out of the four production shift supervisors in which we look at that all these categories specifically where they are struggling. So, we look at safety. That's why I'm telling you in terms of the quality of that. We look at, in that weekly session, the HR aspect, the safety portion or the people management, which will be part of HR. So that is the only thing that I can think will improve their performance in that aspect since they've done the necessary training courses as well is through on the job coaching, which is currently what we're doing on a weekly basis.

Interviewer: Got it. So, do you think these challenges could be sort of fast-tracked by appointing an individual with a national diploma?

Participant 2: Yeah. So, I think someone who has got a national diploma would probably have a better chance of succeeding at what is being expected of a production shift supervisor. That is my honest opinion.

Interviewer: Umm.

Participant 2: I do think from what I'm seeing currently on my plant is that for….let's say one or two of the individuals that I'm sitting with……is that I don't think it's within their capability to really achieve the expectation of the production shift supervisor which might have been an error, management error on our side, but it's difficult to try because it's also…You must remember that not everybody with a qualification might be good in people management. It would depend on the individual. Uh, so I think they might have a better chance of achieving some of the expectations. But when it comes to people management, I think that one is up for debate for me, because I've seen that we have had guys with….I'm in the mentorship program also now with some of the guys coming through the pipeline, candidate engineers and I've seen that not all of them have that the aptitude or ability to manage people or have interest in managing people. I do think with the education rule that they followed they would have a better chance of achieving most of the expectations. My only concern is whether that individual really will be able to master the people management aspect thereof. I think in terms of the planning and the monitoring and control and those kinds of things, the background they come from, they should be able to master those type of expectations. But in terms of people management, I'm not so sure to be honest. So, I think the mistake that we make even in the management area is, typically we see a good engineer and we think this engineer should be the next manager. But you put him in a manager position, and he starts to, I won't say fail miserably, but he really starts to struggle with the management aspect thereof. That's why I'm saying it's not necessary that a professional will be a good manager, whether it's a junior manager or middle manager based on qualification alone. That's the problem I struggle with because we even see it on the management, middle management level where the guys normally go and say this is an excellent engineer and he is the next manager but the moment you put him in that management position he struggles, but the people management aspect thereof. Managing the process and those things he is able to do it but managing the people aspect, he fails miserably.

Interviewer: So now, with that said, what's your take on Sedibeng steel company's decision to introduce national diploma as a minimum qualification requirement for production shift supervisor?

Participant 2: So, I'm in agreement with that, I do have a problem, however with the means of implementing it. So, I don't think it's a bad idea to have a minimum requirement of National diploma for a production shift supervisor. Also, because of what I mentioned to you earlier, my feeling is that they have a better chance of achieving expectations and people management one is a different thing that you need to manage. Uh, but at least in terms of the qualification, there will be a higher chance of success for the individual in that position. My problem however is, I don't think with simply introducing it immediately, we should have, according to me, there should have been a journey, we should have earmarked individuals, we should have provided at least some opportunities for individuals within the organization to achieve certain qualifications because simply by implementing the way we do, we have now a problem. Number one is, we don't have guys in the pipeline with the qualification, that means we need to do external appointment, and when you do an external appointment, you need to get someone now to train this guy on your processes and obviously we are facing so much reluctance from the guys now on the floor because of what has been implemented and I don't think that they would really trained individuals also on the process per say because of the negativity that we have here.

So, I think we should have had a….I don't think it's a….I am for the idea. I think the manner in which we implemented it for me is the problem. So what I would have liked to see is because we do have some talent within our organization, even on the shop floor, I can see a lot of individuals who have got matric, they've gone through production learnership and they are really bright individuals who in my opinion, even though they are not on a senior level, I think they would have quite a good success rate in terms of becoming a production shift supervisor. We just need to provide them with opportunity for training to meet the qualifications requirement. So, for me, that would have been a better option also to provide some programs internally for these individuals to groom them because now we're sitting with a problem where guys are even not even willing to relieve anymore because they know there's no opportunity really for them, there's no benefit for them. Before a guy would relieve knowing that they would get a chance at least to prove himself in the time that he is relieving for the production shift supervisor that's on leave for a month and will probably be noticed because of performance and probably be earmarked for appointment in future. Now, that prospect is totally off the table.

Interviewer: Umm, so now we are moving into technology and obviously we are slowly introducing different things like we are advancing in terms of technology. Do you think the current production shift supervisors are coping with such advancement?

Participant 2: What do you mean by advancing? Like what specifically are you referring to just give me an example?

Interviewer: For example, introducing maybe a certain way to measure the equipment performance, maybe generating trends, them being able to see what the equipment is doing and through just a technology that is introduced, being able to pick up that, no, this equipment is not performing and like something that will assist them in making decisions.

Participant 2: I think in that regard, to be honest, the production shift supervisors that we are sitting with, no they won't cope. And this is where my feeling is also that to introduce someone with a higher qualification on that level will be better tasked to identify trends because we put a lot of information up and we explain it but some of the production shift supervisors don't grasp that, those KPI graphs really. So, I think no, they're not.

Interviewer: Alright so. So, with everything that we said from the beginning up to now, what advice would you give to the executive management like the recommendations and benefits of your recommendations that you are putting on the table?

Participant 2: So obviously my recommendation would be alignment with the qualification that is being required with the national diploma minimum at least for a production shift supervisor. I would also recommend because there would be definite improvement in performance. My view from introducing that qualification, I however think that we need to also, I would also obviously recommend that we have to have more internal programs firstly, so we can identify existing talent within the organization that has the potential to become a production shift supervisor as a number one and that identification program needs to be sort of hand in hand with HR. We are not only looking at top performers, which in a managers opinion is a top performer but a company that would conduct psychometric tests which then build up the profile to say this guy has the correct profile and also then to offer these individuals as organization bursaries to further their education and have them available as production shift supervisors, possibly develop them for the production shift supervisor by offering them bursary to achieve the qualification. We will have to do a lot of work because you must also remember that we are sitting with production shift supervisors that don't have qualifications so in a way they are really restricted in terms of the real opportunities

outside of the organization. So, one thing we need to realize is once we introduce this, we might have a higher turnover than we have. My feeling is we definitely will have higher turnover than we have currently with our production shift supervisors. I have a production shift supervisor that has been here for 25 years, and other guys have been here 12 years, they may retiring that positions but moment you ask for a national diploma, that means he has prospects for other employment opportunities in other areas and other organizations, which means that we will see probably a higher turnover on those positions that we currently see with typically engineers and technicians at this stage. That's my feeling. So coupled to that we need to have a pipeline of developing production shift supervisors obviously there to the help us and the benefit there is obviously to manage the turnover that we are going to experience in my view in the next 2-3 years by introducing the minimum qualification requirements on the production shift supervisor level.

Participant 3

Interviewer: Once again, thank you for making time for this, I know you are very busy today. I don't know if you have read the email about the background of the interview. So basically, as you can remember that the Sedibeng Steel Company has recently introduced a national diploma as minimum qualification requirement production shift supervisors. The idea is to formulate a theory behind the thinking. I have a few structured questions that are meant to guide us through the process.

Participant 3: OK.

Interviewer: So I will start with the demographic questions. How many productions shift supervisors do you have in your team?

Participant 3: In my team, uh, I have four production shift supervisors

Interviewer: you said 4?

Participant 3: Yes.

Interviewer: OK. So roughly, if you think about them collectively, on average, how many years of experience do they have as production shift supervisors?

Participant 3: On average I would say five years.

Interviewer: Five years?

Participant 3: Yes.

Interviewer: Oh, OK. So without mentioning their names, what is their highest qualification?

Participant 3: The highest qualification is, out of the four, one has a National diploma, which is the most recently appointed production shift supervisor and then three have matric.

Interviewer: Three matric, so the one with National Diploma was appointed after the announcement of a national diploma as a minimum qualification requirement?

Participant 3: Yes, yes he was. He is in a position now for the second month.

Interviewer: For the second month?

Participant 3: Yes

Interviewer: OK, so it means for this interview, when you give your responses, you must exclude him because he has not been with you for too long, so if we add him to this, it's going to distort the outcome.

Participant 3: Alright, correct.

Interviewer: Alright, tell me, during section 189, did they cut any positions from your structure?

Participant 3: Uh yes, they cut a position from my structure

Interviewer: OK, so because of the that, how did it affect the way the production shift supervisors work?

Participant 3: Basically they have had to readjust, they have to readjust the manning point allocation be because it was a middle level a position because in a team you have an entry level, middle level and then the senior level. So there are lots of position in the middle level and then they basically have had to readjust the workload among the rest of the team.

Interviewer: So, the middle level would be what? I4 or J4?

Participant 3: I4, Yes I lost an I4 position.

Interviewer: OK, so now what functions were added to the production shift supervisor position as a result of section 189? Did they add anything?

Participant 3: Ohh no. To them to them? specifically the production shift supervisor? No, there was no additional function as a result of section 189.

Interviewer: OK, so everything remains the same except that they had to move around the many points?

Participant 3: Yes, they only had to move around the manning points

Interviewer: So now in opinion are the production shift supervisors coping with all the work?

Participant 3: No, the production shift supervisors are not coping with that work.

Interviewer: OK. Can you elaborate more on that?

Participant 3: One of the problems with the production shift supervisors is that, uh, they are not trained to become supervisors. They are figuring out everything on the job, meaning that the, the HR part of the work they need to figure out when they are in the position, the technical side of it they are appointed based on their technical ability, which is also not 100%. So what it boils down to is that the production shift supervisors end up basically learning on the job. Basically their work performance is initially very poor. So that's why you will generally see a production shift supervisor who has been in the position much longer having better management skill than a someone who is newly appointed.

Interviewer: Without mentioning their names like, you must think collectively of your team. Remember, we are excluding the production shift supervisor with a National diploma. What do you think is their strength?

Participant 3: Their strength is ohh quick decision making, decision making because of…. why I'm saying quick decision making is because they are appointed on their technical ability. Basically he is the most technical guy that you have on your team which end up becoming a production shift supervisor. Therefore technically they know the operation and they are able to take a decision in the in an emergency situation they are better to take quick decision in a the emergency situation because they understand the process much better.

Interviewer: OK. And then what would be their weaknesses?

Participant 3: Their weaknesses is, uh, the people management skill.

Interviewer: OK, a summary of a couple of job adverts for production shift supervisors was developed and subdivided into different categories. I am going to go through the list and ask you to rate them on a scale of 1 to 10, one being poor and then 10 being outstanding. So let's start with safety management and when I'm saying safety management, I am referring to incident investigations, enforcement of a safe working procedures, LBIs, housekeeping, VFLs, task observations etc.

Participant 3: OK. Correct.

Interviewer: You know that whole a safety management system between 1 and 10, Where would you read them?

Participant 3: OK, so I rate them as a group?

Interviewer: Yes

Participant 3: Alright, correct. Let's go. In safety management, I will rate them a 6.

Interviewer: And that would mean they do investigations and enforcement of safe, safe working procedure.

Participant 3: Yes, yes, correct.

Interviewer: The LBI's, Housekeeping, VFL, task observation, safety meetings, inspections and compliance to a 6 level of your satisfaction?

Participant 3: Yes, yes.

Interviewer: OK. And then training and development. And by that I mean ensure training and licenses are valid and making sure that they manage the IDPs, helping production learners to grow, succession planning and cross pollination of skills. Where would you rate them with training and development with what I mentioned in mind?

Participant 3: Uh, I will give them in overall, I will rate them a 4. Yes.

Interviewer: Now quality and environment management systems, quality and environment, like audits, quality audits and environmental audits. Where would you rate them with this one.

Participant 3: No, I will rate them poorly also because they have, they have lack awareness in terms of environment. So I rate them also a 4 for because for instance, the guy still taking decision to pull dust on the ground, whereas there is an alternative.

Interviewer: Umm, so you mentioned people management earlier. I want you to read them here as well. But now here I'm talking about leadership skills, conflict resolutions, enforcement of discipline, commandment of respect, manpower management and team performance. Where would you rate them on this one?

Participant 3: Ohh, I rate them a 5 because specifically in my team I have, let's say the three, the two production shift supervisors have a very high leadership skills and then without even knowing it, they are applying it and then basically they are driving they are driving the performances of their teams, so I will give them a 6.

Interviewer: So technical understanding of the process I'm talking now process parameter management, RCA, short loops, process improvement and clearly expressing process challenges. On this one where would you rate them?

Participant 3: 7. Yes

Interviewer: OK, so technical understanding of maintenance like equipment specs, spotting functional failure, their involvement in equipment commissioning, project management if they are exposed to that and signing off of equipment after repairs and inspections. I'm not talking physically, them maintaining the equipment, just them having knowledge of this whole maintenance system. Where would you rate them?

Participant 3: Yeah, I will rate them a 5 because the structure that we have now, with the zone system, it contributes to their involvement in the maintenance of structure whereby as a production team they are bringing their input in terms of reporting, notifications therefore their understanding of how the equipment work just to make sure that they properly capture deviations and they report to maintenance.

Interviewer: So in terms of Computer literacy, the SAP navigation, time and attendance system, e-doc systems, pivot/ worksafe, Aspen, S-drive, Portal, smart system. Where would you rate them with computer literacy?

Participant 3: No, I will rate them a 3 because its only now that they get access to SAP because they didn't even know how to log into SAP and then to fetch document. So yeah, I'll give them a 3.

Interviewer: OK, so with all the scoring that you gave them, I'm going to focus on the lower ones, the Computer literacy, quality management and training and development. What would it take for them to improve?

Participant 3: Ohh what it would take for them is that they need to have a structured training, they need to go through a proper training like to acquire those skills because for me appointing someone and letting them dive basically is like swimming in the sea and then he doesn't know even where to start is not working. They need to be taken, for me the company has to develop them and give them the skill to be able to develop in those areas.

Interviewer: So how long do you think it would take for a production shift supervisor to settle in the position?

Participant 3: For the production shift supervisor to really settle in the position? It will take three to four years.

Interviewer: Three to four years?

Participant 3: Yes

Interviewer: OK. Do you think if you appointed someone with National diploma, like the guy you have now as an example? Would it fast track the process?

Participant 3: Ohh 100% because I see the performance of the current production shift supervisor that was appointed 2 months back, you can clearly see he has a skill like, he has soft skill which is already acquired like, he has a better understanding of general knowledge and general understanding of the workplace he is and then he is mature in terms of thinking. So yes, the employee appointed with a national diploma have something additional.

Interviewer: So so having said that, what is your take on the organization's decision to introduce National diploma as a minimum qualification requirement for production shift supervisor?

Participant 3: Initially I was resistant to it because we are used to this from the time the organization was created. It has always been at this level, the production shift supervisor was always taken from basically the ground floor developing the structure and routine. So I was a bit resistant initially. Once we wanted to bring a people with diploma externally who do not have the technical knowledge, but based on what I've seen now I'm basically a shifted, completely shifted my view about this process as I strongly believe that it is a good thing. It adds value because the guy come with some soft skill and some general knowledge as it come as a package and he just needs to be developed and even the development process goes much faster because he's easily trainable.

Interviewer: You know we are moving towards technology now. Do you think the production shift supervisors are coping with the new technological advancement that we are heading towards. Some that have already been implemented. If you look at how they navigate new stuff that are being introduced from the technological point of view, do you think they are coping?

Participant 3: Oh, no, no, I don't think the production shift supervisors are coping and I don't think first they are exposed to those new technology that's one of the challenges. Its like a for me I will say no they're not coping and at first they are not exposed and then therefore whatever they are exposed to, they struggling to catch it up because generally the new technology that we introduced to the blast furnace are not cascaded down to the production shift supervisors, it stays with the engineers.

Interviewer: This will be the last one now. So what I need to know from you is, with everything we touched on from the beginning of the interview until now. What advice would you give to the executive management? Like what recommendations would you give to the executive, and what would be the benefit of those recommendations?

Participant 3: Yes, I think my opinion. We need to be competitive out there in term of in our market and then the challenge that we experience in our business meaning the manufacturing industry it's critical that we develop our people is one of the area that we have been lacking yeah. In our business is to develop our people and to give our people the required skills. So for me then it's not the change in the business is also obvious because of the way it was done 20 years back

is no longer the same whereby you could take an employees at 18 years of age and then 35 years later he's still working in your organization and therefore you can reap the benefit of that experience. So for me they should put the structure in place. Uh, its basically a structure in place to be able to develop the production shift supervisors that we are bringing in because it's not obvious to find the guys. Also at the same time it is not easy to work and study at the same time. So for me, it's important that we develop, put in place a structure whereby when we acquire an individual like on a certain level, let's say a certain qualification, it is important that we have a structure in place to be able to develop both his soft skills and then his technical skills. So we are lacking on it. So when we acquire an individual like a production shift supervisor, now externally we will let him basically navigate through the issue without giving him the right support. What I mean by right support is the development let him go and sit in front of someone who can teach him about leadership and say the leadership is about this. Let him go and sit in front of a HR person who tell him HR is about this. These are the skill required to get the benefit out of your people or to get the best out of your people and how to manage the poor performer and how to continually grab the performance of the high performer. So this is one thing that we are lacking because we are not taking the full advantage of our people.

Participant 4

Interviewer: Do you want me to take you through the background again or you are fine with the background as outlined on the email?

Participant 4: Can you just quickly go through it, I last saw the email, I think 2 weeks back.

Interviewer: OK. Basically, this is MBA research trying to formulate a theory behind the organization's decision to introduce national diploma as a minimum qualification requirement for the production shift supervisors. So this is actually demarcated around the production shift supervisors and nothing outside of that. The idea is to get information about production shift supervisors from their managers since they cant be directly interviewed without causing unnecessary panic. So the aim is to get a view from the production managers? I have questions that will sort of lead us through the process.

Participant 4: OK.

Interviewer: How many production shift supervisors do you have in your team?

Participant 4: , I have three production shift supervisors

Interviewer: OK. Without mentioning their names. And if you look at them collectively, on average, how many years of experience do they have?

Participant 4: Two of them are quite new. They were only appointed last year, but I'm thinking of the one that actually took a package 2019 and then we brought him back when we were short of manpower, we needed a production shift supervisor. He has over 20 years of experience before he took a package. So, he is quite experienced, the other two I feel are very junior.

Interviewer: OK. But then you obviously dealt with a production shift supervisor before.

Participant 4: No, I was still a process engineer. I only became a production manager two years back.

Interviewer: Two years back?

Participant 4: Yeah, I actually started at the same time with this guy (experienced production shift supervisor). So, they actually appointed him when I became a production manager. They were initially in acting capacity and the proper appointment was I think early last year, yeah, 2022 beginning of 2022.

Interviewer: But combined years of experience including the acting period is more than 18 months?

Participant 4: OK, one of them will be two years, the one was not acting, there was someone who was acting but couldn't make it. So, one guy is about two years. One guy would be one year.

Interviewer: And the other one with 20 years of experience?

Participant 4: he is actually over 20 years but of those 20 years, I'm not sure how many were at production shift supervisor level

Interviewer: OK

Participant 4: He went on retirement and then we brought him back.

Interviewer: OK. But then it means in our discussion, we only going to consider the one with three years and the other one with 20 years plus because I need us to exclude this one because now, I don't want to distort the data with a guy who's been there for just a year.

Participant 4: OK, alright.

Interviewer: Alright so. do you know what is their highest qualification?

Participant 4: The one guy I think, OK, let me see the one with the within the longest. I think he has got matric. The other guy I think it's actually grade 11 we had to make an exception for him to become a production shift supervisor.

Interviewer: Then you are going to have to exclude that one, too. You are going to respond on one person.

Participant 4: Then that would be the guy we brought back, Yeah, the one with years of experience.

Interviewer: So, there is one with no experience and the other without matric?

Participant 4: Yes.

Interviewer: Let's stick to the one with matric and experience

Participant 4: OK

Interviewer: Now when I'm thinking about you saying you've been there for two years, since 2019 you were not there with section 189, so you wouldn't be able to answer me. What if I ask you if there were any positions that were cut?

Participant 4: OK, I know the structure that was there. Before there were four production shift supervisors, but one was sort of floating we initially had four shift system then went to three shift system. So even then, before 2019, we had three shifts, but then we had like a one production shift supervisor that was always floating whom we would use all over the place.

Interviewer: OK. Because the question actually was to sort of check if the production shift supervisor responsibility sort of changed because of section 189.

Participant 4: I would say their proper positions no

Interviewer: OK.

Participant 4: OK, the only thing that could have happened to say because of, but this happened prior to section 189, we had what you call charge hands that were gradually phased off, but they were actually faced off even prior to section 189. I think that phase off one happened I think is it about 4-5 years back. Yeah, had another….we had to reduce, that's when we phased off what you call charge hands, So this last one, no, it did not really change their scope, no.

Interviewer: But that one when the charge hands were reduced or removed, did it have any impact on how the production shift supervisors work?

Participant 4: In a way yes because they now have to cover the entire plant. These charge hands they sort of covered the entire raw material handling plant the issues in there. The production shift supervisors now have to cover the raw materials handling as well. So that gives them a bit more work and also these guys would also help in the permit office, So they are no longer there. The production shift supervisor has to spend much more time in the permit office. We don't have a stand-alone permit officer, so the production shift supervisor if he has a competent kiln senior, they cover the permit office. So, production shift supervisors now have to do a bit more work on the permit office, but instead of having three people who could technically cover the permit office per shift, we know have only two people. So that's more work for the production shift supervisor, yes.

Interviewer: So, in your opinion, do you think the production shift supervisors are coping with all the work? Obviously, we are referring to this one gentleman

Participant 4: It's a bit too much for them. We actually trying to motivate to see if they can get a full-time permit officer. If we are on, let's say what we call a reline or a major project, then he's basically tied to the payment office, and if they also have plant issues then they their administrative side of the job suffers a lot. Because if the charge hand was there, he would be assisting taking care of that, but now he doesn't have somebody to help him. So, everything is now on his hands. There is now a lot more stuff coming in that is expected of the production shift supervisor. Yeah.

Interviewer: Can you mention at least one or some of their strengths?

Participant 4: The biggest strength will be, I think it will be with knowledge of the plant and which makes it easy, like on task observations. That's the biggest thing that the guy has.

Interviewer: OK. And then the weakness?

Participant 4: I would say administratively, its where the weakness is. There has to be a formal training and the job planning. Yeah.

Interviewer: Alright, in the past five years there were couple of obviously production shift supervisor position advertised. So, these adverts were compiled and categorized to reflect the production shift supervisor responsibilities. I need you to rate them between 1 and 10, one being poor, 10 being outstanding. So, let's start with safety management. I will go through the list with

you. On safety management, and I am specifically referring to incident investigations, enforcement of safe working procedures, LBIs, housekeeping, VFL, task observations, safety meetings, SHE rep inspections and statutory compliance. Between one and 10 where we would you rate this guy?

Participant 4: I will put it at a 6 Yes

Interviewer: To do this, it is 6 OK, and then the training and development? And I'm referring to ensuring the training and licenses are valid, the IDP's are in place, production learners are getting exposure, succession planning, cross pollination of skills. Where would rate this?

Participant 4: I will say it's a 5 and more work needs to be done there.

Interviewer: It's a 5. And then quality and environment and I am referring to quality and environment management systems including a handling quality audit and Environmental Audit. Where would you rate them?

Participant 4: I doubt he has even ever been exposed to this. This one will be a; I will put it at a 4

Interviewer: 4?

Participant 4: Yeah, he's not very much into this no. Like even exposure, even real exposure to this, this has been predominantly done by the managers.

Interviewer: So, the pollution of the plant is not involved in trying to manage the environmental KPIs also?

Participant 4: In terms of the day-to-day pollution, they are to a certain extent involved, and then call upon the maintenance department. The day-to-day pollution, for instance, they will make a report, they will try and call the guys to come in and sort it out.

Interviewer: And then quality?

Participant 4: Quality is more the kiln senior who is involved in making sure that the kiln gives us quality. The guy who is operating the kiln. The production shift supervisor is just there to sort of oversee but the real driver of quality is the kiln senior.

Interviewer: But his portion there in terms of quality and environment, would you still rate him a 4? His involvement in all of these things that you discussed now in terms of quality and environment; would you still rate him a 4?

Participant 4: I would put it as an average of 5 on the involvement in those systems not more than that, yeah.

Interviewer: OK, but I'm not forcing a 5, right? If it's a 4, its 4.

Participant 4: No, no, I can put it a 5 given what you said in terms of their involvement, especially on the environmental side, I will put it a 5 OK.

Interviewer: And then people management and I'm referring to their leadership skills, conflict resolution, enforcement of discipline, command of respect, manpower management and team performance. Where would you rate it?

Participant 4: 6

Interviewer: 6. OK. And then the technical understanding of the process like the process parameter management, the RCA short loops process improvement, expressing the process challenges.

Participant 4: Yeah, that I can give him an 8, yeah, 8 minimum.

Interviewer: And then technical understanding of maintenance. I'm talking now understanding the equipment specs and that he is actually involved with being able to spot functional failure, being involved in equipment commissioning maybe after shutdown and so on. Maybe if they're exposed to project management and signing off of equipment after repairs, and then general inspection. Where would you rate him there?

Participant 4: Him again? I will give him an 8 because he is actually former millwright

Interviewer: Oh, he is a former millwright?

Participant 4: Yes. He has been for some time out yeah, but he's a former millwright yeah

Interviewer: So, then he has got an artisan qualification?

Participant 4: Over and above his matric, I understand, when I got here, he was already a production shift supervisor, but I understand at some point in the past he was a millwright, For how long? I am not sure.

Interviewer: he is a qualified millwright?

Participant 4: Yes, I have not confirmed on his CV, but I have been told he is qualified millwright. Yes. For how long as a millwright I am not sure.

Interviewer: Then his Computer literacy, how is it like, in terms of SAP, time and attendance systems, e-doc systems, pivot/ worksafe now and then aspen and S-drive. Where would you rate him?

Participant 4: I will put him on a 6, some of it is because they have not been doing its lack of exposure. With the exposure there can be improvement, but yeah, it's an area that I'm actually working on right now. So, I will put him at a 6.

Interviewer: So, if he is not doing these things, who's doing it for him?

Participant 4: In terms of production shift supervisors, they're not doing much in SAP. Most of the SAP stuff was being done by the production managers and then they would let the planners do that for them. Actually, it's only now that we are enforcing SAP because we want them to put in notifications they didn't even have SAP and Aspen OK we have given them but yeah, they are they are now understanding aspen but still we cannot download to excel and all things like that when I get time, we'll get to that if there's a need for them, but for now I just need them to be able to follow trends and aspen, they are not able to do that. So yeah, there are still some issues. I think part of the problem is that DR is too centralized on the process engineers and managers and the production shift supervisors were just managing people.

Interviewer: But then what is the Computer literacy scoring based on?

Participant 4: OK. As I say, aspen they are able to do that, SAP with training we see the things that we have asked them to do, they're not able to do but with very limited scope, but most of it is to do with training. Time and attendance they can do that 100% percent there's no issue there they do it on their own. They also do some excel work, some of the reports are in Excel that we do, so that they are able to do.

Interviewer: So now they the lowest score you have given is a 5 and this is on training and on quality and environment. So, what would it take for them to improve?

Participant 4: Exposure is a big thing. Exposure to the various systems that we have, then they need that exposure and also the time for them to be able to because currently they are too swamped in terms of work I say with the charging position going and more responsibilities coming in there is a lot you know, it's the safety files that they need to make sure they are in place now they need time also learn these things.

Interviewer: So, the production shift supervisor basically spends a lot of time on safety side of things.

Participant 4: Yeah, safety

Interviewer: OK.

Participant 4: And also doing the planned task observation and a plant like DRI is, it's not like the plants that are very compact, you spent a lot of time in the plant because of the way the plant is laid out. Our plant is stretches from one end to the other end, that's a good maybe almost approaching 400 meters. Yeah, yeah

Interviewer: how long does it take for a production to settle in a position in your plant?

Participant 4: To be honest, on the DR plant if you bring somebody who is technical switched on, you need maybe if you switched on, maybe a minimum of 12 months.

Interviewer: So, this brings me to the next question. Do you think do you think this could be fast tracked by appointing someone with a national diploma, for example?

Participant 4: Definitely yes. Because it would work mostly on the administrative and some of these technical issues, things like except your Excel and on the administrative side and also , yeah, somebody who just catches on to staff much quicker. Yes, it would definitely help.

Interviewer: My next question would be what is your take on the organization's decision to introduce national diploma as a minimum qualification requirement for production shift supervisors?

Participant 4: Well, yeah, I fully support that. I do understand the issue for people to be experienced, but somebody who is technically qualified, he can cover on the experiences. His learning curve is very steep. So, and also, we have all these other guys on the ground. So, I'm not too worried about their learning curve, but in terms of the input that they can bring. Our biggest weakness I think is maybe on the administrative systems and somebody with a diploma will be will very much open that regard.

Interviewer: Now what I want to know, obviously we are going a technological now this is where the world is going. So, do you think your production shift supervisors right now are coping with the little technological advancement that we have currently? And I'm not even extrapolating into the future, I'm saying the current system right now technologically, do they cope?

Participant 4: Yeah. With training they do, it takes, it's all about the exposure and the training you give somebody, but they do when they get the right training.

Interviewer: And the level of complexity doesn't matter? they would be able to cope?

Participant 4: No, it matters after a certain point, yeah, things are getting quite technical with the energy management, with the going green especially for the DR plant, it's going to be a big thing. Yeah. OK some of the things haven't really been brought down to them, but yeah, some of it might be a challenge. It all depends on your educational background and how much you are able to read on your own and keep yourself updated because you cannot always get everything even from the work environment. Sometimes you need to do your own research in the background.

Interviewer: So now I having said that the production shift supervisors that are here now after all of these developments that are in the pipeline for DR, will they still be able to cope?

Participant 4: In particular, the one we are talking about should be able to, I expect him to be able to cope. The other ones its still, yeah, touch and go and with a lot of help Yeah, they need a lot of help.

Interviewer: So now if you were to speak to the executive, what sort of advice would you give them? What would you recommend to him and what would be the benefit of those recommendations? I'm thinking about everything we discussed from the beginning of the interview up to now.

Participant 4: Yeah. The first thing is that I do agree with a view to say we need production shift supervisors that are already with at least a diploma qualification because they have a very short learning curve and in terms of going forward with the technological advances, I think they are more adept to catch on, the learning loop is much shorter for them. So, I would definitely go for those. For our current production shift supervisors as they are, maybe they would need also to go on some intensified training for them to keep themselves up to date. The only challenge is to create the time, which we don't seem to have. Our production shift supervisors are basically swamped. We need time to train them, and the current set up with the current manpower as it is, it's almost impossible to get that.

Participant 5

Interviewer: Okay, thank you very much for making this time, I know you are very busy. This is an MBA research project triggered by the organization's decision to introduce National Diploma as a minimum requirement for production shift supervisors.

Participant 5: Yes.

Interviewer: So, the aim is to try and formulate theory and reasoning behind it. In essence it seeks to determine if the decision is justified or not because at this stage it is not clear. So, I've got a couple of questions that I'm going to ask. The first one is how many productions shift supervisors do you have in your team?

Participant 5: 6

Interviewer: OK, six of them. Do they all have matric or is there anyone who's got anything above matric?

Participant 5: Uh, as far as my knowledge, is that all got matric.

Interviewer: They all got matric only

Participant 5: Yes

Interviewer: Alright, alright. And the years of experience on average, not one by one?

Participant 5: Is it the entire experience in the company or just as production shift supervisors?

Interviewer: Just as production shift supervisors

Participant 5: I guess around 10 years

Interviewer: Average around 10 years?

Participant 5: Yeah, I guess around that somewhere. I don't know exactly because, but somewhere around that.

Interviewer: Got it. So, remember section 189 in 2019? did they cut any positions from your department?

Participant 5: Not production shift supervisor positions, but other positions, yes.

Interviewer: So those positions that were cut, how did they affect the production shift supervisor's work, if any?

Participant 5: I think it might get bit more difficult on the….I have got two lines, the pickle line and the tandem. On the pickle line I don't think it was a big influence, it was just a position that wasn't really used. But on the tandem, it was quite difficult because we sort of ended up with one person short per shift. So, the production shift supervisors were a bit more under pressure to keep the lines running.

Interviewer: So right now, with things as they are, do you think the production shift supervisors are coping with all of the work?

Participant 5: I think they are coping with the work; I am not always so sure that they have knowledge of what to do or to do their work correctly, some of them

Interviewer: Or so the problem is not being sure whether they can do the work correctly, but in terms of coping with the work, what they currently have, they can cope with it

Participant 5: I think they can cope with it, yes

Interviewer: Without mentioning their names, what is their strength? Think of them collectively as production shift supervisors together. What do you think is their strength?

Participant 5: Mostly I think one of their strengths is their knowledge of the line. So, because I have got two or three production shift supervisors that were not around this area, they struggle a bit more with knowledge of what's going on in the line. So, the ones that have got longer experience in this area are much better with the knowledge of the lines and they can sort out problem easier.

Interviewer: Umm. And then what do you think is their weakness?

Participant 5: Some of them, that's got the lack of experience in the area, not to say that they have got lack of experience as production shift supervisors, here and there…..there is a guy that has got the lack of working good with people so they don't have the……some can keep the discipline and know how to keep the shift running, some the people walk all over them.

Interviewer: The problem is people management if you were to sum it up?

Participant 5: Yes, people management is nice word probably for it.

Interviewer: OK, now there is a summary of a couple of adverts in the past five that were put out for production shift supervisors. They are summarized into categories; I am going to take you through the list. So, in the list what I need from you is just to rate them from 1 to 10 collectively. One being poor, 10 being outstanding. So, in terms of safety management and when I'm talking about safety management, I'm referring to incident investigations and enforcement of safe working procedures, the LBIs, housekeeping, you know, all of those KPIs that you always deal with. Between one and 10 collectively, where would you rate them?

Participant 5: Probably at 5 for the six.

Interviewer: 5 or a 6, so which one do you want me to record?

Participant 5: I will put a 5, its fine

Interviewer: OK, similarly now I'm going to training and development. Under training and development and I am talking about how they make sure that the training is in place the licenses are valid, management of IDPs, production learners are growing, succession planning, cross pollination of skills. In that particular one where we would you rate them?

Participant 5: 6

Interviewer: Six, OK. And then quality and environment and I am referring to, like them being able to participate in quality audits, Environmental Audit and things like that, everything around the quality and environment.

Participant 5: Uh, probably a 4. They really do it much.

Interviewer: They don't do it much. OK. And then people management, you referred to it, I'm also talking about their leadership skills, the conflict resolution, enforcement of discipline, their command of respect, manpower management and team performance in general, with that one, where would you rate them collective again?

Participant 5: That's a problem. Some of them I will rate 2 and some of them I will rate 7 or 8, but let's give it a 6 in general.

Interviewer: It's a 6 general

Participant 5: Umm

Interviewer: OK. And then technical understanding of the process like, the process parameter management, RCA, the short loops, processed improvement and whether they can express the process challenges. Where would you rate them on that?

Participant 5: That's a very difficult one, I have got really two different teams, but let's give it a six again, some of them I would have rate very high and some of them I would rate very poorly. Yeah, yeah, yeah.

Interviewer: Because I need them to be rated collectively because they still affect you as a production manager in terms of how they do that…

Participant 5: I understand that, so that's six its fine.

Interviewer: OK. And then the technical understanding of the maintenance like equipment specifications, being able to spot functional failure, equipment commissioning, their involvement there. The project management, if they are involved in there, the signing off of equipment after repairs and inspections of equipment in general, where would you rate them on that one?

Participant 5: You must just understand, I have got only production guys, so they don't really do too much of what you are asking from me now on that one.

Interviewer: But then their little contribution in maintenance?

Participant 5: Yeah, that's fine. Say 7.

Interviewer: A 7, OK, great. And then the Computer literacy? How they navigate SAP, how they do time and attendance, e-docs, worksafe systems, Aspen, S-drive, smart etc? Computer literacy in general.

Participant 5: 6

Interviewer: 6 alright. The lowest score…alright, the Lowest score you gave is in quality and environment which is 4 and then the other one is 5 safety management. What would it take them improve on these particular ones?

Participant 5: I think on that first one (quality and environment), the one that I gave them a 4 because they really seldom do it. So probably more experience, more of doing stuff like that, so more often do quality audits. The thing is currently that really don't do the quality audits, We as management and technical personnel normally does that.

Interviewer: OK. And then the safety management one, those that are struggling let's say, what would it take for them to improve?

Participant 5: Yeah, that's a good question. Probably with a bit more training and I don't know, more….let's say training maybe more experience to have real injuries and how to handle it, to cope with it and ensure that they put in their corrective actions. There may be no really injuring persons, but maybe they need more practical experience, not just the paperwork, but to really understand what they are busy doing

Interviewer: Do you think if you were to appoint a person with a National diploma, the lower scores, would it fast track the knowledge?

Participant 5: Probably. If they've got, say, like a diploma in engineering or stuff like that probably would have been better for them to have that qualification

Interviewer: OK, OK. So now having said that, what is your take on the organization's decision to introduce National Diploma as a minimum requirement for production shift supervisor?

Participant 5: In general, I don't think it's a bad idea, there is definitely good to come out of it, but my worry is it's going to be a problem for the person himself, the people management because the people are going to be very negative about it. The thing is, it's the next step for a guy that's a senior process controller to aspire to be a production shift supervisor now, he's never going to have a chance to be a production shift supervisor. And if your senior process controller is not in your side and I've seen that also with people that's coming from outside that we were forced to take on at times, the people on the floor are very negative because of that. So, they try not to help the production shift supervisor. So, I 100% get the idea where it's coming from. Why they want to employ people, that's got the diplomas because in general they work performance on Computer literacy and safety and quality probably would be better, but I think the people management is going to kill them at the end. It's very difficult to tell me you are going to put the guy that's got out of university or Technikon wherever he was ten years of experience working somewhere and now suddenly he's going to be the production shift supervisor and the guy that's thirty years on the line that knows everything and how to run the line is going to listen to that guy. That's where the problem is going to come in.

Interviewer: So now since you on the topic of National diploma, do you think the production shift supervisors are coping with the technology in the plant?

Participant 5: Ah, I don't think they are always coping with the technology, and I don't think they have the knowledge always which they are supposed to have. And again, it's not everybody. It's more generalized these guys that really understand what's going on in their process and there's guys that's not really understanding what's going on in the process. And as a production shift supervisor, I don't think it's really 100% necessary to understand what's going in on the in the process, but I don't know if the guy's going to have the people's skill to handle the situation. That's my worry.

Interviewer: OK, so now with everything is said from the beginning of the interview up to now. What advice would you give to the executive management with the decision that is made regarding National Diploma as a requirement? And I need your recommendations and the benefits of the recommendations also

Participant 5: I would probably go to the guys that's like the for example….Obviously it doesn't help to look at the guy that's 50 or 55 and he's maybe his last hope of becoming a production shift supervisor, but let's go to the guy that's 40 or younger that's a real bright performer. I would, here is the thing that you will have to start by giving them a chance to study somewhere or give them

a career path that somehow, they can also get the diploma that's necessary to do that. If you give the guys a chance that there is an opportunity for him to become also a supervisor and it's not going to be forced on to him, then it is his decision if he wants to study further and become a supervisor. If you do that, then at that stage tell the guy you didn't want to study, we are going to appoint somebody that has got the qualifications. I think that way then you sort out half of the problems of the fact that the guy will not get the position even if he was the most qualified worker on the line. You give him the opportunity to study and to tell him, OK, I gave you opportunity, you didn't want to study, but I still have the wish that the guy is qualified to do the job. You sort out sort some of the problems that you will have with this. I think that's one of the options on that to make it easier for us to do this transition to that type of person that is qualified to do the job. So, I don't think it's a bad idea to get the person to be qualified, but then you have to give the guys on the floor also opportunity to feel that I'm not excluded because I didn't study after school

Interviewer: You want to throw a ball in their court and say, look, I want you there, but now here is this new requirement, do something

Participant 5: Do the studies and you can get the position or don't study and don't complain if we put in somebody that's got the qualification. With that I think also if you want to get people from outside that's got the qualification at least within a year or two in a position, don't immediately make them a production shift supervisor. Use them to shadow maybe a current production shift supervisor and see if they can cope with the pressures of being a production shift supervisor. It's not easy to carry people, extra people in the company, but maybe you will pick out better guys, give them a two-year temporary employment or something that you can see if they can cope with the situation because a production shift supervisor is also a special kind of creature, the ones that is really good. It's not your normal guy, the guy that can think on his feet and fix problems like I always tell my production shift supervisors don't come to me and tell me the toilet door is skew, you must figure it out yourself. If you don't have that ability, then you must not become a production shift supervisor. Just make sure that they understand what it means to becomes a production shift supervisor because a guy that has a national diploma in engineering, I don't think he's aspirations was to become a production shift supervisor. His aspirations were to become a technical person. So, you must also make sure that the guy knows what he's going into not just uh I am going to become a production shift supervisor. He must actually understand what this is, what the job requires, like I said, the production shift supervisor is a special kind of person is not a person that's got the diploma. So, you need to have knowledge of what he is coming to do here.

Participant 6

Interviewer: I don't know if you have read the background of the interview. Do you want me to repeat it for you?

Participant 6: No, you can, yeah, summarize. I haven't really had time to go through it.

Interviewer: Alright, so the whole point is…..remember when the organization decided to introduce national diplomas as a minimum requirement for production shift supervisors?

Participant 6: Yes.

Interviewer: So, the whole point of the interview is to try and formulate a theory behind the thinking we with an intent to sort of try and justify, if possible, why this is necessary. So, in order to collect data, there's a couple of questions prepared. I have been interviewing a number of production managers and you are probably number 6 now. I am supposed to interview about 9. OK, so now I am going to start with the demographics. How many production shift supervisors do you have in your team?

Participant 6: I have got 4.

Interviewer: So roughly, if you think about them collectively on average, how many years of experience do they have?

Participant 6: Umm my situation is its sort of like a bit different. Nah, umm, the coal plant production shift supervisors were actually……..the ones that have got the most experience are coming from other sections which is arc furnace. So, I have got three guys that were redeployed from arc furnaces when they were closing the arc furnace plant and one of those three guys was a production shift supervisor from arc furnaces and the two guys were senior process controllers. So, they came to join a coke making in 2019. So, we can say one production shift supervisor had at least I think five years when he came to coal plant in 2019 and then the two production shift supervisors have got roughly 6 years now as production shift supervisors in the coal plant and then the 4th guy, I have promoted to be a production shift supervisor, he was promoted from last year beginning of last year. So that's the years of experience that they currently have at the moment.

Interviewer: So, he has been a production shift supervisor for over 18 months, the most recently appointed one?

Participant 6: That's correct.

Interviewer: Then they all qualify for this study. So then when you talk all of them combined, in terms of their qualifications right now, what is their current highest qualification?

Participant 6: The new production shift supervisor that I promoted last year, beginning of last year fortunately has got a diploma and then the three production shift supervisors, I think they've got matric.

Interviewer: Then I'm going to change my statement little bit, the one with a diploma needs to be excluded at least for now.

Participant 6: OK.

Interviewer: So, you going to focus on the other three because part of the exclusion is that they must have minimum 18 months experience as production shift supervisors and then they must only have matric because the issue was matric. So if the person has a national diploma, then he is already outside of the scope.

Participant 6: Yeah. No sure it makes sense.

Interviewer: Alright. And then now, 2019 section 189. Did they cut any positions from your department?

Participant 6: On the production shift supervisor level?
Interviewer: Well, everywhere, whether it's the production shift supervisor anything that….because the next question would be did the position reduction affect the supervisor scope of work? So, I'm trying to build up towards that question.

Participant 6: Yeah, they actually cut quite a number of positions during that section 189 and positions that were affected were actually on the operations in terms of you know, operator level.

Interviewer: How did that affect the normal duties of production shift supervisors?

Participant 6: I would say it had a negative impact because if you reduce the manpower under the production shift supervisor level that means the supervisor has to, you know try and be more effective in terms of ensuring that those certain positions have been manned or if not he needs to try and come up with plans to ensure that their work still is carried out as you know expected because the reason why I'm saying this, those four positions that were actually you know cut during section 189 in 2019 it's a J4 which is a manning point you know positions. So you definitely need someone to be in that you know manning position because it's a requirement. If you look at our you know, operations at the coal plant, it's more of like a chain. So unfortunately, one of the positions that were affected during that section 189 was a J4 position, which forced the production shift supervisors to think out of the box in terms of how he is going to manage, you know, and that link that has been now affected.

Interviewer: So, having said that, do you think production shift supervisors are coping with all the work? current situation.

Participant 6: Umm, you know to answer your question, maybe let me start by you know, saying something before I can you a direct answer. I think any company that plans or, you know, embarks on doing a restructuring it needs to be planned properly and changes that you want to make. You also need to ensure that how are you going to cope with these changes going forward and how have you empowered your team to be able to manage the situation? So unfortunately, in our case was that all these changes that were brought in, in our company, I don't think that management thought about the after-effects of the changes and in my view they did not, you know, empower or let's say equip you know production shift supervisors and managers to deal with the situation, with the new normal if I may say. So, if I look at what has happened, I wouldn't say that the production shift supervisors are coping with what is, you know, happening at the moment because they were never prepared for this. If you want to ensure that you have a successful, you know, let's call it section 189, you need to ensure that you prepare your workforce where you have to cut a position you need to introduce technology you know so all these things they need to link up.

Interviewer: You are touching on technology, but we will talk about it later because it's one of my questions here that I need to ask at a later stage. So no, jumping onto the next one. Now also here we're looking at them collectively. What, according to you, is their strength collectively.

Participant 6: Umm, if I look at them as production shift supervisors, I will say in terms of the plant knowledge, they know the plant very well which is something that is viewed as a strength.

However, knowledge of a certain section or plant is not good enough if you don't have, you know people that will execute the task. In this regard, with the positions that we reduced from section 189 in 2019, it created a big negative impact in terms of, you know, performance and sustainability of what we are doing at coal plant. So, knowledge wise I will give them credit to say they really know what the process entails and what is required. But in terms of staffing, it becomes a challenge if you reduce manpower and still expect people to deliver on the same, you know KPI's or output.

Interviewer: Well, then, similarly what would be their weaknesses?

Participant 6: Umm, the changes that were brought in from 2019. Like I mentioned earlier on, if you don't prepare people psychologically and also give them tools to be able to achieve what you require from them and very few that can still carry the spirit of ensuring that they deliver on the KPI's regardless some they will throw it back at you as management and say if you don't give me the tools to achieve certain KPI I can only do what I can and psychologically it makes people not to go an extra mine because they feel that this was just a management, you know, strategy to punish them. Like I said earlier on, if you don't include people from your introduction of your change in the organization, you sort of like lose their buy in. So, they will do their bare minimum so that they don't get, you know, into trouble or they don't get disciplined, but they will always view this change as one of your weaknesses as management because it was never planned properly. It was never communicated properly with people and management didn't get the buy in from the employees because as soon as you get buy in from someone, you can expect that someone to go an extra mile to ensure that certain things are done in a proper way. So, I will say with all these changes that were implemented in the organization, I have seen production shift supervisors just doing the bare minimum, which does not always necessarily guarantee you a better performance, you can clearly see that this person is just doing this to ensure that they are not in trouble. But you also have a feeling that they are not going an extra mile and it becomes difficult for you to push them because the buy in is just not there.

Interviewer: So, if you were to sum it up and say I would regard this as a weakness, what would that be? Because they are throwing it back at you. They are saying management, but obviously you are making observations as well, you can tell that if they were to do this all the frustrations would go away.

Participant 6: In my view, I would say it will be lack of commitment.

Interviewer: OK.

Participant 6: Yeah. Because if you've got a team or an employee which lacks commitment in the long run it punishes you as an organization, because those people, whatever that they will be doing, they just doing it to stay above water. So in my experience, I have seen that the impact after this has resulted into poor, you know, commitment and poor ownership.

Interviewer: Alright, I have a summary of all the production shift supervisor advertisement in the past five years, they are categorized into KPA's. So, I'm going to ask you to rate them between 1 and 10. And 1 would be poor and 10 would be outstanding. So, I'm going to start with safety management and when I am talking about safety management, I'm referring to incident investigations, enforcement of safety procedures, LBIs, housekeeping, you know, all of these safety KPI you are always expected to make sure that you comply with between 1 and 10. Where would you rate your team collectively?

Participant 6: Umm, I would say it's a 4 and the reason why I am saying it's a four is because of, like I alluded to the things that we've touched on before. Recently, if you look at the…let's say the condition of the plant with regards to all these changes and us as managers and not being able to drive the change and ensure that before we can even implement these things we engage the employees and then we get their buy in, in most cases you really have to push people to do very basic you know kind of things like to report your minor incidents your near misses to report unsafe acts. And if you have a, let's call it an incident in the plant, a production shift supervisor not having you know the courage to investigate it without, you know, the production manager pushing him or instructing him or giving him timelines. So, in my experience, I saw that all these changes have actually, you know, gave birth to a very negative atmosphere. If I can say, where production managers, I think they have a lot to do now because you need to push people from, you know, your production shift supervisor level down to your, you know, your cleaners in the plant because unfortunately one thing that uh, management uh didn't pay attention to, if you if you don't get the buy in uh from the production shift supervisor level. This bad, you know, or negativity in the atmosphere and sort of like, you know, runs down from the production shift supervisor all the way to your cleaner. So, the impact becomes very severe, even though management was only maybe looking at the production shift supervisor level and say if we make changes here, we expect changes all the way down. But unfortunately, in this regard, if you get a lot of pushbacks from that level, It affects or it impacts even your operators, your process controllers, your cleaners, it affects actually everyone. Yeah, because at the end of the day, managers are now sitting with a big, you

know, burden in terms of how we fix this going forward, how do we ensure that we still maintain or achieve the desired KPI for the plant.

Interviewer: So basically, your standpoint is, if you mess around with the production shift supervisor, you mess around with people on the floor?

Participant 6: Yeah, that's my view and the reason why I'm saying this, we as managers of the plant or leaders of the company, we are failing to understand that, and supervisors spend a lot of time with employees. These guys are working shifts, they, in a way, they become whether you like it or not. They become a team. So, if you mess up with that team, you end up seeing yourself that you are on your side, you are on your own and the rest of the employees are on the other side of the road.

Interviewer: Alright, so in terms of training and development and now I'm talking about ensuring that training is in place, the licenses are valid, IDPs are progressing well, production learners are growing, succession planning on shift and cross pollination of skills in general, between 1 and 10. Where would you rate the production shift supervisors on training and development?

Participant 6: I would give them a 5 and the reason why I have got these low scores is because of, you know, historical events. What we are dealing with now because of section 189 in 2019, we are dealing with a lot of negativities within the teams. We are dealing with a lot of resistance from the production shift supervisors. We unfortunately as managers, we are getting blamed to say we actually caused all of this. We have started this, so it becomes very difficult as a manager to actually defend it when people are pointing it back at you and say you are the one who caused all of this. In a way for me because I have been working with production shift supervisors for quite some time, I tend to understand it because at any given moment when you want to introduce a change, it is very, very important, you know, important to ensure that you plan it accordingly and like I mentioned earlier, on one of the key you know points or elements in driving the change is to ensure that you have got the buy in of the people that you want to implement the change on.

Interviewer: And then the quality and environment, I will be referring to like how they handle quality environment management systems handling quality audits. If they do, also environmental audits or their contribution to the audits or even quality systems and environmental system.

Participant 6: Yeah, I will also give them a 5 unfortunately. Yeah, these things are, you know, intertwined. Umm, everything that we have to achieve as a company now going forward it

becomes a big you know struggle because we really need to embark on changing the mindsets of these production shift supervisors. We need to go back to basics. We need to start and build teams again because that teamwork thing, that going an extra mile kind of a thing, it died long time ago. But like I mentioned that the production shift supervisors these days they only do the bare minimum just to ensure that they are not in trouble.

Interviewer: Now I'm interested in hearing how much you are going to score them in terms of people management, and I'm talking now leadership skills, conflict resolution, enforcement of discipline, command of respect, manpower management and team performance. Between 1 and 10, where would you rate them? I mean there is problems with section 189 and all of these things, but they must still do the job. So how do you rate this one?

Participant 6: Umm, it's a 4. If you were to zoom into my section and this is what I've been conveying to the general manager and also, I tried to convey the very same message to the previous general manager before he left the organization. Senior managers of the company, they have, let's say a lesser understanding of the depth of the problems that we are dealing with. It's like, umm, they are looking at this problem from very far. Now if you look at people that are working with these guys directly, which is your production managers, we really understand what the cause of the problem is and, we see these things and we deal with these things on a daily basis. Now if you look at how our production shift supervisors especially the coal plant conducts themselves in terms of discipline, to ensure that certain things are followed, and policies are implemented and certain things are done in a certain way, there again they tend to push it back to management to say managers must sort it out. I mean the reason why I'm saying this, at some point I was obviously, you know disappointed at the level of how my production shift supervisors view safety, discipline and enforcement of certain rules in the organization to such an extent that you, you try and convince people to go back to our SOP's and look at what are the requirements and what is expected from you know a production shift supervisor, from a specialist, from a manager's point of view in terms of how to drive these things and you see people they tend to brush off these things. And unfortunately, if you look at cokemaking a lot has happened, you know, over the past five years, which has sort of like created a very bad atmosphere in terms of discipline and in terms of who needs to enforce discipline. I mean, I'm talking about managers now who chose to sort of like, you know, ignore their responsibilities because of, you know, threats that are coming from employees. Because employees that have now tend to do what they want to do regardless of what the policy is saying, regardless of what you know, disciplinary code of conduct is saying in the company and unfortunately people allowed, you know, that change to happen for I would say at least for two years and in my view, this is something that was not or that should have never

been allowed to happen. And currently you see that employee when they do these things, they feel entitled and then they feel this is how things are done you know in Cokemaking. So, with that in mind, I was then forced to start, you know, disciplining my production supervisors. The reason why I had to do that and certain you know employees would come to work maybe 2 hours late, some would not even report for duty and the production shift supervisor would not even, you know, bother ask questions like where is this person and for me? It was very, you know, surprising that a production shift supervisor can manage, you know, to run the entire shift without certain, you know, employees in certain manning positions. My question was how you as a production shift supervisor going to ensure that you achieve certain you know KPI's if you don't have you know the full complement of your stuff? I am not sure if you are aware that in 2021 I had to move to Newcastle and then 2022 I came back to Vanderbijlpark and when I came back I saw all these changes which in my view you can never achieve any KPI and you can never, you know, manage a plant like ours and achieve your targets if you if you now start you know, derailing on these policies, and you know, discipline. For me it was very, very surprising. But yeah, just to summarize, and unfortunately the situation in cokemaking especially, requires management to go back to basics to ensure that certain things are done according to book. You know we have clear SOP's and SWP that are stipulating how certain things should be done and if not, what actions must be done.

Interviewer: So, you can see the whole collapse of HR system basically.

Participant 6: Yeah, it's sad, you know, because I worked in Coke making before this new, you know, and I came back, and I saw all these changes and that it is painful to see that things can collapse to this level.

Interviewer: Let's go to the plant now. Their technical understanding of the process, you touched on it earlier, the process parameter management whether they do RCAs, short loops, process improvement and whether they can clearly express process challenges between 1 and 10 on this one where we should rate them?

Participant 6: Yeah, I'll give them a 2. You see, the thing is, in terms of their knowledge and make no mistake, the guys, they know the plant and knowing something and doing something are two separate things. In my view, I think the production shift supervisors also took advantage when they saw that the management system has collapsed. So, it sort of like gave them an opportunity to also relax because they knew that if you don't do what is required no one is going to ask you anything. So, I believe it is human nature, we as human beings we have this thing in us that we

want to do as little as possible especially if no one is going to ask you questions. It depends on you know certain individuals, some people they do certain things not because they want to please someone they are doing those things because they believe in those you know certain things so unfortunately because of how things have changed, people have tended to neglect, you know, basics. I am not even looking at improvement because now like in most cases when I talk to people, I don't talk about improvement. I talk a lot about going back to basics. Then, once we have, you know, get into doing basics, then we can talk about how we improve.

Interviewer: So, it's a 2 between 1 and 10.

Participant 6: Yes

Interviewer: But then you guys are sitting with problems.

Participant 6: Yeah, it's actually, you know for the guys that are not in coke making, it's actually worse than that, you know on other sections. Yeah, it's a complete disaster, you know, and this is what I was telling the general manager that, you know, Coke making can go back to where it used to be provided management takes a stance. You take a decision, and you stand by your decision.

Interviewer: technical understanding of the maintenance, I know they don't necessarily execute, but their contribution to maintenance activities like for example signing off equipment after repair, inspections in generals. Whether they are able to spot functional failures, do they even understand the equipment spec, that's what I mean by technical understanding of maintenance and I am talking all in terms of their contribution, not them being in the forefront of maintenance.

Participant 6: Yeah, you know all those things at Coke making. They used to be up to standard, but you know, currently it's not happening. It is definitely not happening and like I'm saying I see the behaviour of employees, whether it's a production or a maintenance employee, it doesn't matter. But for me, when I observe and analyse the situation, my root cause takes me back to management. Because things never used to be like this. My question is now, why did management allow things to be like this?

Interviewer: So, this one, as much as we are going to take it back to management as a root cause, if you were to score them on this one, how much would you score them?

Participant 6: It's poor. That is why I am sitting at 2, it's very poor, you know. It's bad.

Interviewer: So, the technical understanding of the process and technical understanding of maintenance will both, well each be a 2.

Participant 6: Yes. Let me explain it like this. It doesn't mean that when I give these guys a 2, they don't understand what needs to be done.

Interviewer: it's the output. The output is a problem.

Participant 6: The thing is, yeah, yeah. They are not willing to do anything because they know that there will be zero consequences and you normally find this when you corner someone, you see there are those employees that would not give you anything throughout the course of the week. The day when you call a short meeting and then you corner them, you get more answers from that interaction. But in terms of, you know improving the plant, you don't get anything. So you then get to realize that this individual, it doesn't mean that they don't understand, they do understand, but they are not willing to do anything.

Interviewer: Computer literacy? and I'm talking about SAP, time and attendance system, e-docs, the worksafe, how they navigate S-drive, also smart system if they use it. Between 1 and 10, where would you rate them with this one?

Participant 6: It's also a 2. You know, we do have all these systems in place, you know…fortunately. You, as a manager for you, in order to get people to start using it, you have to force them. You see the minute when, when your manager must always force you to do certain things in your plant, it becomes a problem. You get there in the morning and you know that you are supposed to go to the plant, you are supposed to look at your KPIs, you must look at your process and try and see what needs to be, you know improved and how can you assist the team. But the minute when you sit in your office and not do those things not because that you don't know, then for me it's more of like a discipline issue. You do have the capability to do it, it's just that you do not want to do it because you……maybe you are not managed properly.

Interviewer: So, you mentioned it so many times, but I am going to ask you anyway because it's a part of the questions prepared. You scored them low, which is 2 for technical understanding of maintenance, 2 for technical understanding of the process and 2 for computer literacy. What would it take for them to improve?

Participant 6: For me, I think it will take, you know, a strong leadership that will be, you know, embarking on enforcing discipline because like I said earlier on, our people, they do know they do have the capability, they just don't want to do what is required. You know, in a situation like that, you cannot say maybe I need to empower this person by sending them on a course or giving them more exposure or giving them experience or something like that, in my view we don't need all of that.

Interviewer: Alright, you are getting ahead of me now because there are questions that require you to respond to around the education and stuff like that, but I just want to detour a little bit on this one before you get on to the qualification thing. How long does it take for a soup to settle in your area? A new one.

Participant 6: If you are referring to a new production shift supervisor, a new one, I think a reasonable, you know, a duration would be 3 months because that individual will have to learn the plant, learn the process, understand the people and also certain things, You know. If you get to a new environment to see how things are done here, you also need to know that so that, in my view that is also part of, you know the buying in process because if you get into a new place and you do things differently, before you know it people will start, you know, rejecting you and isolating you. It's very good to understand how people are doing certain things in a specific area before you can even come and say OK, I want to make some changes. I want to make some improvements. You need to understand first how things are functioning in in that space.

Interviewer: Do you think that an individual with a national diploma will help assist with such challenges?

Participant 6: Yeah

Interviewer: If you were to employ a National diploma graduate and say come in here, do you think it will assist?

Participant 6: On this topic, I also engaged HR manager, this new introduction of, you know, qualification on the production shift supervisor level, it's a very good thing. However, again it was not introduced the correct way. My view on this topic to HR manager was that you guys have come up with something very, very good which can take the company to the next, you know level and then we can have sustainability in our company. However, you need to look at the current

setup of the organization. Most of our production shift supervisors, I will say 99,8% of them were appointed with only matric and some don't even have metric, that is our reality. And if you look at these guys in terms of their age, you know, and some of them are still fairly young. Why I'm saying this? Some of them are in the late 30s, which is approaching 40. If you look at someone with that age in an organization, you are still looking at, you know, another 20 years you know, to go with this person, which is quite a long time. So umm, it was a good initiative. How it was introduced, it was never introduced the proper way and management, I was expecting management to sit down and think, how are we going to phase in this new change in order to ensure or at least give the current production shift supervisors, those that have got matric, give them you know a timeframe and say guys in 2028 this is what we are going to embark on. So, we would like all of you that are in this, you know, let's call it grading to come forward and start preparing yourselves, and then the company would have a way of monitoring progress and from the beginning to see how many of these people are prepared to, you know, to take this route.

Interviewer: As a formality, you are already on this question? As a formality, just to sort of now channel your answer if that is the right word. What is your take on the organization's decision to introduce National diploma as a minimum requirement?

Participant 6: I will say it is a good thing. It is a good thing to do because and to be quite honest, if you look at, you know our company and how we function, and you compare that with other companies that are in the same space as us we are trailing behind. And I remember I think about six years back, I took some people to a company called Engine in Durban and engine and has got a sulphur plant. We also used to have a sulphur plant that coke making that never actually, you know operated, you know successfully. So, the reason why I had to take some of the managers and some of the big bosses there in that organization what to try and highlight to them that if you run a certain you know plant, there is a certain way. In terms of how to run that plant or that process, you cannot just have a plant and run it the way you want. You know, there is certain things that you need to ensure that you comply to and then there are certain things that you need to ensure that you operate in terms of your licenses and your knowledge. For example, in our situation we were trying to run a sulphur plant with people that have got standard 2s and standard 7s and I can assure you there is no plant nowhere in the world that runs a process like that with anyone that has got standard 2, standard 7 or even matric for that matter, and such plants in their functions, the have got a specialist, your technicians that are running the plant as operators not as process controllers, as operators. So, you see, the reason why I'm saying we are trailing behind we are not even, if you go to our control rooms, we still have, you know, process controllers that are, some if you are lucky, they have got matric, but majority have got standard 2s and standard

7s and some they never had you know opportunities even to go to school. So, the idea of introducing, you know a National diploma on a production shift supervisor level, it's a very brilliant idea, but you need to think about how are you going to roll it out. How are you going to implement it so that you don't create a disturbance in the system?

Interviewer: So now you are mentioning engine with technology and all of those things. Do you think your production shift supervisors right now will be able to cope with technological improvements?

Participant 6: No, they can't. You know, you normally see this if you go to a control room and maybe you have let's say you have a power dip or you have some malfunctioning in terms of your weigh-feeder scales. If you bring a production shift supervisor, he is very instrumental in terms of where is this weigh-feeder and how does it function in terms of what they see. Based on that you create some sort of, you know experience in terms of I have seen this thing working like this over you know five years or whatever the case, but you fail to understand the theoretical part or aspect of that, you know, system, let's say for example something goes wrong and now the plant is standing. You as a production shift supervisor, what else can you think could be their contributing factors to this issue that you are seeing now. What actually caused this? You know our production shift supervisors, they don't have that capability and you know to think of other factors that can, you know affect this process or something that can be improved, they only work with what they see, and their knowledge is only limited on that. So, if it continues working no problem, but if there's a problem, then they have a problem.

Interviewer: Right, this now is closing one. Because you said a lot from the beginning until now. So, I would like to know what advice would you give to executive management to keep the skills aligned with the changes and I am talking about your recommendations and the benefits of your recommendations.

Participant 6: Firstly, you know, I will talk about something that a lot of people don't want to talk about. I will talk about the organization, and you know the trade union within the organization. Fortunately, I have seen how other organization you know manage their trade unions, in our area, in our company, our trade unions have got more power than management. I don't know how, but this is what I see. Unfortunately, if you allow something like that, I'm not saying that our organization must operate without having, you know, a Union affiliation for employees, so that when managers are mistreating employees, they should be a balance in terms of, you know, and Union coming in to try and intervene there. However, when I look at our setup, in our organization

for some reason it seems, or it appears as if unions have got more power than you know the senior managers. Why am I saying this? I know, you know, we're coming from a very, you know, bad or how can I put it, a sensitive historical background however we need to have plans in terms of how are we going to move forward and for the betterment of you know the company, the country as well and for people who are living in the country as well and I know that we have a lot of people that were previously disadvantaged in terms of, you know, school and opportunities and stuff like that. However, we should, I mean, if you look at where we're coming from and where we are now, in my view, we haven't made any progress looking at the time. I mean, we are talking now close to 30 years and still there is no change which in my view it's something which is very concerning. We currently shouldn't be sitting in a situation where we have a lot of people and in our organization that don't have a certain, you know, qualifications or let's say skills and yet we put them in positions that require people to have skills, to have knowledge, to have capabilities. And in my view that actually puts the company back in a way that if you put someone that actually doesn't have the capability or the required skill you don't get the best out of that person. And what I've seen, especially with the sulphur plant, you tend to frustrate that individual because you expect more than what they can deliver. And it creates a lot of frustration, and it creates a lot of unhappiness between the two parties. But management is failing to understand that if you, if you promote Mr X to be the President of South Africa right now, you'll be asking for a lot of trouble. Mr X would appreciate to get the salary as you know, the President of the country. However, the question is, is Mr X capable and is Mr X the right candidate for this position as you know, the President of the country, the answer is no. So now once Mr X is sitting in this position and obviously this is a position where we as people, we expect a lot of things coming from the person that is sitting in that position. And if that person cannot deliver, it creates a lot of unhappiness and it also, you know. I will say it punishes the country because this person is sitting in this position and a lot of things are not happening, but the position is filled.

Interviewer: So competitively, we are disadvantaged basically

Participant 6: Yes, and the expectation, the problem is that we are failing to analyze the situation correctly. If you put, if you put a teacher in a teaching position and that person cannot teach, you know, kids or students, the results at the end of the year would be poor and the expectation is going to grow even more and more because the more we see people failing, the more we want to see, you know, good results. But we are failing to understand that the person that we are expecting all of this from cannot, you know, deliver at that level. This is why, if you look at our management and our Union and you know, let's say team is always fighting like this, it is because we actually created our own problems. We agree with unions to promote people into senior

positions where people cannot deliver on those positions. I mean, I will make a typical example at the sulphur plant, people with standard 2, standard 7 were promoted in the control room as process controllers. If you look at that plant, if you compare it with other plants, if you go to companies like you will Petro SA, your engine and your SASOL, at that level you get a process controller which has a qualification in a field of engineering, whether it be chemical or metallurgy. So now, it bothers my mind to actually, even you know, look at these things. How do we compare a person with standard 2 and for whatever reasons we want to compare that person with a qualified engineer? Where now, if you're sitting in the control room, you are operating this process based on what you see, based on what process parameters changes, you act. There are certain things that I cannot tell you to do, you look at the process and you say OK this one has changed like this then I need to do like this. It's like driving a car, if you get to a stop sign, if you know how to drive you, you will stop. If you get to a curvy sort of like a road you yield because you can even feel that this road is not straight it's curving, so you cannot continue at 120km/hr. So those are the things that it becomes difficult to tell a driver over the phone and say, OK, if you get to a stop sign, do this. If you get to a robot, do this. But if you get someone who's trained, someone who's competent, they can drive from here to Jo'burg without any issues. So just to summarize, we as an organization, have created most of these problems without analysing and understanding what is required, and we sometimes prefer to put people in positions that have got no capability and for some reason we hope and we keep our fingers crossed that once this person is sitting in that position, a miracle is going to happen. If you compare because it's always good to compare apples with apples. If you look at Sasol company, they are operating in South Africa, right, they have the same you know historical background as us but those guys they are far from us you know they also have their own challenges. But if you compare them to us, you can really see that we are in serious trouble but we are coming from the same background, the same circumstances and everything. Because people in SASOL have consistently adapted to the change, this is why they are in a better space. They are not, you know, 100% perfect, but they are in a better space because if you go to Sasol, you go to their control room, you find an engineer, a process engineer. If you come to our organization, you go to a control room you find an ordinary operator. If you ask for their qualification, some of them they will tell you that they've got NQF Level 3 because, umm, we have trained them from matric and then we gave them NQF level 3 and some of them they will tell you that they are busy with NQF level 4 that would be the highest qualification that you would get.

ANNEXURE F – LANGUAGE EDITING LETTER

Dynamic Language & Translation Specialists

Antoinette Bisschoff
71 Esselen Street,
Potchefstroom
Tel: 018 293 3046
Cell: 082 878 5183
Language@dlts.co.za
CC No: 1995/017794/23

Sunday, 19 November 2023

To whom it may concern

Re: Confirmation of language edit, typography, and technical precision

The MBA mini-dissertation "**Rationalising the optimal minimum qualification requirements of a production shift supervisor at a Sedibeng steel company" by PR Ntikang (44658370)** was edited for language and technical precision. Referencing and sources were checked to comply with the Harvard guidelines specified by the 2020 NWU Reference Guide. Note that interviews are only edited for spelling as grammar editing might alter the original views of the interviewees.

Final, last-minute corrections remain the responsibility of the author.

Antoinette Bisschoff

BA Languages (UPE – now NMU); MBA (PU for CHE – now NWU); Translation and Linguistic Studies (NWU)

Officially approved language editor of the NWU since 1998
Member of SA Translators Institute (no. 100181)

Precision ... to the last letter