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Factors that Undermine the Transfer of Skills at Medupi Power Plant

Sifiso Khumalo
Tshwane School for Business and Society, 159 Nana Sita Street, Pretoria 0001, South Africa

* Corresponding Author: **Sifiso Khumalo**

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Abstract
Background: The purpose of the paper is to provide an overview of the factors that undermine the transfer of skills at Medupi Power Station at the project level looking at the skills development training programmes.
Methodology: The study was conducted by collecting data from a purposive sample of n=402 employees and 12 officials responsible for skills-based training and capacity building during the project's construction phase. A combination of quantitative and qualitative methods of date collection.
Result: The key cause of underperformance and factors that undermine the skills transfer at the power station is the lack of specialised engineering skills. The shortage includes artisan and vocational skills. The lack of such skills is known to hamper the successful completion of various construction and power generation and distribution projects at the power station.
Contributions: The study has identified factors that significantly hinder the successful transfer of skills from well-skilled and highly knowledgeable expatriate employees to poorly skilled local employees by interviewing local employees working at Medupi Power Station.
Conclusion: It is possible for the project to ensure a better skill transfer or training programme if enforcement is conducted, to allow employees to be ahead of their work requirements and advance to the new developmental area. And have a structured and monitored programme where the top leadership of Medupi Power Station should assess and evaluate the level of efficiency in transferring skills from well-experienced expatriate employees to poorly skilled local employees.

Keywords: Skills transfer, Medupi Power Station, Structural Equations Modelling, Thematic analysis

Introduction

The study's key objective was to identify and quantify skills transfer factors that affect the degree to which skills development and training were effectively implemented at the Medupi Power Station Project workplace.
Medupi Power Station is the 4th largest coal-fired plant and the largest dry-cooled power station internationally. The research work conducted by Ferreira (2021) [11] has shown that Medupi Power Station faces a significant lack of specialised engineering and technical skills, corruption, the mismanagement of financial, human and logistical resources, and political interference.

Rationale of study

The view from other researchers is that the importance of learning in the organisation is that it can be used as a competitive advantage; which means that it is something that is unique to the organisation when mastered and this cannot be copied. The study conducted by Khumalo (2018) [17] has shown that management should provide short training to its employees about the need to identify valuable and strategically beneficial changes, and how those changes should be implemented at the workplace to enhance productivity.

Figure 1. Shows a diagram for the set of requirements for an objective assessment of the level of knowledge at baseline, the identification of gaps in the level of theoretical knowledge and practical skills at baseline, and what needs to be accomplished for drawing up a sound skills transfer plan of action. The steps are informed by the work done by Bandura. There are many poorly skilled employees working at Medupi Power Station. There is a significant variability among these poorly skilled employees at the baseline level.

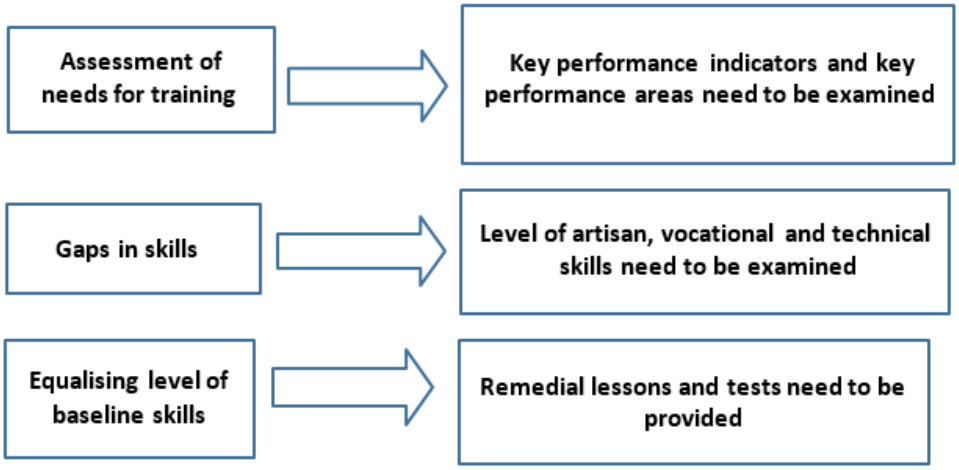
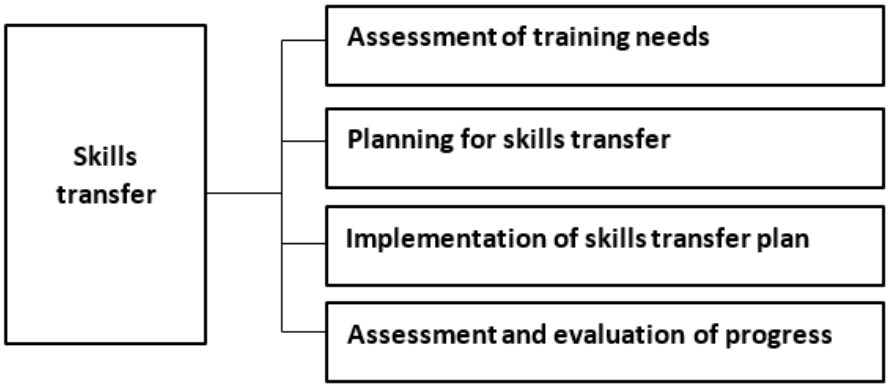


Fig 1: Requirements for an objective assessment of skills

Benefits of skills transfer programmes

Chipkin and Vidojevic have shown the dire need for capacity building, skills transfer and skills development programmes in Eskom including Medupi Power Station. According to the authors, the lack of specialised engineering, technical, vocational and artisan skills is quite significant and undermines overall productivity and efficiency. The authors have pointed out that this shortage of skills can be enhanced significantly by rolling out skills development and skills transfer programmes to all employees working on technical areas.

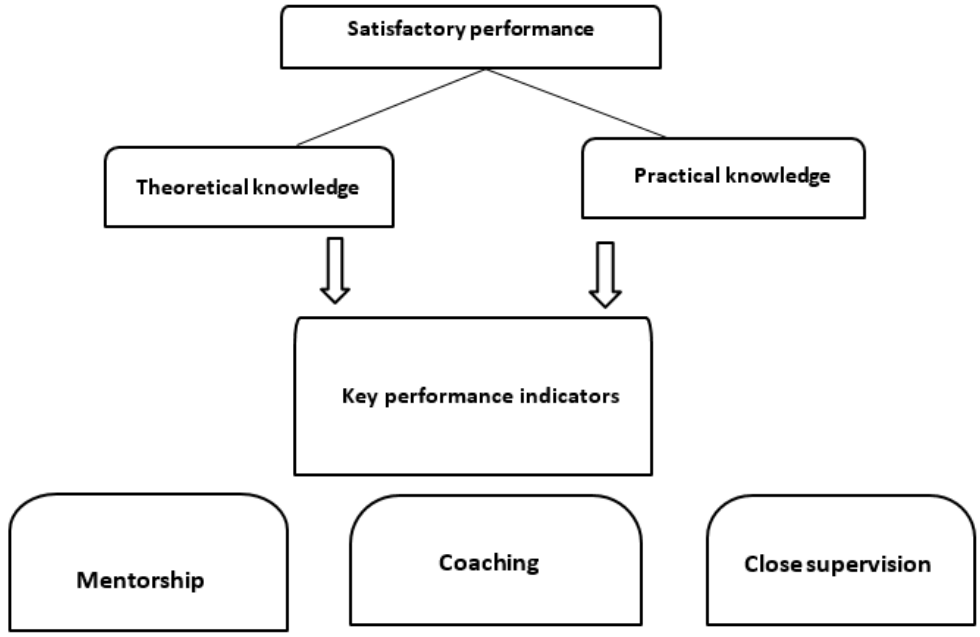
Figure 2 shows the steps involved in the transfer of skills in power utility institutions such as Medupi Power Station.



***Source*:** Khumalo (2018) [17]

Fig 2: Steps for a successful skills transfer programme

Figure 3 shows a framework developed by Worku (140-147) for the assessment of performance-based skills transfer programmes in service delivery institutions. The framework entails the assessment of theoretical and practical knowledge that is required for satisfactory performance at the workplace. Satisfactory performance and suitability of skills transfer programmes are assessed based on the key performance indicators of employees. Capacity building and skills transfer are implemented by using mentorship, coaching and close supervision of poorly skilled employees.



***Source*:** Worku (140-147)

Fig 3: Key elements of capacity building at the workplace

The need for the retention of talented employees

Tukamuhabwa (2015:34) [31] has shown that highly talented employees must be retained by their employers by creating an enabling working environment and meeting their key needs at an affordable cost. The loss of highly talented employees to rival institutions is quite costly to service delivery institutions such as Medupi Power Station and Eskom. The study conducted by Tomaselli (2021) [30] has shown that employees who possess superior performance, natural talent, very good performance, professional integrity, business ethics and honesty must be retained by their employers in order to avoid losses. The cultivation of highly talented and productive employees could take several years and significant investment according to Tomaselli (2021) [30]. It would be much more easier and affordable not to lose them to rival companies and competitors.

Andreoni, Creamer, Mazzucato and Steyn (2022:237) [2] have shown that the following factors are helpful for reducing operational costs in the power industry.

- Ensuring overall efficiency by avoiding duplicate processes and work structures;
- Motivating and incentivising workers by focusing on the individual aims and aspirations of employees;
- The provision of skills-based and tailor-made training opportunities on a regular basis; and
- Exploring external opportunities as a means of broadening the clientele base in the market.

Objectives of study

To assess and evaluate whether or not there are enough mentorship programmes for transferring practical work-related skills to poorly skilled local employees from expatriate employees working at the Medupi Power Station Project.

Methods and materials of study

As part of the quantitative aspect of the study, data was collected from each one of the 402 eligible employees of Medupi Power Station. A self-administered questionnaire of the study was used for collecting data from eligible respondents. All 402 eligible respondents of the study took part in the study voluntarily. Research ethics approval was obtained for the study from the Research Ethics Committee of Tshwane University of Technology (TUT) in Pretoria. Anonymity and confidentiality were ensured. Each respondent of the study was interviewed by using a structured, pre-tested and validated questionnaire of study.

Results of data analysis

Table 1 shows the general characteristics of the 402 respondents of study. The table shows that about 71% of employees were satisfied with the skills development training programmes that were provided to employees at Medupi Power Station. The remaining 29% of employees were not satisfied with the skills development programmes that were provided to employees at the power station. About 89% of employees were male, whereas the remaining 11% of employees were female. About 12% of employees were 25 years old or younger. About 28% of employees were 26 to 30 years old. About 38% of employees were 31 to 40 years old. About 20% of employees were 41 to 50 years old. About 2% of employees were 51 years old or older.

Discussion of results

Reports published by Medupi Power Station and Eskom (2021) [9] showed that Medupi Power Plant experienced a high turnover of employees and that the employees who were leaving the power station were relatively more experienced and highly talented. The reports showed that the main reasons for leaving were dissatisfaction with salaries and employee benefits. The power station spent significant financial and human resources on mentoring, coaching and training fresh employees, only to see them leave for the private sector shortly after such employees acquired the practical skills they needed to enrich their level of expertise and skills. Documents showed that the power station was unable to offer

counter-offers to some of the talented employees who chose to leave due to a lack of financial resources.

It was clear from the documents that the power station spent its highly valuable resources on training fresh employees, and then watched them leave as soon as their skills-related needs were fulfilled at the expense of the power station. The documents showed that the majority of highly skilled employees chose to leave in search of better remunerations, better opportunities for further training, and improved working conditions. These findings are consistent with findings reported in the literature by Motepe, Hasan and Shongwe (2022) [23].

Implications of study

The ability to acquire adequate technical skills has a significant influence on job satisfaction and employee morale. The study conducted by De Saxe, Van Eeden, Steenkamp and Mokone shows that investing in capacity building and skills transfer is a wise investment for all South African service delivery institutions including Eskom. The authors have shown the strategic and operational benefits of skills transfer and capacity building in the power industry. There are numerous benefits of promoting knowledge and skills in power generation companies. Examples of such benefits are the enhancement of productivity, job satisfaction and employee morale.

The critical step is the assessment of the level of knowledge of poorly skilled employees according to recommendations made by Bandura. Variabilities in the levels of knowledge and skills must be levelled before implementing lessons. Practical lessons must accompany theoretical lessons. Practical demonstrations must be provided to learners, and learners must be allowed to demonstrate understanding by performing a number of practical demonstrations repeatedly. This assessment must be carried out on a regular basis as part of a monitoring and evaluation programme.

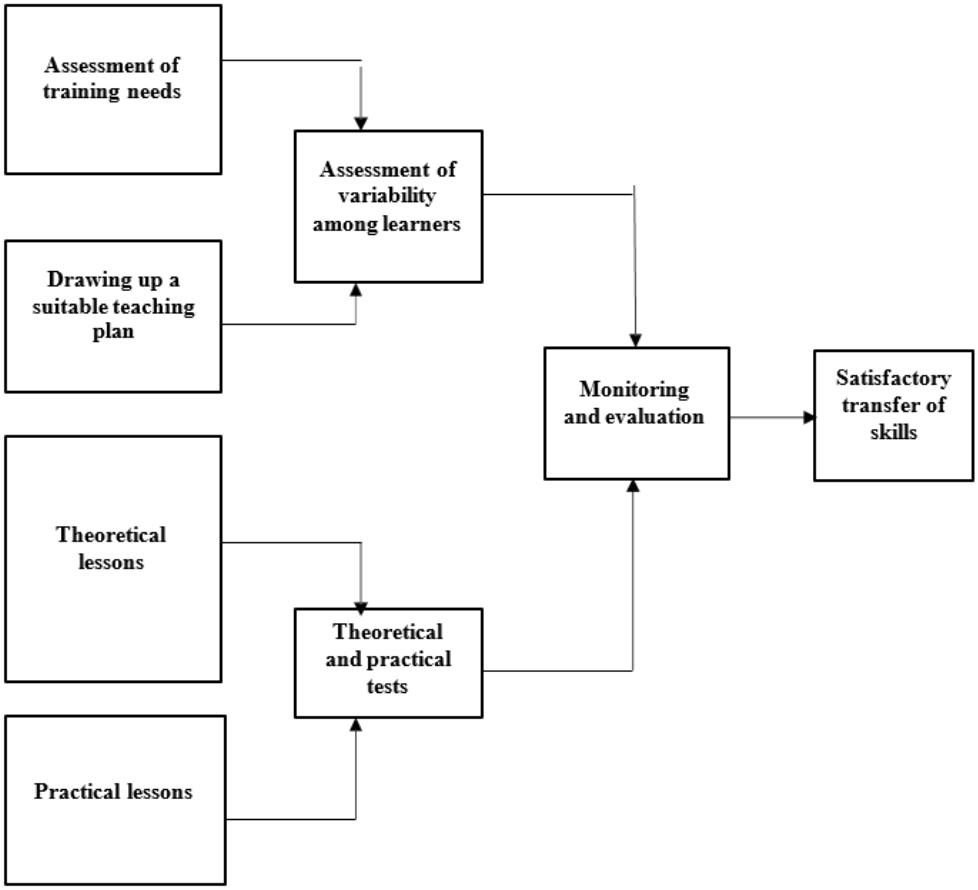


Fig 4: Framework for enhancing skills transfer Source: Khumalo (2018) [17]

Conclusion

As part of the research, three research hypotheses were tested empirically. The procedure showed that there was a shortage of mentorship programmes for transferring practical work-related skills to poorly skilled local employees from expatriate employees working at Medupi Power Station. It also showed that mentorship programmes were not readily available to all poorly skilled local employees who needed such trainings to perform adequately. Lastly, the procedure showed that the pressure to meet production targets at the workplace is an obstacle to the effective transfer skills at Medupi Power Plant.

Recommendations

There is a belief that the transfer of skills is highly valuable among the top leadership of Medupi Power Station. There is also robust commitment for skills development and transfer activities at the power station. The research has shown that it is highly important to retain highly productive and talented employees at the power station. To achieve this goal, it is necessary to create an enabling working environment. One method of achieving this goal is to reward top performing and talented employees.

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