

The evaluation of a leadership development centre in a manufacturing organisation in the steel industry

B Els MCom

Mini-dissertation submitted in partial fulfilment of the requirements for the degree
Magister Commercii in Industrial Psychology at the
North-West University (Potchefstroom Campus)

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April 2012
Potchefstroom

COMMENTS

The reader is reminded of the following:

- The editorial style as well as the references referred to in this mini-dissertation follow the format prescribed by the Publication Manual (6th edition) of the American Psychological Association (APA). This practice is in line with the policy of the Programme in Industrial Psychology of the North-West University (Potchefstroom) to use APA style in all scientific documents since January 1999.
- The mini-dissertation is submitted in the form of a research article. The editorial style specified by the South African Journal of Industrial Psychology (which agrees largely with the APA style) is used, but the APA guidelines were followed in constructing tables.

DECLARATION

I, Bianca Els, hereby declare that this mini-dissertation titled “The evaluation of a leadership development centre in a manufacturing organisation in the steel industry” is my own work and that the views and opinions expressed in this work are those of the author and relevant literature references as shown in the references.

I further declare that the content of this research will not be handed in for any other qualification at any other tertiary institution.

Bianca Els



1 Mei 2012

Hiermee verklaar ek, me Cecilia van der Walt, dat ek die taalversorging van die skripsie van me Bianca Nel, getitel *The evaluation of a leadership development centre in a manufacturing organisation in the steel industry*, behartig het.

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ACKNOWLEDGEMENTS

The author would like to thank:

- Jesus Christ, My rock and salvation, to whom I am grateful for everything I have and for the privilege of being able to study and for always reminding me that anything is possible.
- My husband, for all his love, support, motivation and understanding for keeping me sane in tough times and helping me when help was needed.
- My parents, who have walked with me from the beginning of my academic career and who have supported me both financially and emotionally, and who have sacrificed a lot for me to be able to study and further my education.
- Dr Jorgensen, my supervisor, who inspired me in so many ways and who always motivated and pushed me when needed. Thank you for the guidance, patience, support and the opportunity to learn from you. I am thankful that I have the privilege of knowing you and for the opportunity to work with you, now and in the future;
- Special thanks and appreciation to all the participants - your willingness to take part and to sacrifice your time. The study would not have been possible without your whole-hearted participation;
- Me. Marike Krugell, who did the statistical analysis;
- Dr Carin Hill, for helping with the interpretation of the statistical analysis.

TABLE OF CONTENTS

List of tables	v
Abstract	vi
Opsomming	vii

CHAPTER 1: INTRODUCTION

1.1	Problem statement	12
1.2	Research objectives	16
1.2.1	General objective	16
1.2.2	Specific objectives	16
2.1	Research approach	16
2.2	Research method	17
2.2.1	Literature review	17
2.2.2	Research participants	17
2.2.3	Measuring instruments	18
2.2.4	Research procedure	19
2.2.5	Statistical analysis	19
2.2.6	Ethical considerations	19
3	Chapter overview	20
4	Chapter summary	20
	References	21

CHAPTER 2: RESEARCH ARTICLE 1	24
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CHAPTER 3: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

3.1	Conclusions	50
3.2	Limitations of this research	51
3.3	Recommendations	52
3.3.1	Recommendations for the organisation	52
3.3.2	Recommendations for future research	53

LIST OF TABLES

Article 1

Table	Description	Page
Table 1	Characteristics of the participants ($N = 36$).	32
Table 2	The content and methodology of the development assessment centre	36
Table 3	The significance of the differences between the pre- and post-test scores for the Leadership behaviour inventory (LBI-2) for the participants ($N=36$).	37
Table 4	The significance of the differences between the post-test scores for the Leadership behaviour inventory (LBI-2) for the participants ($N=36$) and their peers and subordinates ($N = 36$).	38

ABSTRACT

Title:

The evaluation of a leadership development centre in a manufacturing organisation in the steel industry.

Key terms:

Development assessment centre, evaluation of leadership development centre, leadership development.

For any organisation it is necessary for their managers to be well developed and highly skilled. Managers who lack the necessary skills often have to be provided with the opportunity to develop further. The objectives of this research were to conceptualise the terms *leadership development* and *development assessment centre*; to explore the content and methodology related to a leadership development assessment centre; and to evaluate the results of a leadership development programme for employees on leadership skills/competencies.

The study was implemented since little research in the South African context could be traced concerning the evaluation of DACs in a leadership context. Therefore the purpose of this study was to evaluate a developmental assessment centre. The participants were managers selected from a steel manufacturing organisation from the Gauteng plant. The entire population comprising 72 ($N=72$) participants, of whom 36 ($N=36$) were managers and 36 ($N=36$) subordinates, peers or management, were utilised in the study. The measuring instrument administered before and after the implementation of the development assessment centre was the Leadership behaviour inventory (LBI-2) ,pre- and post-leadership measures can be utilized to determine the effectiveness of various organisational interventions.

Levene's test was utilised to establish whether the variance of the scores for the pre- and post-test was the same and Paired-samples *t*-test was used to analyse the data. The results indicate that statically significant increases were recorded across all the leadership competencies between the pre-test and the post-test measurements. The largest increase manifested between the Articulating vision competency, and the Systems competency between the pre- and post-test. The smallest increase was noticeable between the pre- and

post-test rating for the Co-ordination competency. It can therefore be concluded that the DAC was successful in developing the leadership competencies of the middle-level managers.

OPSOMMING

Titel:

Die evaluering van 'n leierskapontwikkeling-sentrum in 'n vervaardigingsmaatskappy in die staalnywerheid.

Sleutelbegrippe:

Ontwikkelingsassessering-sentrum, evaluering van 'n leierskapontwikkeling-sentrum, leierskapontwikkeling.

Dit is vir enige organisasie noodsaaklik dat sy bestuurders goed ontwikkel moet wees en oor die nodige vaardighede moet beskik. Wanneer bestuurders nie oor die nodige vaardighede beskik nie word die geleentheid dikwels gegun om verder te kan ontwikkel. Die doelwitte van die studie was om die terme *leierskapontwikkeling* en *ontwikkelingsassessering-sentrum* uit die literatuur te konseptualiseer; om ondersoek in te stel na die inhoud en metodologie van 'n leierskapontwikkeling-takseersentrum; en om die resultate van 'n leierskapvaardighede te evalueer.

Die deelnemers was bestuurders van 'n staalvervaardigingsmaatskappy se Gauteng-aanleg. Die totale populasie bestaande uit 72 ($N=72$), van wie 36 ($N=36$) bestuurders is en 36 ($N=36$) ondergeskiktes of eweknieë was. 'n Meetinstrument, naamlik die Leadership behaviour inventory (LBI-2), is voor en na die implementering van die ontwikkelingsentrum aangewend.

Levene se toets is gebruik om te bepaal of die verskeidenheid van die tellings van die voor en na toets dieselfde is as die Paired-samples *t*-test wat gebruik word om die data te analiseer. Die resultate dui daarop dat daar statistiese beduidende verhogings aangeteken is oor die leierskapbevoegdhede tussen die voor en na toets metings. Die grootste toename tussen die voor en na toets is gevind by Artikulering visie vaardigheid en sisteem vaardigheid. Die kleinste toename tussen die voor en na toets was opvallend by die Koördinerende bevoegdheid. Dus kan afgelei word dat die DAC suksesvol was in die ontwikkeling van leierskapvaardighede van middellyk bestuurders.

CHAPTER 1

INTRODUCTION

This mini-dissertation is presented in the form of an article titled *The evaluation of a leadership development centre in a manufacturing organisation in the steel industry*. The main aim of the study is to determine whether managers that undergo a DAC will have improved leadership skills. Key words utilised in this research include *development assessment centre, evaluation of leadership development centre, leadership development*. In this chapter, the problem statement and the research objectives (including the general and specific objectives) are discussed, followed by the research method and an overview of the chapters.

1.1 PROBLEM STATEMENT

While a traditional assessment centre (AC) assesses participants' performance for selection purposes, a development assessment centre (DAC) is utilised to determine development needs of employees (Schlebusch & Roodt, 2008). DACs are often used to assess the training and development needs of managers (Freschi, 2009). Furthermore, DACs are useful because it assesses managers in a structured manner against the competencies identified by the organisation as being important for future organisational success (Freschi, 2009). Creating an alliance between managerial development needs, training plans and the training needs of the organisation is often a result of DACs (Šukalová and Hrašková, 2006). Leslie (2009) points out DACs reassure superior awareness of changing organisational priorities and refocus both managerial and organisational development. Leslie (2009) further states that DACs encourage a high self-awareness of current skills and abilities and can also emphasise self-management of personal development and career planning.

Literature indicates that DACs are more often utilised by more countries around the world (Lievens and Thornton, 2005). Meiring (2008) confirms this by indicating that recently in South Africa there seems to be an increase of usage of DACs. This increased interest in using DACs in South Africa is to develop the talent of managers in their current positions (Lievens & Schollaert, 2009). This is a result of, amongst other things, the flattening and downsizing of organisations and the fewer promotional opportunities available (Lievens and Schollaert, 2009). Krause (2010) notes that the use of DACs in South Africa has dramatically changed in

the last three decades. Economic, socio-cultural and political circumstances in South Africa influence past and present usage of DACs (Krause, 2010). Literature indicates DACs have a positive impact on leadership development and that leaders who will participate in the DACs will be able to improve their own leadership and transfer their knowledge to their working environments (Woodruffe, 2000). Appelbaums, Harel and Shapiro (1998) are of the opinion that DACs is a good place to start when considering developing leadership.

DACs can simply be defined as assessments and also a collection of workplace simulation exercises that provide individuals with feedback, practice and developmental coaching on a set of developable behavioural dimensions that are critical for their professional success (Thornton and Rupp, 2005). Pasmore (2009) argues that it is important that the dimensions such as performance and skills development regarding DACs should be owned by the participants. While DACs focus mainly on leadership competencies and management, further emphasis is placed on participants and observers collaborating to identify the participants' strength and development needed (Woodruffe, 2000).

Pasmore (2009) states that DACs have proven success in diagnosing individuals' current strengths and 'gaps' in relation to a set of competencies; thus providing a platform for future development. Depending on the purpose of the centre, the process allows certain individuals to be identified as having potential for future promotion, perhaps as part of succession planning (Pasmore, 2009). DACs provide an objective and ethical means of helping managers to benchmark their own effectiveness in a safe environment (Meiring, 2012). Furthermore, DACs can send a clear signal of the organisation's commitment to investing in learning and development, the most pronounced trend in DACs in recent years is the shift in their predominant purpose from selection/promotion to development (Meiring, 2012).

Leadership development

Organisations need to develop their managers in order to become more competitive and lay a solid foundation for their future in the global competitive world (Ulrich, Losey & Lake, 1997). DACs focus on traditional leadership competencies such as communication, problem solving, and conflict management (Rupp, Baldwin & Bashur, 2006). Scarf (2010) deems leadership development to be a key factor for any organisation. Employees that show potential to become leaders in the organisation can take advantage of being developed in a way to enhance the organisation (Bossidy & Charan, 2002). Studies indicate that

organisations that invest in leadership development perform better than those that do not (Maxwell, 2011).

Effective leadership can be viewed as central to organisational performance and successful organisations (Kotter, 2000). Where leadership can be viewed as an important variable in an organisation, leadership development is thus the vehicle to effective leadership. Buus (2004) states that there is a new wind blowing in the leadership development area and that it is necessary for training. Lockwood (2007) confirms this by saying that leadership development is formal and informal training and that it is for management to assist them in the development leadership skills and all the styles needed for handling various situations. Corner (2011) explains that leadership development can be defined as the opportunity that is given to leaders and future leaders to learn, grow and change and to provide leaders with the skills they need in an organisation. Corner (2011) further states that leadership development is very important in an organisation and that it is simply not just a “nice to have” in an organisation. While it may take many years to develop and refine, the results clearly pay off. It is more important than ever for organisations to invest in their leadership during recessionary periods so that the business not only survives but emerges stronger than the competition (Conger & Benjamin, 1998). What companies need most vigorously today is talent-driven learning programs, particularly leadership development (Baghai, Smit & Viguerie, 1997). Romero (2012) is convinced that continuous leadership development improves bottom-line financial performance, attracts and retains talent, drives a performance culture and increases organisational agility.

A high need for effective leadership exists in South Africa (Eckert and Rweyongoza, 2010). South Africa’s demand for effective leadership and systematic leadership development is growing more rapidly than before (Eckert and Rweyongoza, 2010). Eckert and Rweyongoza (2010) hold that the shortage of upcoming leaders in South Africa is due to the under development of organisations in South Africa. Furthermore, it is unfortunate that leadership in South Africa is presented to the rest of the world as dysfunctional and derailed leadership (Eckert and Rweyongoza, 2010). It seems that talented leaders have not received much structured support for developing their full leadership potential, therefore many organisations in South Africa are underperforming (Cawe, 2006). McCauley (2006) recommends that organisations should strengthen their leadership skills and that it would improve their business results and also strengthens their prospects for sustainable growth and prosperity.

Many organisations in South Africa that are on the verge of becoming multinational or even international in their scope, can find that the organisations' leadership challenges are complex (Kaiser and White, 2008). By developing managers' untapped potential, managers can exceed their current levels of performance and at the same time ensure that the organisation is not only adapting to global change, but is also effectively using change to its advantage (Jones, Blunt & Sharma, 1995).

In South Africa, leadership development is a key leverage point in the development and transformation in organisations (Warren, Adedokun & Omolaoye, 1996). Effective leadership development can build the skills needed to lead employees, departments and organisations more successfully (McCaully, 2006). Leaders need to update their skills continually, yet also need to appreciate their strengths (Kaiser & White, 2008). If they do not, they could waste time and effort attempting to improve the leadership skills they have already mastered (Eckert & Rweyongoza, 2010). They could fail to leverage core skills that would help them be more successful or waste time and effort trying to develop in an area that for them may be out of reach (Eckert & Rweyongoza, 2010).

From the discussion above it can be deduced that DACs are important for the development of the managers in an organisation (Schlebusch, 2011). Leadership is one of the most critical factors for the future success of organisations in South Africa (Eckert and Rweyongoza, 2010). Organisations in South Africa that invest in developing leadership talent are investing in their future (Eckert & Rweyongoza, 2010). In this study the potential leaders of a major manufacturing organisation in the steel industry in South Africa are provided with the opportunity to enhance their own leadership development by means of a DAC. The employees will also be afforded the opportunity to rate themselves and they will be rated by either their subordinates or peers in order to determine their development process.

The following research questions are derived from the afore-mentioned:

- How are development assessment centres and leadership conceptualised in the literature?
- What are the content and methodology related to a Leadership development assessment centre?

- What are the effects of a development assessment centre on the leadership development of participants?
- To what extent does the perception of leadership competencies within the participants differ between participants on the one hand and their peers and subordinates on the other after the implementation of the development centre.

1.2 RESEARCH OBJECTIVES

The research objectives are divided into a general objective and specific objectives.

General objective

The general objective of this research is to evaluate a leadership development assessment centre.

Specific objectives

The specific objectives of this research are:

- To conceptualise the terms *leadership development* and *development assessment centre*;
- To explore the content and methodology related to a leadership development assessment centre;
- To evaluate the results of a leadership development programme for employees on leadership skills/competencies; and
- To evaluate the results between participants and their peers and subordinates after the implementation of the development centre.

2. RESEARCH DESIGN

2.1 Research approach

The research descends within experimental and descriptive research. A randomised pre-test-post-test group design is utilised (De Vos, Strydom, Fouché & Delport, 2005). The

independent variable, namely the leadership development assessment programme, is used to assess the group, where after the outcome of the independent variable on the dependant variables, being the programme the participants undergo, will be assessed during the post-test. The same measuring instruments are administered, at two different occasions, after a one-month interval in order to determine whether or not there is an improvement in the participants' leadership skills/competencies.

2.2 Research method

2.2.1 Literature Review

The literature review focuses on development assessment centres and leadership development. A complete review focusing on current practices, availability and effective use of development assessment centres will be utilised in phase 1. The sources used include:

- Article databases, which include EBSCOHOST, ScienceDirect, Emerald, Sabinet Online and JSTOR
- Relevant textbooks
- Internet-based search engines such as Google Scholar and Google.
- Journal articles from various publications such as: *Personnel Psychology*; *International Journal of Selection and Assessment*; *Industrial and Organisational Psychology*; *Research in Personnel and Human Resources Management*; *Journal of Applied Psychology*.

2.2.2. Research participants

The sample consists of employees of the middle management from a manufacturing organisation in the steel industry. The entire sample consists of 36 managers ($N = 36$), that are included in the study. The sample further includes two to three subordinates/peers, that each manager will nominate, that will also complete the questionnaire. The managers have to nominate the subordinates/peers so that those subordinates/peers can rate their manager according to how they see their manager and experience the manager's leadership skills/competencies. Therefore the complete sample will be 72 participants ($N = 72$, 36 ($N = 36$) of whom are managers and 36 ($N = 36$) of whom are either subordinates or peers.

2.2.3. Measuring battery

The following measuring instruments are utilised in the research:

A *demographic questionnaire* was utilised in order to compile a profile of the demographic characteristics of the population. Characteristics such as gender, race, age, language and the individual's qualification level are measured by means of this questionnaire. The questionnaire used to assess leadership development of the participants is the New Leadership Behaviour Inventory – Version 2 (LBI - 2) (Spangenberg & Theron, 2011). The LBI-2 is a South African leadership questionnaire which assesses the degree to which a leader or manager demonstrates precise behaviours needed to develop and implement a challenging vision for the organisation, a work unit/department or project team. LBI-2 pre- and post-leadership measures can be utilized to determine the effectiveness of various organisational interventions. The candidate should have been exposed to or have had experience of being a leader or managing a team, since the assessment focus will be on observable behaviours.

The LBI-2 model comprises three key processes and 20 dimensions: Firstly, the manager will create vision and strategy. Secondly, he/she will prepare the unit for implementing the vision and strategy, and lastly, he/she will implement the vision and strategy. The areas of application will be firstly, to provide leaders with inclusive insight into an individual's leadership behaviours across the leadership-management spectrum; secondly, to provide a good overview of the collective leadership capacity of a particular team, department, unit or region; thirdly, to form part of an initiative aiming at accelerating the learning and growth of designated candidates; and lastly, to exploit the LBI-2 pre- and post-leadership measures to determine the effectiveness of various organisational interventions. The report options that will be used will be provided with an overview of the leaders' leadership skills, and also more detailed information per dimension and item. The strengths and developmental areas for the leader will be highlighted in the report through a gap analysis. Theron and Spangenberg (2005) established the internal consistency of the LBI's data and conducted a reliability test on the 24 subscales, and the results indicated satisfactory homogeneity (Durrheim, 2008). Cronbach's alpha values yielded values greater than 0.74 and less than 0.80 (Durrheim, 2008).

2.2.4 Research procedure

The development programme will be conducted over a three- (3) day period. The first day will consist of an in-basket exercise, the second day will comprise an interview and a meeting, and on the third day the participants will receive feedback on their performance during the previous two days. The development programme will be presented by five professional Industrial Psychologists from different organisations.

2.2.5 Statistical analysis

The statistical analysis is carried out using SPSS (SPSS Inc., 2009). Before any statistical analyses will be done, the data will be inspected for missing and/or unexpected values. The minimum and maximum values, as well as the means and standard deviations, will be checked to determine their plausibility. After investigating the skewness and the kurtosis coefficients of the items from the questionnaire, a paired-samples and independent samples *t*-tests will be implemented.

In order to compare the data, an independent-samples *t*-test will be utilised, utilising the Levene's test so as to establish whether the variance of the scores for the pre- and post-test is the same. Paired-samples *t*-test will be used to determine the statistically significant difference in the mean scores of the participants for the pre- and post-test. Effect sizes will be calculated to determine the magnitude of the differences between the pre- and post-test (Palant, 2010).

2.2.6 Ethical considerations

The values set out in the American Psychological Association's Code of Ethics (American Psychological Association, 2001a) will be followed to guarantee that the research will be carried out in an ethically suitable manner. All the research activities and initiatives generated by the research answer to the broad norm of "do no harm". Authorisation and permission to conduct the study at the research institution will first be obtained from their management as well as from the participants, where after the participants will be thoroughly briefed regarding the design, aims and goals of the research, and regarding how the research will benefit the participants. The participants will be allowed to withdraw from the research at any stage if they so choose and be given the guarantee that the data obtained will be kept confidential.

3. CHAPTER OVERVIEW

In Chapter 2, the differences regarding the scores between the pre- and post-tests are examined. Chapter 3 deals with the discussion and limitations, and recommendations are made from this study.

4. CHAPTER SUMMARY

This chapter provided a discussion of the problem statement and research objectives. Furthermore, the measuring instruments and the research method were explained, followed by a brief overview of the chapters that will follow.

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CHAPTER 2
RESEARCH ARTICLE

THE EVALUATION OF A LEADERSHIP DEVELOPMENT CENTRE IN A MANUFACTURING ORGANISATION IN THE STEEL INDUSTRY

ABSTRACT

Orientation: One of the key elements for any successful organisation is good leadership and well-developed managers. Managers must be afforded the opportunity to grow as leaders; therefore organisations need to take the necessary actions to give their managers the opportunity to grow and develop. A development assessment centre can be viewed as an effective measure to facilitate leadership development in managers.

Research purpose: The purpose of this study was to evaluate a developmental assessment centre (DAC).

Motivation: Little research could be traced in the South African context concerning the evaluation of DACs in a leadership context.

Research design, approach and method: A randomised group design was used to evaluate the programme. Participants were selected from a steel manufacturing organisation from the Gauteng plant. The entire population comprised 72 participants, of whom 36 were managers and 36 subordinates or peers.

Main findings: The evaluation of a leadership development centre in a manufacturing organisation in the steel industry was positive. It seems that the middle-level managers who participated in this study showed an increase in the leadership competencies as measured by the LBI (2) once the DAC programme had been implemented.

Practical implications: Since little research is available in South African concerning the evaluation of DAC, this study will provide a valuable contribution to organisations seeking to improve leadership and help them to become more successful in the business world.

Contribution/Value-add: This study contributes towards knowledge on how a DAC can improve the performance of managers in the workplace. This study proves that development does indeed take place during a DAC and improves the leadership competencies of managers.

Key words: Development assessment centre, evaluation of leadership development centre, leadership development.

INTRODUCTION

How do major organisations survive in a competitive business world and create world-class leaders for their organisation? Appelbaum, Harel and Shapiro (1998) accentuate that development assessment centres (DACs) should be seen as the starting point for developing leaders in the organisation. Moreover, DACs is the most popular method to use when it comes to developing managers (Conger & Benjamin, 1999). Rupp, Baldwin and Bashshur (2006) explain that DACs provide the managers with the assistance in coaching, feedback, and experiential learning opportunities. The main focus of DACs is developing traditional leadership competencies such as communication, conflict management, and problem solving. DACs are prevailing progressively more in United States organisations (Kudisch et al., 2001), the United Kingdom and in the Eastern nations (Lee, 2002). A study by Meiring (2008) shows that there is an increase of usage of development assessment centres in South Africa, although its impact on the participants is still being questioned.

DACs have repeatedly been used and have shown to be successful for selection or promotion purposes (Carrick & Williams, 1999; Thornton & Rupp, 2005). However, Schlebusch (2011) states that DACs are used to determine the participant's existing areas of strength and areas that need further development in order to align future development with real needs. Thornton and Rupp (2005) defined DACs as assessments and a gathering of workplace reproduction exercises that provide individuals with practice, feedback, and developmental coaching on a set of developable behavioural dimensions that were found to be critical for their professional success. In summary, developmental assessment centres have both an assessment and a development component, while selection and diagnostic assessment centres are designed to assess an individual's competence (Joiner, 2009).

Thornton and Rupp (2005) explain that a DAC consists of a group of workplace replication exercises and assessments. These can be used to give the individuals feedback and even coaching regarding job-relevant behavioural dimensions. It can also be inappropriate to presume that results from either an AC or DAC will essentially generalise to the other (Carrick, & Williams, 1999) or that an AC can be used for development without any modification (Thornton & Rupp, 2005). Furthermore, cultural differences have frequently been shown to affect development with regard to attitudes, visions and behaviour of humans, social groups, populations, and nations (Boesch, 2005; Morris & Pavett, 1992; Newman & Nollen, 1996). Meiring (2007) also states that in South Africa, the cross-culture application of

development assessment centres will more frequently come under inspection as stronger demands for the cultural suitability of assessment measures will be raised by the Employment Equity Act 55 of 1998.

It seems that the popularity of DACs stem, at least portionally, from the demonstrated criterion-related validity of the AC method, and not from evidence concerning the efficiency of DACs themselves (Carrick & Williams, 1999). On the other hand, ACs that are well designed and well implemented, usually are useful for predicting future performance (Arthur, Day, McNelly & Edens, 2003; Gaugler et al., 1987; Howard, 1997; Schmidt & Hunter, 1998). Therefore, DACs are seen to be interventions by their very nature, as well as the act of providing participants with feedback on their performance. This feedback is intended to influence them to improve their performance (Kluger & DeNisi, 1996).

Using assessment centres for development

Lately, organisations wish to use the prosperous information assessment centres offer as a means of encouraging employee development (Cooper, 2008). It often happens that a developmental purpose is attached to an existing assessment centre. Tillema (1998) mentions that participants are then provided with feedback regarding their performance in a program designed to make selection or promotion decisions.

Organisations with the sole purpose of catalysing development behaviour are increasingly developing DACs (Ballantyne & Povah, 2004; Lee & Beard, 1994 and Thornton & Rogers, 2001). These centres do not focus on the overall assessment of potential, but rather on the diagnosis of current strengths and weaknesses and provide detailed behavioural feedback and coaching, or development planning is often incorporated (Ballantyne & Povah, 2004; Griffiths & Goodge, 1994). Šukalová and Hrašková (2006) describe DACs as being assessment centres with key differences. DACs should be used for personal development that will lead to team and organisational development. Recently, a definite shift has been seen in thinking away from the traditional view of an assessment centre to the one which emphasises the developmental aspect of assessment (Šukalová & Hrašková, 2006).

This new way of thinking established the three values of DACs. Firstly, DACs offer an objective and vigorous method of enhancing the individuals, the organisations, and awareness of skills, strengths and gaps. Secondly, DACs give an exclusive opportunity to objectively

scrutinize and measure how people really perform tasks, handle decision making, relate to each other, and demonstrate self-awareness. Thirdly, a well-designed personalised DAC is an efficient tool for measuring the significant behaviours important to employees' present success and future potential (Šukalová & Hrašková, 2006).

Additional characteristics of development centres include that they do not have a pass or fail criteria, but are geared towards developing the individual (Nel, 2010). Furthermore, these centres can address the organisational need over a longer period of time. The intention of DACs is that it should be used with internal candidates and can have a 1:1 ratio of assessor to participant, while it may not involve line managers as assessors. Nel (2010) further states that DACs place more emphasis on self-assessment, while focussing on the individual's potential, and are geared to meet needs of both the individual and the organisation. Therefore, according to Thornton and Rupp (2005), DACs assign the role of facilitator to assessors, where detailed feedback is always given to the participant.

DACs are normally used for three major purposes: Firstly, to develop candidates on dimensions of interest; secondly to diagnose development needs; and lastly, to predict future behaviour for decision making. Joiner (2009) says that DACs seek to both measure and develop dimensions that may be learned (i.e., skills and competencies that can be enhanced upon in a reasonable amount of time). Pascal (2007) further states that DACs engage in multiple points of feedback and repetitive practice, and may duplicate exercises of the same type as a way of tracking development on the dimensions over time. Therefore an important component of a DAC programme is feedback. In order to encourage learning, this feedback needs to be instantly available (Thornton & Rupp, 2005).

By engaging in appropriate developmental activities, participants should respond to the feedback they receive. For this to happen, participants must accept the feedback they receive and also act on it (Kudisch, Lundquist & Smith, 2002; Poteet & Kudisch, 2003; Smither, London & Reilly, 2005). The favourability of assessor feedback must be considered in light of its association with how DAC participants have rated themselves, because DAC programmes often involve both self- and assessor ratings. The differentiation between performance feedback and developmental feedback has been well documented (Ryan, Brutus, Greguras & Hakel, 2000).

Taking the above into consideration, evaluations made by DAC assessors will never be shared with management or be used to make any decisions concerning personnel (Schlebusch, 2011); the reason being that a DAC's feedback is solely developmental, and it is often repetitively stressed in the program (Schlebusch, 2011). It is expected of participants in a DAC, more than participants in a traditional AC or performance appraisal program, to focus more on their personal development and to be more open to developmental suggestions (Nowack, 2009).

DACs are increasingly being used by organisations as a means of facilitating employees' professional development, behaviour change, and development of skills such as interpersonal communication and leadership (Ballantyne & Povah, 2004; Kudisch et al., 2001; Rupp, Snyder, Gibbons & Thornton, 2007; Spsychalski, Quiñones, Gaugler & Pohley, 1997;).

Leadership development

Edenborough and Kogan (2005) highlight that development assessment centres can be applied for different purposes of which leadership development is one such function. Leadership development relates to providing leaders with opportunities to learn from their work rather than taking them away from their work to learn (Corner, 2011). Corner (2011) explains that leadership development can be defined as a deliberate effort to provide leaders with opportunities to learn, grow and change and the main purpose is to provide leaders over time with the skills to function effectively within the organisation. He further states that leadership development can be seen as a main concern, not an addition to everything else.

Skiffington and Zeus (2003) state that the core issue of leadership development can be found in the purpose of the group and those groups' leaders. Therefore leadership development is best understood in the perspective of the particular group a leader or promising leader belongs to and that there is an intrinsic strain between the values of the organisation and the individual (Skiffington & Zeus, 2003). DACs show excellent power to improve the decisions made about a key factor of organisational success such as the leaders that are recruited, promoted and appointed to senior positions (Scarf, 2010). DACs form a well-known part of many organisations' leadership development strategies, and the promotion mechanism for the career development of high potential managers and professionals (Atwater, Ostroff, Yammariono & Fleenor, 1998). DACs method is a mix of different exercises simulating key aspects of management and leadership life (Atwater, Roush & Fischthal, 1995). Bray and

Campbell already predicted in 1993 that DACs will be a key predictor of future performance, and as Steensen and Ericsson (2011) confirm, they were correct. Utilising a DAC for leadership development includes a set of competency constructs. A mixture of these constructs adds up to a score, and this score will predict future overall effectiveness (Francis et al., 2004).

The success of any leadership development program is dictated by the program's resource depth, scientific validity and measurability (Skiffington & Zeus, 2007). Such behavioural techniques allow for data to be gathered on specific, targeted behaviours, impacting the application of a cross-cultural and professional skill. This is one of the reasons why it is employed by leadership developers. Skiffington and Zeus (2007) further state that these targeted behaviours can easily be measured and evaluated in a rigorous manner, by using appropriately validated behavioural change instruments.

When selecting a training method for leadership development, there are many factors to consider (Dessert, 2009). Some of these factors include the length of time available for the training, any constraints in the environment where the training will take place, as well as the characteristics of the trainees and the organisation (Salas & Cannon-Bowers, 2001). Salas and Cannon-Bowers (2001) explain that when the sample time and the resources are available, numerous characteristics will exist that will be significant to all training programs. There are many regularly applied approaches to training, for example, modelling, conferences, information presentation, simulation, lectures, case studies, role playing, apprenticeships, group exercises, orientations, and mentoring (Campbell & Kuncel, 2001). Iles and Forster (1994) hold that DACs is a brilliant approach that combines quite a number of these formats.

During the past few decades, a movement away from traditional assessment centres on both international and national level is noticeable. However, still little research is available concerning the effect of developmental centres on managerial performance (Fischer & Engelbrecht, 1992). Studies in South Africa concerning leadership development by means of a DAC is limited. One study of Fischer and Engelbrecht (1992) indicated that the DAC had a positive impact on managerial performance, while a study of Spangenberg et al. (1989) focussed on a comprehensive assessment of the managerial skills of middle managers to determine their readiness for promotion purposes. This study, however, focussed on the validation process of the DAC and not on the evaluation of the development purposes.

Furthermore, although Meiring (2008) states there is an increase in usage of development assessment centres in South Africa, it has a questionable impact on the participants. It seems important therefore to research the use of DACs in South African, more specifically the impact of DACs on participants

Therefore this research aims to evaluate leadership development by means of a DAC in a major manufacturing organisation in the steel industry in South Africa. This organisation often makes use of a DAC to develop their managers at all levels and in all positions. However, this programme has never been evaluated for its effect on their managers and therefore this study provides the opportunity to evaluate the impact of the DAC on the participants.

From the discussion above, the following research questions can be formulated:

- How are development assessment centres and leadership conceptualised in the literature?
- What are the content and methodology related to a Leadership development assessment centre?
- What are the effects of a development assessment centre on the leadership development of the participants?
- To what extent does the perception of leadership competencies within the participants differ between participants on the one hand and their peers and subordinates on the other after the implementation of the development centre.

The research objectives are divided into a general objective and specific objectives.

General objective

The general objective of this research is to evaluate a leadership development assessment centre.

Specific objectives

The specific objectives of this research are:

- To conceptualise the terms *leadership development* and *development assessment centre*;
- To explore the content and methodology related to a leadership development assessment centre;
- To evaluate the results of a leadership development programme for employees on leadership skills/competencies; and
- To evaluate the results between participants and their peers and subordinates after the implementation of the development centre.

Expected contribution of the study

This study helped to advance the understanding and the practice of developing leadership to the benefit of individuals and organisations by means of a DAC. The DAC provided an open platform that brought together those who teach leadership development and those who practice it. This study sparked the development of new knowledge and educational practices regarding leadership development. This was a unique study, since literature on evaluating a DAC is limited in SA. The study further contributed to individuals and organisations as well as teams within organisations. Individuals learned more about leadership development and how they could improve their leadership skills and in which areas of the leadership they need to improve on. Teams in organisations were more effective and worked together cohesively and were more productive because they benefited from the cohesiveness of the team. For organisations it meant more productive workers and future leaders, leaders that would know their strengths and weaknesses. Better leaders for the organisation would mean knowledgeable workers that know what is expected of them, ready to make difficult decisions and act on those decisions.

RESEARCH DESIGN

Research approach

The research descended within experimental and descriptive research. A randomised pre-test-post-test group design was used (De Vos, Strydom, Fouché & Delpont, 2005). The independent variable, namely the leadership development assessment programme was used to assess the group, where after the outcome of the independent variable on the dependant variables, being the program that the participants had undergone, was assessed during the post-test. The same measuring instrument was administered, at two different occasions,

preferably with a one-month interval. The reason for the one-month interval was to determine whether or not there was an improvement in the participants' leadership skills/competencies.

Research method

This section consists of the research participants, measuring battery, research procedure, statistical analysis and the ethical considerations. Furthermore, research question one will be answered in the literature review.

Research participants

The sample consisted of employees of the middle management of a manufacturing organisation in the steel industry. The entire sample consisted of 36 managers ($N = 36$) that were included in the study. The sample further included two to three subordinates/peers/senior managers nominated by each manager that completed the questionnaire. The managers had to nominate the subordinates/peers so that they could rate their manager regarding how they see their manager and experience his/her leadership skills/competencies. Therefore the complete sample was 72 participants ($N = 72$), of whom 36 ($N = 36$) were the managers who underwent the DAC and 36 ($N = 36$) of whom were either subordinates or peers.

Table 1

Characteristics of the Participants ($N = 36$)

Item	Category	Frequency	Percentage
Gender	Male	30	83.30%
	Female	6	16.70%
Race	African	13	36.10%
	Coloured	1	2.80%
	Indian	3	8.30%
	White	19	52.80%
Age	26-30	4	11.20%
	31-39	13	39.00%
	40-49	12	33.50%
	50-57	7	19.60%
Language	Afrikaans	15	47.10%
	English	10	27.80%
	Sepedi	2	5.60%
	Xhosa	1	2.80%
	Zulu	1	2.80%

	Other	5	4.00%
Positions	Snr management	11	30.80%
	Middle management	25	70.00%

Table 1 indicates that the majority of the participants (83.3%) were male, and Afrikaans speaking (47.1%). The population (all the available participants) included white (52.8%) that were the majority, African (36.1%), Indian (8.3%) and coloured (2.8%) individuals. In total, 13 (39%) of the participants were between ages 31 and 39, 12 (33.5%) were between ages 40 and 49, 7(19.6%) between ages 50 and 57 and only 4 (11.2%) were between ages 26 and 30. The population consisted of 11 (30.8%) at senior management level and 25 (70%) at middle-management level.

Measuring battery

The measuring instrument used to assess leadership development was the New Leadership Behaviour Inventory – Version 2 (LBI - 2) (Spangenberg & Theron, 2011). The LBI-2 is a South African leadership questionnaire which assesses the degree to which a leader or manager demonstrates precise behaviours needed to develop and implement a challenging vision for the organisation, a work unit/department or project team. LBI-2 pre- and post-leadership measures can be utilized to determine the effectiveness of various organisational interventions. This was achieved by requesting leaders, peers or followers to rate the regularity at which they observed certain leadership behaviours in the participants. The candidate should have been exposed to or have had experience of being a leader or of managing a team, since the assessment focus was on observable behaviours. Theron and Spangenberg (2005) established the internal consistency of the LBI's data and conducted a reliability test on the 24 subscales, and the results indicated satisfactory homogeneity (Durrheim, 2008). Cronbach's alpha values yielded values greater than 0.74 and less than 0.80 (Durrheim, 2008), which can be viewed as acceptable.

The LBI-2 model comprised three key processes and 20 dimensions: Firstly, created vision and strategy; secondly, prepared the unit for implementing the vision and strategy and lastly, implemented the vision and strategy. The areas of application were firstly, that it provides leaders with inclusive insight into an individual's leadership behaviours across the leadership-management spectrum; secondly, that it provides a good overview of the collective leadership capacity of a particular team, department, unit or region;

thirdly, that it forms part of an initiative aiming at accelerating the learning and growth of designated candidates; and lastly, that the LBI-2 pre- and post-leadership measures could be exploited to determine the effectiveness of various organisational interventions. The report options used were provided with an overview of the leaders' leadership skills and also more detailed information per dimension and item. The strengths and developmental areas of each leader were highlighted in the report through a gap analysis.

Research procedure

In order to statistically and ethically gather data for the research, the participants were exposed to an information session concerning the research project after approval had been obtained from the research organisation's board of directors. Participants' consent was also obtained and thereafter they were introduced to a development programme. During the first assessment, the group participated in the development programme exercises such as in-basket exercise and interview. They also completed the LBI-questionnaire. The development programme was conducted over a three- (3) day period. On the first day of the development programme an in-basket exercise was administered. On the second day, interviews were conducted and a meeting was held and the LBI-questionnaire was completed, and on the last day, the participants received feedback regarding their performance of the previous two days. The development programme was presented by five professional consultants from different companies, and they are all registered Industrial Psychologists.

After the one-month interval, the participants, peers and subordinates were requested to once again complete the LBI-questionnaire.

Statistical analysis

The statistical analysis will be carried out using SPSS (SPSS Inc., 2009). Before any statistical analyses were done, the data were inspected for missing and/or unexpected values. The minimum and maximum values, as well as the means and standard deviations, were checked to determine their plausibility. Next, the skewness and the kurtosis coefficients of the items from the questionnaire were investigated. No items had skewness >2 or kurtosis >4 . The data was therefore considered to be normally distributed and the paired-samples and independent samples *t*-tests were conducted to establish the significance of differences between the pre- and post-test. An independent-samples *t*-test was used to compare the mean

score between the pre- and post-tests. To establish whether the variance of the scores for the pre-and post-test is the same, the Levene's test for equality of variances was utilised (Palant, 2010). The significance level of Levene's test can be viewed as $p=0.05$ (an indication that the variances for the two groups are not the same). In order to determine the statistically significant difference in the mean scores of the participants for the pre- and post-test, the paired-samples *t*-tests were used (Palant, 2010). Next, effect sizes were calculated to determine the magnitude of the differences between the pre- and post-test. The eta squared effect size statistics were used in this study, ranging from 0 to 1. The guidelines as set by Cohen (1988) were utilised to interpret the values, namely .01= small effect, .06=moderate effect and .14=large effect.

Ethical considerations

The values set out in the American Psychological Association's Code of Ethics (American Psychological Association, 2001a) will be followed to guarantee that the research will be carried out in an ethically suitable manner. All the research activities and initiatives generated by the research answer to the broad norm of "do no harm". Authorisation and permission to conduct the study at the research institution is obtained from their management as well as from the participants, where after the participants is thoroughly briefed regarding the design, aims and goals of the research, as well as how the research will benefit the participants. The participants are allowed to withdraw from the research at any stage if they so choose, and they are given the guarantee that the data obtained will be kept confidential.

RESULTS

The following section reports on the results of the study. First, the content and methodology of the DAC will be reported, followed by the *t*-test results.

Table 2

The content and methodology of the development assessment centre for managers

OBJECTIVE	OBJECTIVE	METHOD	LENGTH
Day 1 : In-basket exercise	The participants should be able to recognise effective leadership skills and communication skills	Group exercises Individual exercises	8 hours
Day 2: Session 1: Interviews	The participants should be able to make quick decisions under pressure and see all their decisions through without the necessary support	Role play interviews	3 hours
Session 2: Meeting	The participant should be able to work cohesively within a group and be able to take part in all group discussions	Group discussion	4 hours
Session 3: LBI(2)	Each participant rates him/herself as an effective manager against 120 items	Paper and pencil	1 hour
Day 3: Feedback	Each participant receives feedback regarding the previous two days.		

The implementation of the development assessment centre took place over a three-day period which included various sessions. Each day and session involved specific objectives and methods. As can be seen from the results, during day 1, session 1 included an in-basket exercise. The participants were each requested to complete a series of leadership exercises and to indicate how they see themselves as leaders. During the second session, role-plays were utilised to determine quick decision making and adaptability of the participants. Secondly, a meeting with the entire group was held. In this meeting the group was given a specific scenario to discuss and to come up with good and innovative ideas and solutions. The group also had to appoint a person who would be the group leader.

Session 3 included the administration of the LBI (2) on the managers, peer and/or subordinate. Lastly, feedback was given to the manager concerning his/her performance over the past three days.

Next, the results of the Leadership Behaviour Inventory (LBI-2) will be reported. The researchers performed a paired-samples *t*-test to determine the effect of the leadership development centre on participants. The results are displayed in Table 3.

Table 3

The significance of the differences between the pre- and post-test scores for the Leadership behaviour inventory (LBI-2) for the participants (N=36)

ITEM	Pre (N = 36)		Post (N =36)		T	Sig.
	Mean	SD	Mean	SD		
Aware of external environment	3,69	0,56	4,22	0,38	-8,19	0,000
Aware of internal environment	3,64	0,62	4,30	0,32	-8,56	0,000
Developing vision	3,55	0,57	4,24	0,36	-10,12	0,000
Trust	3,77	0,39	4,39	0,31	-8,82	0,000
Articulating vision	3,51	0,63	4,42	0,39	-11,16	0,000
Strategy	3,86	0,50	4,49	0,29	-10,87	0,000
Risk	3,60	0,64	4,32	0,35	-8,67	0,000
Leading	3,76	0,53	4,44	0,28	-9,02	0,000
Following	3,51	0,64	4,23	0,38	-8,25	0,000
Systems	3,51	0,48	4,29	0,28	-11,81	0,000
Culture	3,83	0,49	4,47	0,28	-9,42	0,000
Influence	3,77	0,60	4,45	0,34	-8,64	0,000
Honour	3,89	0,54	4,43	0,31	-7,26	0,000
Decision making	3,97	0,49	4,51	0,33	-7,01	0,000
Values	3,97	0,53	4,51	0,38	-7,58	0,000
Learning	3,71	0,62	4,46	0,33	-8,37	0,000
Management	3,74	0,66	4,36	0,41	-7,30	0,000
Treatment	3,63	0,63	4,13	0,41	-7,16	0,000
Inspiring	3,67	0,63	4,26	0,37	-7,54	0,000
Coordination	3,90	0,95	4,33	0,31	-2,95	0,006
Planning	3,62	0,58	4,35	0,36	-8,48	0,000
Reviewing performance	3,82	1,60	4,35	0,33	-8,08	0,004
Reward	3,77	1,16	4,37	0,37	-3,05	0,000
Acting entrepreneurial	3,76	0,68	4,37	0,37	-5,75	0,000

* $p \leq 0,05$

The results indicate that there were statically significant increases across all the leadership competencies between the pre-test and the post-test measurements. The largest increase manifested between the Articulating vision competency, pre- and post-test ($M = -0,92$, $SD = 0,49$), as well as the Systems competency's pre- and post-test ($M = -0,79$, $SD = 0,40$). The

smallest increase was noticeable between the pre- and post-test of the Co-ordination competency ($M = -0,43$, $SD = 0,88$).

The difference in the perception of participants' leadership competencies between participants themselves and their peers and subordinates are reported in Table 4.

Table 4

The significance of the differences between the post-test scores for the Leadership behaviour inventory (LBI-2) for the participants ($N=36$) and their peers and subordinates ($N = 36$)

ITEM	Participants		Subordinates and peers		<i>t</i>	Sig.
	Mean	SD	Mean	SD		
Aware of the external environment	4,22	0,34	4,40	0,59	-1.54	0.130
Aware of the internal environment	4,30	0,32	4,38	0,71	-0.63	0.528
Developing vision	4,24	0,36	4,30	0,80	-0.41	0.687
Trust	4,39	0,31	4,25	0,78	0.99	0.325
Articulating vision	4,42	0,39	4,24	0,77	1.25	0.216
Strategy	4,49	0,29	4,42	0,55	0.70	0.487
Risk	4,32	0,35	4,25	0,75	0.51	0.610
Leading	4,44	0,28	4,35	0,72	0.69	0.495
Following	4,23	0,38	4,28	0,75	-0.31	0.754
Systems	4,29	0,28	4,36	0,65	-0.53	0.602
Culture	4,47	0,28	4,47	0,67	0.06	0.954
Influence	4,45	0,34	4,40	0,65	0.45	0.652
Honour	4,43	0,31	4,41	0,65	0.18	0.854
Decision making	4,51	0,33	4,26	0,79	1.75	0.087
Values	4,51	0,38	4,39	0,70	0.89	0.376
Learning	4,46	0,33	4,24	0,66	1.76	0.084
Management	4,36	0,41	4,31	0,73	0.35	0.730
Treatment	4,13	0,41	4,24	0,76	-0.78	0.441
Inspiring people	4,26	0,37	4,23	0,78	0.15	0.878
Coordination	4,33	0,31	4,44	0,65	-0.88	0.381
Planning	4,35	0,36	4,40	0,72	-0.36	0.717
Reviewing performance	4,35	0,33	4,45	0,69	-0.76	0.451
Rewarding performance	4,37	0,37	4,42	0,67	-0.44	0.665
Acting entrepreneurial	4,37	0,37	4,22	0,87	0.96	0.342

* $p \leq 0,05$

The independent-samples *t*-test produced results for Levene's test for equality of variance. The significance level of Levene's test was ≤ 0.5 , indicating that the two groups (participants/peers and sub-ordinates) were not the same, therefore the alternative *t*-values, namely 'equal variances not assumed' were used. Based on these results, no significant differences in the scores for participants or their peers and sub-ordinates were found across any of the leadership competencies. The extent to which these two groups differ across the leadership competencies was small; the eta squared values ranged between 0.000 and 0.042.

DISCUSSION

This study focused on evaluating a development assessment centre, from a leadership development perspective. It is important for any organisation to have managers that possess the necessary leadership skills and abilities to be competent at their job. Therefore the development assessment centre aimed to improve the current leadership skills of each participant by means of a development process.

Concerning the first objective of this study, to conceptualise the terms leadership development and development assessment centre, literature indicated that leadership development relates to providing leaders with opportunities to learn from their work rather than taking them away from their work to learn (Corner, 2011). Scarf (2010) states that DACs show excellent power to improve the decisions made about a key factor of organisational success such as the leaders that are recruited, promoted and appointed to senior positions.

DACs can be applied for different purposes, of which leadership development is one such function (Edenborough & Kogan, 2005). DACs usually include a set of competency constructs; a mixture of these constructs adds up to a score, and this score will predict future overall effectiveness (Francis et al., 2004). Corner (2011) states that leadership development can be seen as a main concern, not an addition to everything else.

The second objective related to the content and methodology of a leadership development assessment centre. For purposes of this study, the DAC included a three-day work session with various simulations. The DAC evaluated in this study was an already-established programme (Koekemoer, 2010) that was made available for the study. The overall competencies utilised in this DAC included assessment of the internal and external

environment of the unit, development and selling of an environmentally appropriate yet challenging vision for the unit, preparation of the unit for the implementation of the vision, and implementation of the vision. These were broken down into behaviour anchors adapted for the organisation, according to the Behaviour Anchor Rating scale in order to view the competency as a behaviour (Smith & Kendall, 1983).

During day 1 the participants were each requested to complete a series of leadership exercises and to indicate how they see themselves as leaders. Each participant had to complete these exercises within a specific time frame. The purpose of these exercises was to determine whether the participant can make quick decisions when faced with a series of decisions, whether or not the participant can work under pressure and then also whether the participant can work cohesively within a group. At the end of the first day, all the participants received feedback as a group on the entire day and what they would expect for the following day. Studies indicate that the role of feedback during a DAC is imperative and should be intended to influence the participant to improve their performance (Kluger & DeNisi, 1996). Since research indicate that participants who received feedback concerning their performance during a DAC showed significant increase in their performance (Fleenor, 1988), this was viewed as an important element during this study.

During the second session, role-plays (the role-player was an industrial psychologist) were utilised to determine quick decision making and adaptability of the participants. The role-play exercise consisted of quick thinking, quick decision making and listening and adapting skills. All the participants received the same scenario, and were required to correct and sort out all the problems during the simulation. In this exercise the participant is tested on his/her adaptability, listening and problem solution.

Secondly, a meeting with the entire group was held. In this meeting the group was given a specific scenario to discuss and to come up with good and innovative ideas and solutions. The group also had to appoint a person who would be the group leader. During this exercise, each participant was rated individually, based on cooperation, contribution, working cohesively within a group, leadership, listening and support towards some of the ideas and solutions of other group members.

Session 3 included the administration of the LBI (2) on the managers, peer and/or subordinate. All the participants had one hour to complete the paper and pencil LBI(2) questionnaire. The questionnaire consisted of 120 questions based on leadership skills and leadership abilities. Each participant had to rate him/herself in accordance with how they see themselves as a manager in their organisation. The same questionnaire was given to the participants one month later to determine whether or not they would still rate themselves the same. This was done to determine whether the DAC had had a positive impact on the participants' leadership development.

Lastly, feedback was given to the manager concerning his/her performance over the past three days. All the participants that had undergone the DAC received feedback on the last day. This feedback included areas that stood out and where participants did exceptionally well. The feedback also included constructive criticism, areas the participant can work on and that need more attention and development. Ideas were given on how the participant can improve this area of development. Each participant received individual feedback provided by the panel of industrial psychologists that were involved in the administration of the three-day DAC.

Concerning the results of the third objective, namely to evaluate the effects of a Leadership Development Programme for Employees, statically significant increases were recorded across all the leadership competencies between the pre-test and the post-test measurements. The largest increase manifested between the pre- and post-test for the competency, Articulating vision. This finding can be supported by the study of Heathfield (2012), stating that leaders or managers have vision – a vision for themselves and the company and that managers share a dream and direction which their subordinates and peers wish to share and follow. Furthermore, a leadership vision is manifested in the organisation's leaders' beliefs, actions, goals and values.

The results further showed an increase in the leadership competency of optimising structures and systems between the pre- and post-test. This could be an indication that managers adapt structures, processes and procedures to support implementation of strategy in a changing environment. A similar finding was reported by Fischer and Engelbrecht (1992) concerning task structuring, development and empathy. Fischer and Engelbrecht state that Thornton and Byham (1982) indicate that these competencies seem to show the biggest improvement over

time. Furthermore, Kaminski (2000) states that adaption to change has become common for all types of organisations and that the effects of change are multifaceted. Hence there will be an increase in the adaption of structures, processes and procedures to support implementation of strategy in a changing environment.

The smallest increase was noticeable in the results of the facilitating interdepartmental co-ordination competency during the pre- and post-test. This is the competency that facilitates interdepartmental co-ordination and helps subordinates and peers to see the big picture. It seems that more development is needed to assist these managers to facilitate co-ordination. DiFonzo (2007) believes that a lack of communication regarding change from the top management to the rest of the company is the reason why employees do not want to buy-in on change. Furthermore, this is also the reason why the managers do not want to communicate change to their subordinates or peers, because their own management is not following the correct channels to implement change (DiFonzo, 2007), explaining the lack of sufficient increase in this competency.

Concerning the results for the fourth objective, there are no significant differences in the scores concerning the perception of the participants' leadership competencies between how the participants viewed themselves and how their peers and subordinates perceived them on the results of the LBI(2) for the post-test. Unfortunately, the pre-test data for the peers and subordinates are not available due to these employees' unavailability to administer the questionnaire. Therefore only the post-test data for the two groups could be compared. It seems that both groups perceived the development in the managers' leadership competencies equally. These results of this study therefore indicate that the initial aim of this study, namely to improve the current leadership skills of each participant, was reached. This study concurs with findings from Fischer and Engelbrecht (1992) stating that participants were able to improve their managerial skills during a DAC. Furthermore, it seems that the role of feedback during a DAC is very important. Studies indicate that participants who received feedback concerning their performance during a DAC showed significant increase in their performance (Fleenor, 1988).

The conclusion can be drawn that the results of the evaluation of a leadership development centre in a manufacturing organisation in the steel industry are positive. It seems that the middle-level managers who participated in this study showed an increase in the leadership

competencies, as measured by the LBI (2) after the DAC had been implemented. Moreover, the DAC showed particular increase regarding the leadership competencies of articulating vision and optimising structures and systems, which correlates with previous studies. Hence the results are in line with literature regarding the improvement of leadership and confirm that a DAC can indeed improve leadership abilities and skills.

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CHAPTER 3

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

In this chapter, conclusions regarding the study are given in accordance with the general and specific objectives. The limitations of this research are discussed, followed by recommendations for the organisation and future research.

3.1 CONCLUSIONS

The general objective of the study was to evaluate a leadership development assessment centre. The results generally indicated that the evaluation of the DAC was a success. It can be viewed that the DAC had a positive impact on the participants and their leadership development.

The first objective of this research was to conceptualise the terms *leadership development* and *development assessment centre* from the literature. Edenborough and Kogan (2005) bring to our attention that development assessment centres can be applied for different purposes of which leadership development is one such function. Leadership development relates to providing leaders with opportunities to learn from their work rather than taking them away from their work to learn (Corner, 2011), and can be defined as a deliberate effort to provide leaders with opportunities to learn, grow and change. The main purpose is to provide leaders over time with the skills to function effectively within the organisation.

DACs is the most popular method to use when it comes to developing managers (Conger & Benjamin, 1999). Rupp, Baldwin and Bashshur (2006) remark that DACs provide the managers with the assistance in coaching, feedback, and experiential learning opportunities. The main focus of DACs is developing traditional leadership competencies such as communication, conflict management, and problem solving. Organisations with the sole

purpose of catalysing development behaviour are increasingly developing DACs (Ballantyne & Povah, 2004; Lee & Beard, 1994 and Thornton & Rogers, 2001).

The second research objective of the study was to explore the content and methodology related to a leadership development assessment centre. For purposes of this study, the DAC included a three-day work session with various simulations. The DAC that was evaluated in this study was an already established programme (Koekemoer, 2010) that was made available for the study. The DAC involved a variety of simulations based on leadership competencies for middle-level managers, with a view to assist in developing the participants' leadership skills.

The third research objective of this study was to evaluate the effect of a leadership development programme for employees on leadership skills/competencies. There were statically significant increases across all the leadership competencies between the pre-test and the post-test measurement for the results of the participants. The results further indicate that no significant differences occurred in the scores concerning the perception of the participants' leadership competencies between how the participants viewed themselves and how their peers and subordinates perceived them on the results of the LBI(2) for the post-test.

The fourth research objective was to evaluate the different results between participants and their peers and subordinates after the implementation of the development centres. The conclusion can be drawn that the results of the evaluation of a leadership development centre in a manufacturing organisation in the steel industry is positive. It seems that the middle-level managers who participated in this study showed an increase in the leadership competencies as measured by the LBI (2) after the DAC had been implemented.

3.2 LIMITATIONS OF THIS RESEARCH

With regard to the limitations of the present study, the following can be outlined:

Initially the participants were very keen to complete the questionnaires during the pre-test. However, with the post-test it was more difficult. Getting all the participants together was difficult because of their working hours and busy schedules. Even though everyone was electronically available, there were still a few that did not respond and did not wish to further

participate in the study. All the participants had to nominate at least three subordinates to rate them, but it was extremely difficult to communicate with those people and to try to explain to them what it is all about and why it was necessary for them to complete the questionnaire, and unfortunately only some of them responded via e-mail. This resulted in the pre-test questionnaires not being completed for this group, which lead to the unfortunate incidence that this data was not available to compare with the experimental group.

Secondly, some of the participants did not want to write their name on the questionnaire due to being afraid that the person they rated may learn how they rated them and also rated that person very high and did not answer the questionnaire honestly.

Thirdly, the results may not be representative of all managers across South Africa due to the convenience sampling. The sample only consisted of managers of a steel manufacturer, specifically those of the Gauteng plant, which implies that the results cannot be generalised to managers of other plants or organisations.

3.3 RECOMMENDATIONS

Despite these limitations, the research findings have important implications for organisations concerned and future research.

3.3.1 Recommendations for the organisation

It is important for organisations to employ managers that possess good leadership skills and abilities. The success of any organisation lies within the foundation of leadership and how that leadership can be utilized and exploited to the organisations own advantage. It seems that DACs are beneficial to South Africa's organisations, since it impacts positively on leadership. Organisations can now take full advantage of this opportunity and at the same time give their employees a chance of enjoying further development and growth – as both and individual and a leader. By utilising a DAC, organisations give themselves a chance of growing and being the best they can and being able to compete with other organisations.

The positive outcome of this study has a positive effect for the field of Industrial Psychology. It provides another effective tool to develop leaders in the workplace; hereby the initial

question, namely as to how major organisations survive in a competitive business world and create world-class leaders for their organisation, can be answered by suggesting that DACs can provide a platform for developing such leaders.

3.3.2 Recommendations for future research

It is recommended that future research include participants from other plants in order to be able to generalise the results. It could also be beneficial to include participants from other organisations to determine whether the DAC will have the same effect on other organisations' leadership development.

For future research, the 360° approach can be followed, where each participant can have at least five other people rating him/her according to his/her leadership abilities and skills. This approach might give a clearer perspective regarding the effect of the DAC on leadership development.

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