

Management development in education: fact or fiction — some preliminary findings

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Whether behaviour dimensions in a management context can be changed by means of training programmes is a debatable issue. Little if any research has been done in this regard and, in the education setting, it appears no research at all has been done. Against this background the first experimental research project of its kind was launched in South Africa. The research design made provision for an experimental and a control group, both consisting of an equal number of secondary school principals. As a first step, both groups were exposed to a recognised assessment centre (ACEL) during which certain management dimensions were evaluated. The second step was to put the experimental group through a management training programme followed by the third step, namely, a second assessment for both groups. According to the statistical results, two behavioural dimensions of the experimental group showed a significant difference before and after the training programme, whilst no significant difference was recorded for the control group. This research project does not claim that management dimensions of educational leaders can be changed by means of training. The work should rather be regarded as a pilot study and the first empirical attempt of this kind in the field of education management. The findings are therefore preliminary and can only be verified by a longitudinal study.

Introduction

It is generally accepted that the individual's behaviour can be modified. In the educational situation the teacher is assumed to modify learner behaviour and in the context of school management, it is assumed that the educational leader is able to influence staff behaviour. The underlying principle is that acceptable behaviour can be strengthened, whilst deviant behaviour can be eliminated (Boehm 1985:41).

The modification of behaviour has implications for management training and development. If the (educational) leader or potential leader's behaviour could be modified by means of training inputs, this might lead to changes in certain behavioural dimensions. It is important for experimentation to determine which management dimensions have the potential to be developed. Clarity on these dimensions is a prerequisite for meaningful management development. It is possible, however, that certain management dimensions cannot be developed, or that management training (development) programmes allow little, if any, development in a specific management dimension (Van der Westhuizen, 1990:267).

In order to develop (educational) leaders effectively, knowledge of the various management dimensions that can be developed, as well as knowledge of the management potential of the education leader, with regard to such dimensions, are necessary. This does not imply in the first place that an evaluation of the management experience or knowledge of the leaders should be conducted, but rather that an outcomes-based approach towards their management potential in certain management dimensions should be followed (Thornton & Byham, 1982:17-20).

Some of the most renowned research in this field in South Africa has been reported by Britz (1984) and Rall (1987). Only Rall (1987: 191-195; 246-250) indicated that training programmes have a significant impact on management dimensions. No research in the educational setting has been undertaken on this phenomenon in South Africa. From an analysis of master's and doctoral degrees in Education Management in South Africa that have focused on management development, none of the relevant 11 studies reported findings of experimental research within the educational setting. A similar situation was found after analysis of 129 articles published in South Africa in the field of educational management development.

Against this background, a research programme was designed to determine whether management training leads to change in beha-

vioural dimensions of educational leaders.

The following hypothesis was formulated:

Hypothesis (H1): Management training leads to significant differences in certain behavioural dimensions of educational leaders.

Empirical investigation

The research can be described as experimental, as the conditions determining the variables were deliberately controlled. A group of educational leaders was selected for the purpose of assessment and reassessment by an assessment centre.

Measuring instrument

The assessment centre was selected as instrument to determine the management potential of the educational leaders involved in the project.

An assessment centre is a validated instrument which refers to a comprehensive, multifaceted view of the individual in which information yielded by a variety of measurement techniques is brought together (Moses & Byham, 1977:3). As such, assessment centres should not be thought of as specific venues, but rather as processes consisting of reliable, validated instruments used to determine managerial potential and behaviour (Jaffee & Sefcik, 1980:40). Van der Westhuizen, (1987:192) provides an apt definition of an assessment centre as an instrument which has as outcome the experimental determination of management behaviour.

In the field of education, the assessment centre was first used by the National Association of Secondary School Principals (NASSP) in 1978. Since then, more than 10 000 participants have been evaluated (NASSP, 1998:32). In South Africa, two assessment centres for educational leaders have been developed, at Potchefstroom University and at University of the Free State (UFS).

The UFS centre, known as the Assessment Centre for Educational Leaders (ACEL), was used in this research. ACEL is a relatively cost-effective, user-friendly instrument, designed to determine the management behaviour of educational leaders (Heyns, 1998:156). During the assessment process, the management behaviour of the participants is assessed by observing various dimensions of management behaviour during participation in simulated exercises. Four exercises are used which may be divided into two categories, oral and written exercises. The oral exercises consist of a leaderless group exercise in the form of a selection committee and a one-to-one exe-

rcise, known as a counselling interview. The written exercises include an in-basket and a situation-analysis exercise (Heyns, 1998:156).

The above-named dimensions consist of 11 well-defined clusters of managerial behaviours. According to Seegers (1992:291), these dimensions are subsumed by five constructs or areas that share certain commonalities:

Area	Behavioural dimensions
• Drive	• Initiative • Tenacity
• Decision-making	• Analytic ability • Judgement • Flexibility
• Leadership	• Utilisation of human resources • Decisiveness • Task structuring • Empathy
• Communication	• Reasoning power
• Administration	• Planning and organising

The performance criteria of the ACEL programme, which focus on the behavioural dimensions of educational leaders, are in line with the principle that assessment centres should rather be outcomes-based driven than based on assessment of experience or knowledge (Fischer, 1992:24).

As far as assessors are concerned, it is expected that an assessment centre should consist of an administrator and well-trained, experienced assessors (Seegers, 1992:290; Spangenberg, 1991:31; Van der Westhuizen, 1997:95). The ACEL programme complies with this principle.

Information is recorded with the use of technical aids such as audio and video apparatus. The assessment session is followed by concession discussions under the guidance of the administrator. Finally, the assessment reports are compiled and sent to the participants.

The research group

The sampling method that was applied could be termed convenience sampling (Gall, Borg & Gall 1996:227 - 229). A sample consisting of 24 educational leaders (school principals, deputy principals and heads of department) was selected from a number of conveniently situated schools. Logistical problems restricted the sample to this relatively small size.

The participants were randomly divided into an experimental group and a control group of equal size. The participants committed themselves to attending a follow-up assessment centre five months after the first one. Due to illness, unfortunately, only 11 participants of the experimental group and 10 of the control group were able to attend the second assessment.

Experimental design

The model designed by Van der Westhuizen (1990:267), illustrated in Table 1, was applied in this research.

The assessment centre results of M1 and M2, in respect of both R1 (experimental group) and R2 (control group), were compared to determine whether attending the management development programme resulted in improved management skills, and as such to determine which management skills have the potential to be developed.

Procedures

The experimental and the control groups were put through the assessment centre (ACEL) and their behavioural dimensions recorded. At the end of the assessment exercise, the experimental group received induction with regard to the ACEL programme. The control group

Table 1 Research project with reference to management development

	R	M	M
R1	Work	M1 assessment centre	Work and participation in a suggested management development programme
R2	Work	M1 assessment centre	M2 assessment centre

was excluded from the induction exercise in order to isolate them from any form of training.

The assessment exercise was followed up within two months with a practical management training programme for the experimental group. The control group was again excluded from this training course.

Within another three months, both groups were brought in for a second assessment exercise using the ACEL instrument. Their behavioural dimensions were assessed and compared with the scores of their first assessment.

The rationale for assessing the experimental group twice was to determine the influence of the management training on their behavioural dimensions. The rationale for putting the control group through the assessment centre (without management training) a second time was to determine whether ACEL *per se* had any influence on the participants' behavioural dimensions.

Materials

During the assessment exercise, the management behaviour of the participants was evaluated on the basis of dimensions of management behaviour observed during different simulated exercises. The complex interrelatedness of these two issues, namely, the exercises and the behavioural dimensions is illustrated in Table 2.

Materials such as assessor manuals, instructions to participants, stationery, and report forms were complemented by technological aids such as video and audio apparatus.

In the management training programme, the course objectives envisaged were to

- acquaint participants with various management tasks;
- acquaint participants with the application of specific management techniques;
- give participants practical experience in the fulfilment of management tasks; and
- learn from one another.

The contents of the two day course included the following themes: situation management approach, communication, decision-making and problem-solving, planning, organising, motivation and work enrichment, motivation through planning, motivation through delegation, motivation through exercising control, managing under-achievers, and reward for achievement.

These themes may be linked with the management behaviour dimensions which were addressed during the assessment session. The specific appeal of each theme towards the various dimensions is illustrated in Table 3.

Data analysis

After completion of the follow-up assessment, the first step was to document and prepare the data for statistical processing and analysis.

The second step was to determine the statistical, as well as the practical, significance of the observed difference in means within the two groups. In this research the paired *t* test was applied to compare the significance of the differences in the mean scores during the first and follow-up assessments, within the two groups (Gall, Borg & Gall, 1996:182).

Table 2 Dimensions of management behaviour as assessed by simulated exercises

Exercises	Dimensions										
	Tenacity	Initiative	Analytical ability	Judgement	Flexibility	Utilisation	Decisiveness	Task structuring	Empathy	Reasoning power	Planning & organisation
Selection committee	X	X	X	X	X		X	X		X	
In basket		X	X	X		X	X	X	X		X
Situation analysis		X	X	X		X					X
Counselling interview				X	X	X	X		X	X	X

Table 3 Dimensions of management behaviour as addressed by the contents of the management training programme

Contents of training programme	Dimensions										
	Tenacity	Initiative	Analytical ability	Judgement	Flexibility	Utilisation	Decisiveness	Task structuring	Empathy	Reasoning power	Planning & organisation
Sit. Man. approach	X		X	X	X			X		X	X
Communication		X	X	X	X		X	X	X	X	X
Decision-making/ problem-solving	X	X	X	X	X		X	X		X	X
Planning	X		X	X	X	X		X		X	X
Organising		X	X	X		X	X	X		X	X
Motivation: Work enrichment			X	X	X		X	X	X	X	X
Motivation: Planning	X	X	X	X	X	X		X		X	X
Motivation: Delegation		X	X	X		X		X		X	X
Motivation: Control		X	X	X		X	X	X	X	X	X
Under-achievers		X	X	X	X		X	X	X	X	X
Reward		X	X	X				X		X	X

Consequently the *p* values were calculated to determine the level of significance of the observed differences between the two means. In this research a *p* value of less than 0.05 indicated significant differences between the mean values for the experimental and control groups, respectively.

The computerised result of the observed data for the experimental group (R1) is presented in Table 4.

The result illustrating any significance between the pre- and post-scores of the control group is presented in Table 5.

To determine the practical significance between the pre- and post-intervention scores, the *d* value (effect size) was calculated. Using the *d* value, the effect of the training on improvement of management skills can be described in quantitative terms. In this research, the *d* value was computed for only those *p* values that were significant. In order to interpret the *d* value, the following guidelines were adopted (Cohen & Manion, 1988:165):

- d* = 0.2 (small effect)
- d* = 0.5 (medium effect)
- d* = 0.8 (large effect)

Findings

The scores of the experimental group presented in Table 4 include the

Table 4 Significance of differences between pre- and post-scores of experimental group (N = 11)

Dimensions	Difference (mean)	Standard deviation	<i>p</i> value	<i>d</i> value
Tenacity	6.8	32.8	0.057	
Initiative	19.3	32.7	0.079	
Analytical ability	10.5	70.6	0.628	
Judgement	7.6	62.6	0.693	
Flexibility	15.0	46.0	0.303	
Utilisation	37.5	82.0	0.160	
Decisiveness	26.7	50.4	0.109	
Task structuring	24.6	31.3	0.026	0.79
Empathy	5.5	38.8	0.651	
Reasoning power	17.0	61.0	0.375	
Planning and organising	29.3	31.1	0.011	0.94

achievements of the participants in all 11 behavioural dimensions at the start of the research programme (i.e. pre-scores), as well as the achievements of the same participants after they had received management training (i.e. post-intervention scores).

The data, pertaining to only two dimensions of the experimental group, appear significant at the p level, namely, task structuring and planning and organising. In regard to the practical significance, the d value for only task structuring (0.79) and planning and organising (0.94) could be classified as a large effect.

According to Cohen and Manion (1996:223), it could be concluded that both these dimensions (task structuring and planning and organising) illustrated sufficient evidence of significance as well as practical significance difference between the pre-intervention and post-intervention scores of the experimental group.

In regard to the pre- and post-scores of the control group (*cf.* Table 5) no significant difference in any of the behaviour dimensions was illustrated.

Table 5 Significance of differences between pre- and post-scores of control group (N = 10)

Dimensions	Difference (mean)	Standard deviation	p value
Tenacity	1.0	28.8	0.992
Initiative	26.4	39.1	0.062
Analytical ability	5.9	67.5	0.789
Judgement	29.6	71.1	0.221
Flexibility	10.6	53.9	0.550
Utilisation	25.2	38.5	0.069
Decisiveness	22.7	61.5	0.273
Task structuring	14.2	35.6	0.239
Empathy	10.5	37.0	0.403
Reasoning power	0.1	48.4	0.995
Planning and organising	7.4	55.0	0.682

It could therefore be concluded that the difference in the pre- and post-scores of two dimensions in the experimental group could be regarded as being the result of the management training this group received. The research hypothesis (H1) could therefore be accepted.

Conclusion

The training programme

The significant difference illustrated in the experimental group with regard to two behavioural dimensions (task structuring and organising and planning), coupled with no meaningful difference in pre- and post-intervention scores in the control group, could be attributed to the influence of the management training programme presented to the experimental group. All the themes (100%) included in the training programme focused on these two dimensions (see Table 3). As such the training programme could be provisionally accepted as valid for these two dimensions.

Also, the unchanged position of the remaining dimensions may be explained in terms of a shortcoming in the training programme itself. It is possible that the aspects dealt with in the training programme did not have the potential to bring about the expected changes in those particular behavioural dimensions.

A third explanation, for some of the dimensions revealing no change, could be that possibly the behaviour of educational leaders in regard to these dimensions cannot be changed by means of training.

Validity of the assessment instrument

The fact that the results of the control group remained constant from one assessment to another, may be cited as evidence of the validity of the assessment instrument (ACEL).

Shortcomings of the research

According to Gay (1976:77), a minimum of 15 subjects per group for correlational studies will give some degree of confidence that conclusions reached concerning differences are valid. Against this background, the sample size of this research may have been a shortcoming (11 and 10, respectively). However, Gay (1976:77) also states that if a number of such studies provide similar results, confidence in the findings would generally be as high, if not higher, than that for a single study based on a very large sample.

Perspective

This research is the first empirical attempt in South Africa in the field of educational management. It must therefore be regarded as a pilot study and the findings as preliminary. These findings can be verified only by means of a longitudinal study.

Given that this research project is only regarded as a pilot project, some follow-up projects are suggested:

- Assessment of similar groups of school leaders subjected to identical training programmes in order to confirm the findings of this research programme on the difference in the two dimensions, task structuring, and planning and organising.
- Assessment of similar groups of school leaders but subjected to alternative training programmes, in order to determine the trainability (or otherwise) of other behavioural dimensions as well as validity of the training programme.

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