Educators' perceptions of the school as a learning organization in the Vanderbijlpark-North District, South Africa

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This article outlines the principal findings of research that sought to provide a comprehensive understanding of schools as learning organisations in the Vanderbijl Park-North District of the Gauteng province of South Africa. The quantitative research methodology used was of major importance in obtaining data that were grounded largely on the theoretical framework of learning organisations as well as in the personal experiences of educators and principals. The purpose of the research was to investigate the essential features of learning organizations, the perceptions of educators in respect of these essential features and the guidelines that could be provided for schools to cope with the demands of continuous learning and adaptation in a turbulent environment. A major finding was that the learning disciplines of personal mastery, mental models, a shared vision, teamwork and systems thinking were fundamental to two factors: namely, a collaborative culture and personal beliefs about educator commitment. The school can therefore function as a learning organization by cultivating a climate where a collaborative culture and beliefs that stimulate educator commitment can develop.

Introduction and background to the problem

The social, political and economic environment of the new South Africa is radically different from that of the past five decades. This difference has become more prominent over the past five years with major shifts occurring in the private and educational sectors. Organisational development practitioners describe the changing external environment within which schools now function as turbulent. This is not only true in South Africa, but can be regarded as a global phenomenon. A turbulent environment is indeed a messy environment to work in (Harding, 1995:1) with unexpected shifts in direction in social, economic, political and educational patterns that constantly break with existing familiar or known trends. These shifts cause turbulence in the external environment, which in one way or another poses a number of challenges for schools.

These shifts necessitate a new way of looking at and understanding the teaching and learning strategies of both educators and learners in schools, because schools must be relevant to the demands of a changing world. The new way of conceptualising the teaching and learning strategies involves not only "fundamental mind-shifts" (Senge, 1990:13) but also the ability to view schools as "complex systems that must continually learn in order to respond effectively to the pressures of a fast changing and complex external environment" (http://www.connection.se/cogwheelschool/abstract.htm). In view of the foregoing we argue that while schools have a relatively stable internal environment, they operate within a fast-changing and turbulent external environment. Consequently, in order to respond proactively to the pressures of the external environment, schools are now urged to learn fast in order to deal effectively with these pressures.

The internal environment of the school is made up of educators, learners, teaching and learning processes, resources, culture and climate, relationships and physical assets. The external environment consists of the social, political, economic, technological and legal aspects that are characterised by constant flux and transformation (turbulence). As a result, the two environments are in constant interaction and thus exert mutual influence. The continuous interaction creates a context for mutual feedback between schools and their external environments.

The school may thus be seen as a complex system that has both an internal and an external environment. As a complex system the school is a "network of interdependent components that work together to accomplish the aim of the system" (http://www.netnet.net/~gusn/system.htm). The generally acknowledged central tenet of systems thinking is the concept of "wholeness" (Letseka, 1995:287). A common cliché used in systems thinking is that "the whole exceeds the sum of its parts" that is a system, such as a school, is something "that maintains its functions as a whole through the interaction of its parts" (http://www.emeraldinsight.com). It emerges from this explanation that a system is "a product of the interaction of its parts" (http://www.netnet.net/~gusn/system.htm).

In the context of a learning organisation, all the aspects of the internal and external environments have an impact on the degree of school effectiveness. Moreover, to respond effectively to the demands of a fast-changing and complex (turbulent) external environment educators must engage in continuous generative learning through adopting and applying Senge's (1990) five learning disciplines. "Generative learning emphasizes continuous experimentation, the freedom to choose what to build on and the use of feedback received in an on-going examination of the way schools go about defining and solving their problems"(Malhotra, 1996; Schein, 1999:168). Furthermore, "in a learning organisation, everyone who works there, or who has contact with it is encouraged to learn" (http://www.emeraldinsight.com). Therefore, principals and educators should continually expand their capacity to create the results they truly desire. Senge, Kleiner, Roberts, Ross and Smith (1996:49) posit that a learning organisation is a school "where new and expansive patterns of thinking are nurtured, where collective aspiration is set free and where educators are continually learning how to learn together".

This research attempted to show that conceptualising schools as learning organisations is appropriate, given the new challenges of a fast-changing world. To be relevant in a knowledge society, new skills, capabilities and knowledge are required. The focus of each school should therefore fall on the creation of an enabling culture, through enhanced individual commitments to continuous learning, development and growth.

From the above it can be inferred that learning organisations are ones that are able to cope with the demands of continuous change and adaptation. These organisations are characterised by their ability to:
- create continuous learning opportunities and systemic problem-solving;
- promote inquiry and dialogue, making it safe for people to share openly and take risks;
- encourage collaboration to learn from experiences and best practices of others;
- embrace creative tension as a source of energy and renewal;
- establish systems to capture and share knowledge quickly throughout the organisation; and
- continuously be aware of and connect with their external environment (Kerka, 1995:1; Van der Merwe, 1993:230).

The basis for continuous learning is underpinned in Senge's

(1990) five learning disciplines: namely, personal mastery, mental models, shared vision, team learning and systems thinking (Wallace, Engel & Mooney, 1997:74-76; Senge, Kleiner, Roberts, Ross & Smith, 1996:4). According to Fullan (1993:42), many schools in South Africa do not presently fall within the definition of learning organisations. This article describes how schools can become learning organisations. A structured questionnaire was used to gather information from educators, and this information provided the basis for the research.

The problems that this research investigated are:
- what are the essential features that schools need to adopt in order to become effective learning organisations?
- what are the perceptions of educators in respect of these essential features?
- what guidelines could be provided so as to enable schools to cope effectively with the demands of a fast-changing and turbulent external environment?

Aims of the research
In view of the problems outlined above, the aims of this research are to:
- investigate which essential components are necessary for schools to function as learning organisations;
- probe the perceptions of educators to ascertain whether they agree or disagree with the items formulated to represent the school as a learning organisation; and
- provide guidelines that educators could possibly use to transform their schools into environments of effective learning.

Having introduced the research problems and also provided the aims of the research it is necessary to present a theoretical framework in which the school as learning organization can be grounded. The learning disciplines (Senge *et al.*,1996:4) mentioned earlier are used to provide this framework.

Personal mastery
According to Senge *et al.* (1996:194) "the term mastery evolved from the medieval French, *maitre*, which meant someone who was exceptionally proficient and skilled — a master of a craft". *Maitre* as it is used today means the capacity, not only to produce results, but also to master the principles that underpin the way an individual produces those results.

"Mastery is a commitment to be the best in whatever is done" (Secretan, 1997:54). Educators who strive to become "masters of their craft" are often those who would be described as being committed to their work in their respective schools. According to Zecha (1994:6) and Kushman (1992:6), "there are two types of educator commitment, namely organisational commitment and commitment to student learning" which are effective ingredients for transforming schools into learning organisations.

Mental models
Research by Senge *et al.* (1996:235-236) indicates that "mental models are subjective images, deeply ingrained assumptions, generalisations and stories that people carry in their minds about themselves, other people, institutions and events that take place in the world". These mental maps act as a filtering system for our judgements and influence how we take actions based on these judgements. If these mental maps or models are not questioned they could become blockages to change. To succeed in transforming schools into learning organisations it is important that individual educators learn how to unearth their internal pictures (subjective images) of the world and bring these to the surface and critically scrutinise them. This can be done if meaningful conversations are encouraged in the school, where educators expose their own thinking patterns and also listen to other colleagues. These conversations can influence individuals to shift their thinking patterns and see the other side of the story.

Shared vision
"A shared vision is an all-encompassing world view which provides focus for an individual and the team concerning what is to be learnt and what is to be valued" (Bierema & Berdish, 1996:6). This shared vision answers the question: "What will success look like"? This question acts as a motivating force for sustained action to achieve individual and school goals. It is a guiding image of success formed in terms of a contribution to the school. According to Johnson and Johnson (1994:9) "a shared vision creates a basic sense of sink or swim together among the members of the school." A powerful vision binds educators to mutual commitments through collaboration to achieve individual and school goals.

Team learning
The discipline of team learning starts with dialogue, which is the capacity of members of a team to suspend their assumptions and enter into a genuine thinking together (http://www.rtis.com/nat/user/jfullerton/review/learning.htm).

According to Senge *et al.* (1996:352), "team learning is the discipline that has to do with learning about alignment." Alignment means functioning as a whole or in a cohesive group committed to a common purpose. This alignment is achieved through sustained dialogue that may result in knowledge sharing and recognising interdependencies among team members (Murgatroyd & Morgan, 1993:73). The discipline of dialogue involves learning how to recognise the patterns of interaction in teams that undermine learning. The patterns of defensiveness are often deeply ingrained in how a team operates (http://www.rtis.com/nat/user/jfullerton/review/learning.htm).

Therefore, the impact of team learning is the establishment of shared values, vision, mission and core strategies to achieve individual and school goals.

The fifth discipline, systems thinking, incorporates the other four learning disciplines.

Systems thinking
Systems thinking is based on system dynamics; it is highly conceptual and provides ways of understanding practical school issues. It looks at systems in terms of particular types of cycles and it includes explicit system modelling of complex issues (http://www.rtis.com/nat/user/jfullerton/review/learning.htm).

The discipline of systems thinking teaches that in any social phenomenon it is important to look at the whole picture. In systems thinking the school is looked at as a system that is interconnected to different parts of life that intersect and influence each other. These interrelated parts are bound together in such a way that they become coherent to one another (French & Bell, 1995:93). The components of a school include learners, educators, context, student learning processes and any identifiable component that affects learning (http://www.orst.edu/instruct/stp/stconcep.htm).

Therefore, the essence of systems thinking lies in a shift of mind to one that sees:
- interrelationships rather than linear cause-effect chains; and
- processes of change rather than snap shots.

The discipline of systems thinking starts with understanding the concept of feedback: that is how actions can reinforce or counteract (balance) each other (http://www.rtis.com/nat/user/jfullerton/review/learning.htm). In trying to build effective learning environments, educators have to learn to see the deeper patterns and interrelationships of change.

A theoretical basis for the school as a learning organisation has been discussed and it is now necessary to discuss the instrument that was used to make this research operational.

The research instrument
In order to determine the perceptions of educators about the contributions of the five learning disciplines to creating a stable learning environment 88 items representing these cited learning disciplines

were formulated for inclusion in Section B of a structured questionnaire. One thousand (1 000) respondents were asked to state to what extent they agreed or disagreed with the formulated items and to provide their opinions on a six-point scale where:

    1 meant disagree totally;

    2 meant disagree;

    3 meant partially disagree;

    4 meant partially agree;

    5 meant agree; and

    6 meant agree totally.

The questionnaire also obtained biographical information about the respondents via 16 items. The biographical data served as quasi-independent variables for the research. They were 'quasi' in the sense that 1 000 respondents were assigned to a particular condition based upon some inherent characteristic such as age or gender (Heiman, 2001:44).

The structured questionnaires were distributed to a random sample of 50 (20 primary and 30 secondary) schools where educators on different post levels completed them.

The research sample

Questionnaires were distributed to educators in the Vanderbijlpark-North District of the Gauteng province in South Africa. Schools were selected at random from an official address list obtained from the Vanderbijlpark-North District. All educators from 20 primary and 30 secondary schools were sampled on all post levels. The sample could therefore be classified as a stratified random sample of schools in the Vanderbijlpark-North District (Heiman, 2001:115). Principals of the selected schools were approached to obtain their permission and co-operation. The questionnaires were handed to principals by the researchers and personally collected again after completion. Co-operation was good and this enabled a good response rate of questionnaires. Of the 1 000 questionnaires handed out, 734 were useable, rendering a response rate of 73.4%.

Any investigation that has to design its own research instrument runs the risk of weak reliability and validity. The validity and reliability of the research instrument will therefore be discussed.

Validity and reliability

In order to establish content reliability and validity, the questions were designed within the conceptual framework as outlined above. The questions were constructed to represent the five learning disciplines of a learning organisation. These are personal mastery, mental models, shared vision, team learning and systems thinking.

Reliability refers to the extent to which the same results are reached if the research were to be repeated (De Vos, 1998:85). Validity entails the extent to which accurate events are captured (Wolcott, 1995:169). The content reliability and validity of the questionnaire were verified by doing a pilot study, using respondents similar to those in the actual study, to determine matters such as whether the instructions were clear, whether the task could be performed within the given time constraints and whether a workable, sensitive and reliable scoring procedure had been developed (Heiman, 2001:89-90). Thirty educators, not involved in the final study, were used as respondents for the pilot study and the information gleaned from this was used to improve the clarity of the items. Several experts from the Department of Educational Sciences and from the Statistical Consulting Services of the Rand Afrikaans University were also consulted, to improve the content validity of the questionnaire.

In an attempt to verify the construct validity of the five theoretical constructs used in the questionnaire, two successive factor analytic procedures were performed on the 88 items in the questionnaire. The principal objective of factor analysis was to construct a smaller number of variables (factors) that would do as good a job of conveying the information present in the larger number of variables. One was therefore trying to reduce the five theoretical constructs given above to a smaller number, such as one or two, constructs or factors. The Statistical Package for Social Sciences (SPSS) 10,0 programme (Norusis, 2000) was used to identify the number of factors that could facilitate the statistical procedures. This resulted in the 88 items being reduced to two factors.

Clarification of the two factors

The first factor, a collaborative culture, consisted of 74 items with a Cronbach-alpha reliability coefficient of 0.971. The second factor, educator commitment, consisted of 13 items with a Cronbach reliability coefficient of 0.752. Items representative of each of the two factors are presented in Tables 1 and 2. One item was discarded from the second factor, educator commitment, in order to improve its reliability.

Table 1   Items associated with the factor collaborative culture

Item No.	Description	Mean score	Rank order
B71	Team learning can improve the culture of teaching and learning	5.37	1
B25	An educator should think about a lesson that did not go well and think of ways of improving it	5.37	1
B88	High and realistic standards can improve the academic performance of learners	5.36	3
B37	Educators should not volunteer to do unpleasant tasks	3.76	74
	Average	4.94	

Table 2   Items associated with the factor beliefs about educator commitment

Item No.	Description	Mean score	Rank order
B36	A shared vision assists people in learning to spend class time more effectively	5.12	1
B59	Your salary is too little for the work that you do	4.32	2
B40	It is necessary to involve learners from Grade 10 to 12 in making decisions about what they should be taught	3.83	3
B60	Educators should be allowed to leave school early to attend union meetings	2.71	10
	Average	3.24	

The two factors formed the dependent variables in the research as they measured how strongly the respondents agreed or disagreed with the items formulated (Heiman, 2001:45).

As already mentioned, there are many behaviour-influencing variables that one cannot manipulate as true independent variables, such as age, race or personality. Such variables are called quasi-independent variables. Respondents are assigned to a particular condition because they already qualify for that condition based on some inherent characteristic (Heiman, 2001:44). In this research the various quasi-independent variables were gender, post level, age, teaching experience, highest educational qualification, religion, type of school, mother tongue, gender of principal, attendance of educators, attendance of learners, educator union affiliation and marital status. These variables were chosen as educators belonging to these groups probably differ in their perceptions from one another. The variables were then clustered into groups representing two, three, or more independent groups and the respondent's score on these independent

groups were determined. In order to determine whether a relationship existed between the factor mean scores of the various independent groups, hypotheses were set and the data analysed using appropriate statistical tests.

Hypotheses and statistical analysis of the data
Differences between the factor mean scores at the multivariate and univariate level were investigated by comparing the mean scores of the various categories of independent groups as provided for in section A of the questionnaire. Hotelling's T^2 technique was used to distinguish between two independent groups at the multivariate level. This implied that the vectors of two independent groups are compared in respect of the two factors taken together. Should a statistically significant difference be found at this multivariate level, Student's *t* test is used in respect of each of the variables taken separately.

In respect of three or more independent groups, multivariate differences were investigated by means of MANOVA (multivariate analysis of variance) in respect of the two factors taken together. The vector mean scores were compared and if any difference was revealed at this level ANOVA (analysis of variance) was used to investigate which of the two factors is responsible for the statistically significant difference. Groups were analysed pair-wise by means of either the Scheffé or the Dunnett multiple comparison T3 tests. Examples of appropriate hypotheses are provided in Table 3.

Factor mean scores for two and three or more independent groups are given in Table 4. In an attempt to simplify the data, multivariate and univariate probability values have been omitted but significant differences between factor mean scores are indicated at the 0.01 (**) and 0.05 (*) confidence levels.

Findings
The findings were divided into findings from the literature and empirical findings. The contributions from the literature should clarify the first aim of this research, namely, to investigate the essential features of the school as a learning organization. The findings from the literature are briefly examined.

Findings from the literature
The following aspects, gleaned from the literature (Moloi, 1999; Senge, 1990; Senge *et al.*, 1996; Kerka, 1995), represent the key components necessary to transform schools into learning organizations:

- personal mastery,
- mental models,
- a shared vision,
- team learning, and
- systems thinking.

In addition the following aspects can serve to enhance the disciplines and hence they are of value when considering guidelines for changing the school into a learning organisation:

- personal mastery in education is closely related to commitment to teaching as a profession and to student learning;
- questioning mental models and old assumptions leads to new ways of teaching and learning that can be co-created in a collaborative way;
- a shared vision is not something that is imposed but it is compelling enough to invoke the support of others. A shared vision also empowers educators with the capacity to build a collaborative work culture;
- reflection and enquiry foster dialogue amongst educators and as such they are important mechanisms for understanding and managing change. Listening to others enhances team work, allowing educators to shift their mental models and thus improving communication;
- the school should be seen as part of a system that includes the state, the economy, politics, culture, learners, educators, contextual factors, learning processes and learning outcomes; and
- systems thinking integrates the five learning disciplines (Moloi, 1999:274-278).

What should be obvious from the above is that personal beliefs about commitment and creating a collaborative culture are inextricable. They complement each other in a synergistic way. One enhances the other.

Table 3 Hypotheses with respect to the univariate and multivariate analyses

Dimension	Variable	Symbol	Description	Test
Multivariate level	Gender	H_0T	The vector mean scores of male and female educators taken together do not differ significantly from each other	Hotelling T^2
		H_aT	The vector mean scores of male and female educators taken do differ significantly from each other	
Univariate level	Gender	H_0T	The factor mean scores of male and female educators taken together do not differ significantly from each other	Student's *t* test
		H_aT	The factor mean scores of male and female educators taken do differ significantly from each other	
Multivariate level	Marital status	H_0M	The vector mean scores of the three marital groups do not differ significantly from one another	MANOVA
		H_aM	The vector mean scores of three marital groups do differ significantly from one another	
Univariate differences	Marital status	H_0A	The factor mean scores of the three marital groups do not differ significantly from one another	ANOVA
		H_aA	The factor mean scores of three marital groups do differ significantly from one another	
Pair-wise differences	Marital status	H_0S/D	The factor mean scores of the three marital groups compared pair-wise do not differ significantly from one another in respect of the factors considered separately	
		H_aS/D	The factor mean scores of three marital groups compared pair-wise do differ significantly from one another in respect of the factors considered separately	Scheffé or Dunnett T3

Both come from within because to collaborate is a conscious decision by an individual and similarly the individual chooses consciously to have personal beliefs about being committed or not.

Empirical findings

The five learning disciplines are underpinned by two factors:

- *a collaborative culture* consisting of 74 items with a Cronbach-alpha reliability coefficient of 0.971; and
- *personal beliefs about educator commitment* consisting of 13 items with a Cronbach-alpha reliability coefficient of 0.752 (Moloi, 1999:276).

Thirty-nine of the 74 items (52.7%) associated with the factor collaborative culture had a mean score greater than five (Moloi, 1999: 193-196). The mean score of the respondents on all the 74 items was 4.94, which indicated agreement with the items involved (see Table 1). The respondents thus seemed to have a positive perception of a collaborative culture as a factor in a learning organization. The Vanderbijlpark-North District is predominantly a Southern Sotho area (Moloi, 1999:171) and as such would tend to belong to collectivist cultures. People in such cultures are integrated in strong cohesive groups and collaboration is the norm (Hofstede, 1991:260).

Only one item in the factor personal beliefs about educator commitment scored higher than 5 and this represented only 7.7% of the items involved. The mean score of the items was 3.24 (see Table 2) and this indicated that the respondents tend towards partially disagreeing with the items concerned with the factor personal beliefs about educator commitment. It therefore appears that the respondents concerned had a somewhat negative perception of this factor. Having provided a general overview of educator perceptions in respect of the factor personal beliefs about educator commitment, the findings in Table 4 will now be discussed, starting with the factor collaborative culture.

Collaborative culture

The data in Table 4 show that the following independent groups did not differ significantly from one another in respect of their factor mean scores:

- post levels,
- attendance of workshops concerning educational change,
- years as principal,
- educator attendance,
- learner attendance,
- gender of principal,
- marital status,
- educator organization,
- mother tongue, and
- teaching experience.

In respect of these groups the null hypotheses cannot therefore be rejected and the results are not significant. The factor mean scores of these independent groups will therefore not be discussed as the results may have occurred by chance (Heiman, 2001:351). Where significant differences in the factor mean scores were present the null hypotheses can be rejected and these groups will now be discussed individually.

Gender

The data in Table 4 show that male educators have a significantly higher factor mean score than female educators. Male educators thus perceive themselves as being more capable of creating a collaborative culture than female educators do. A possible reason for this is that it is traditional in the African culture that men must take the lead to defend the family and talk to others and men thus perceive themselves as being more collaborative (Moloi, 1999:200).

Religious groups

The results in Table 4 indicate that educators who perceived themselves as belonging to the Christian faith agreed to a greater extent with a collaborative culture than educators belonging to other religious

Table 4 Factor mean scores of the various independent groups in respect of the two factors making up the school as a learning organization

Independent group	Category name	Factor mean scores	
		F1	F2
Gender	Males	**372.87****	40.73
	Females	**361.96****	40.71
Post levels	Educators	370.87	40.91
	Promotion posts	363.19	40.80
Attended workshop on change in education	Yes	363.25	**40.26***
	No	371.41	**42.36***
Years as principal	1 – 10 years	376.71	39.80
	11 – 28 years	384.54	42.19
Religious groups	Christians	**367.08****	**40.44***
	Other	**343.53****	**44.21***
Educator attendance	Excellent	367.24	40.87
	Average to poor	362.33	40.54
Learner attendance	Excellent	369.80	**41.65***
	Average to poor	361.79	**39.83***
Gender of principal	Male	367.81	40.14
	Female	359.71	41.70
Marital status	Unmarried	367.13	**42.84***
	Married	365.59	**39.88***
	Divorced	358.74	41.17
Kind of school	Primary	**359.03****	**41.64***
	Combined	368.25	**38.58***
	Secondary	**378.40****	39.75
Highest educational qualification	Teacher's diploma	**357.75****	40.92
	Post diploma	364.21	40.71
	Bachelor's degree plus	**383.56****	40.61
Educator organizations	SADTU	364.72	41.01
	None	369.38	39.85
	TUATA	370.78	40.94
Mother tongue	Sotho	362.82	**39.91***
	Other	368.33	**46.26***
	Nguni	369.82	41.96
Teacher experience	1 to 7 years	359.34	46.47
	8 to 10 years	368.86	40.87
	11 to 15 years	365.20	40.31
	16 or more years	368.00	41.04

**   Highly significant ($p \leq 0.01$)
*   Significant ($p \geq 0.01$ but ≤ 0.05)
F1 = Collaborative culture
F2 = Personal beliefs about educator commitment

groups. This could be because Christian practices such as Christian worship, church attendance and funerals require a more collaborative approach (Moloi, 1999:207).

Kind of school

From the data in Table 4 a pair-wise comparison of the three kinds of school groups indicated that educators in the secondary school had a significantly higher factor mean score than educators in the primary school. It is possible that educators in the secondary schools work more in teams and across departments. The factor mean scores of all

three of the school groups did, however, indicate that they agreed with the factor collaborative culture.

Highest educational qualification

The data in Table 4 show that educators with a bachelor's degree or higher have a significantly higher factor mean score than educators with a teacher's diploma. A possible explanation for this could be that these educators tend to occupy promotion posts and thus appreciate the value of collaborative effort in goal accomplishment to a greater extent than educators with a teacher's diploma do. Moloi (1999: 220-222) believes that this may be because educators who belong to the group with the highest educational qualifications are perhaps exposed to working with fellow students in study groups more often than the other qualification groups are.

Personal beliefs about educator commitment

The second factor in Table 4, namely personal beliefs about educator commitment, will now be discussed.

The data in Table 4 show that the following independent groups did not differ significantly from one another in respect of their factor mean scores:
*   gender,
*   post levels,
*   years as principal,
*   educator attendance,
*   gender of principal,
*   highest educational qualification,
*   educator organisation, and
*   teaching experience.

In respect of these groups the null hypotheses cannot therefore be rejected and the results were not significant. The factor mean scores of these independent groups will thus not be discussed as the results may have occurred by chance (Heiman, 2001:351).

Where significant differences in the factor mean scores were present the null hypotheses could be rejected and hence the alternative hypotheses accepted. These groups will now be discussed individually.

Attendance of a workshop on educational change

In respect of personal beliefs about educator commitment, the data in Table 4 show that those educators who had not attended workshops had a significantly higher factor mean score than those who had attended such workshops. This may be because educators not attending workshops on educational change have not had the opportunity of being influenced by the training provided at such workshops and it is possible that their personal beliefs about educator commitment have not come under personal scrutiny. Educators who have attended workshops on change management have possibly questioned their mental models regarding personal beliefs about educator commitment (Moloi, 1999:204-205). This finding indicated that workshops could play an important role in the management of change.

Religious groups

The data in Table 4 indicated that educator's belonging to other religious groups perceived themselves to be more committed to personal beliefs about educator commitment than Christians. Both groups partially disagreed with the items that are represented by this factor and it appears that they feel that these personal beliefs, as represented by these items, do not enhance educator commitment.

Learner attendance

Educators who perceive learner attendance at their schools to be excellent had a significantly higher factor mean score than educators that perceive learner attendance to be average to poor. Personal beliefs about educator commitment thus seem to be influenced by the perception of learner attendance and it is possible that excellent learner attendance will promote personal beliefs about educator commitment and vice versa (Moloi, 1999:211-213).

Marital status

The data in Table 4 indicated that unmarried educators had a significantly higher factor mean score than the other two groups had. Moloi (1999:215-217) believes that a possible explanation could be that unmarried educators do not have such strong family ties and hence their loyalty and commitment to the school is undivided and they can spend a greater amount of their time at their school.

Kind of school

In respect of educator commitment the data in Table 4 show that primary school educators had a significantly higher factor mean score than educators in combined schools. A possible reason for this finding could be that educators in the primary school deal with younger learners (Moloi, 1999:219-220). All three groups, however, partially disagree with the factor personal beliefs about educator commitment.

Mother tongue

As regards personal beliefs about educator commitment, educators whose mother tongue falls under "other" had a significantly higher factor mean score than educators whose mother tongue is Sotho. These educators, whose mother tongue is Afrikaans or English, thus perceived themselves to agree to a larger extent with the factor than educators whose mother tongue is Sotho. The factor mean score of 46.26, that translates to 3.6 on the six-point scale, was the highest factor mean score of all the independent groups. Even so, this score only indicated partial agreement with the factor personal beliefs about educator commitment.

The empirical findings on the perceptions of educators in respect of the factors collaborative culture and personal beliefs about educator commitment were examined. These factors underlie the school as a learning organisation and thus serve as an indication of the realization of the second aim of this research, namely, an investigation into the perceptions of educators about the school as a learning organisation.

Recommendations of this research

In order to transform schools into environments of effective learning it is necessary to concentrate on the creation of a collaborative culture and on enhancing educators' commitment to their work. Principals can do this by creating a culture that values and caters for individual and group needs, which will advance the teaching and learning practices in the school. Personal beliefs that foster collaborative cultures and the strengthening of subject knowledge need to be fostered to create successful schools. Research by Telford (1996:22) indicates that collaborative school cultures can be developed by:
*   strengthening school culture;
*   using a variety of bureaucratic mechanisms to stimulate and reinforce cultural change;
*   fostering staff development;
*   engaging in direct and frequent communication about cultural norms, values and beliefs;
*   sharing power and responsibility with others; and
*   using symbols to express cultural values.

A collaborative culture and personal beliefs about educator commitment should direct the vision, values and purpose for the school's existence. The principal as the leading learner should create a more collaborative culture by using increased opportunities for collaboration across curricular matters, with a view to improving learner performance. Educators should attempt to work in groups more often in order to learn to co-operate with their colleagues on various aspects of their work. The principal should also attend to the learning core in the school by giving attention to the changes that affect instructional practices and the culture of teaching and learning. Educators should also be encouraged to improve their educational qualifications, as higher qualifications appear to stimulate collaboration.

In order to enhance personal beliefs about educator commitment, educators should be encouraged to make a difference in the lives of learners by deepening their subject knowledge to meet the needs of

divergent learners. Furthermore, educators should be encouraged and supported to work in new structures with learners and parents. Personal beliefs about educator commitment are difficult to influence. The reason for this is that commitment comes from within the individual person and principals need to encourage aspects such as acceptance of greater responsibility, self-discipline and perseverance to enhance commitment.

The third aim of this research article, namely to provide management guidelines to principals in order to facilitate the transformation of the school into a learning organisation, was also considered.

Conclusion

It is possible to change the school into a learning organisation if the five learning disciplines of personal mastery, mental models, a shared vision, team learning and systems thinking are positively used. The five learning disciplines can be incorporated into two factors: namely a collaborative culture and personal beliefs about educator commitment. Respondents agreed that using the items representing a collaborative culture should make it possible to turn schools into learning organisations. These items could form the basis for developing a programme to train educators and improve their skills in order to enhance student outcomes. In respect of personal beliefs about educator commitment, the respondents partially disagreed with the items. The items could therefore also be taken up in a training programme to train educators to reflect on their old mental models, as it is imperative to question old assumptions in order to adopt new ways of thinking and learning. These new assumptions should be co-created in a collaborative way.

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