INTRODUCTION

The characteristics of management problems can be classified under three groups, namely: organic, cultural and power characteristics. These characteristics determine the level of complexity of management problems. For instance, a management problem which displays all three characteristics is more complex than one which exhibits only one or two of these characteristics. Hence, these three characteristics represent what we call the types of complexity inherent in management problems. Organic complexity is akin to what Senge (1990) calls dynamic and detailed complexity. According to Senge, whilst detailed complexity is determined by the number of variables or parts in the system, dynamic complexity is a function of interaction and feedback between the parts within the system and between the system and the larger environment. A list of characteristics of complex systems proposed by Cilliers (1995) exemplifies the organic characteristics, and hence organic complexity of such systems. Cilliers' list of characteristics of complex systems includes the following:

- Complex systems consist of a large number of elements
- These elements interact in a dynamic way. As a result, complex systems change over time.

The interaction is fairly rich in the sense that any element in the system influences, and is influenced by, quite a few other ones.

Apart from being dynamic and rich, the interaction is non-linear in nature.

The interactions normally have a fairly short range; i.e., elements receive information from their immediate neighbours.

There are feedback loops in the interactions.

The effects of any action taken by a certain element can feedback onto itself.

Complex systems are normally open to the environment.

Complex systems operate under conditions far from equilibrium. Complex systems have a history. Each element in the system is ignorant of the behaviour of the system as a whole; it responds only to information that is available to its locality.

Cilliers' list does not take into account the fact that complex systems are not composed of things alone but of both things and people. It was Flood and Jackson (1993) who proposed a list that takes into account the characteristics of things and people. At the level of things, complexity refers to the number of parts and relations between the parts making up the
system, i.e. organic complexity. At the level of people, complexity is attributed to the interests, capabilities and perceptions of the people who have stakes in the system. Hence, Flood and Jackson (1993) add two more characteristics to Cilliers' list; i.e., in complex systems, the subsystems are purposeful and generate their own goals, and complex systems are subject to behavioural influences. The two characteristics exemplify the cultural complexity of systems and management problems in particular.

The fact that organizations are subject to behavioural influences brings in the power dimension of complex systems (Jackson, 1994; Bierema, 2003). Jackson (1994) states that participants in social situations such as organizations can sometimes be seen as in a coercive relationship to one another, so that the only consensus that can be achieved is through the exercise of power and domination by one or more groups of participants over others. In the organizational context, power can be due to one’s position in the organizational structure or one’s capability in terms of appropriation of resources or knowledge. The term ‘power’ also refers to the power of certain theories or practice to dominate over other types of beliefs or knowledge.

The exercise of power and domination is by one or more groups of participants over others. In the organizational context, power can be due to one's position in the organizational structure or one's capability in terms of appropriation of resources or knowledge. The term ‘power’ also refers to the power of certain theories or practice to dominate over other types of beliefs or knowledge.

The systemic methods identified by Flood and Jackson (1993) and action learning programmes (Bierema, 2003; Lizzio & Wilson, 2004) are meant to help organizations deal with complexity inherent in management problems. In this paper the essential features of a systemic method and that of action learning programme are compared. Based on this comparison, recommendations for designing effective action learning programmes are given.

ESSENTIAL FEATURES OF A SYSTEMIC METHOD

Based on the above discussion, organic, cultural and power complexity is inherent in management problems. Vester (1988) states that in order to deal with complexity one needs to use the jujitsu metaphor, i.e. fighting the other's complexity with his complexity. This metaphor implies that in order for a systemic method to deal with the organic, cultural and power complexity of management problems, it must itself exhibit the three kinds of complexity. In the last three decades or so these three characteristics of management problems have prompted the emergence of a variety of so-called systemic methods. Most of these methods deal only with one or two of the characteristics of these problems. This has been caused by writers holding different views on what should be the features of a systemic method. For instance, according to Espejo (1994), a systemic method is that which will helps:

- understand how the parts relate to each other and constitute larger wholes;
- understand interactive processes constituting wholes at multiple levels;
- understand how the system works;
- understand the likely effects in the whole of local behaviours and vice versa;
- understand language and emotions;
- ground purpose through shared distinctions and transforming these distinctions into interactive patterns enhancing people's actions, making their action more effective.

As far as Espejo is concerned, the function of a systemic method is to facilitate organizations in dealing with organic and cultural complexity inherent in management problems.

Flood and Jackson (1993) noted that the majority of methods that claim to be systemic address only certain kinds of problem contexts. Their problem contexts may be likened to our organic, cultural and power complexity taxonomy. Inspired by the work of Habermas of 1972 on the theory of knowledge constitutive
interests, the authors proposed the Total System Intervention (TSI) as an alternative way for dealing with complexity of management problems. On the theory of knowledge constitutive interests, Flood (1994) writes that human beings in pursuit of knowledge of complex phenomena are driven by three fundamental interrelated interests, namely: an interest in managing interacting processes using methods of prediction and control, an interest in the interrelations between human interpretations of actions and activities, and an interest in power associated with rule-governed systems that affect people's actions and interpretations, i.e. technical, practical and emancipatory interest respectively. Flood (1994) holds that the interests are interrelated because the existence of power and coercion may prevent free and fair interpretations of phenomena, which in turn might threaten the effective management of interacting processes using the methods of prediction and control. This implies that a systemic method is that which helps organizations address all three kinds of interest. But, as Midgley (1997) pointed out, even the TSI has not fully achieved this objective. This is because the notion of liberating knowledge which is underscored by the emancipative interest is not translated into the TSI methodology.

There is a resemblance between Habermas' list of knowledge constitutive interests and our classification of the characteristics of management problems. For instance, whilst the need to fulfil our technical interest is akin to the need to deal with organic complexity, the need to fulfil our practical interest is synonymous with the need to deal with the cultural complexity of management problems. The need to fulfil our emancipatory interest parallels the need to deal with the power complexity of management problems. We conclude that a systemic method must possess the following features:

- It must enable organizations to deal with organic complexity of management problems. This can be achieved through the promotion of interaction between relevant stakeholders in tackling such problems. Dealing with organic complexity can also be achieved through the identification of any misperceptions of feedback that may occur as a consequence of the implementation of decisions aimed at tackling management problems.
- A systemic method must also help organizations address the cultural complexity inherent in management problems. This can be achieved through the promotion of participation of all relevant stakeholders in the creation of a shared understanding regarding the nature of the problem. The method must also assist stakeholders in exploring different views, interests and values regarding the problem and its underlying solution.
- A systemic method must also assist organizations in dealing with the power complexity inherent in management problems. This can be achieved by freeing all stakeholders from forces that can prevent them from dealing effectively with the organic and cultural complexity of problems. Burrell and Morgan (1979) write that power and domination are rested not only with materially located means of coercion and oppression, but also within people's consciousness, through ideological hegemony. Hence, coercion can exist between people particularly when the means of such coercion are material, such as resources, information or expertise. In the organizational context, the ownership of resources is determined by one's position in the organization's structure. Drawing from the work of Flood and Jackson (1993), the method must also assist stakeholders in reflecting upon the strengths and weaknesses of dominant beliefs held by them, i.e. must free people from ideological hegemony through the creation of ideological awareness.

WHAT IS ACTION LEARNING?

Action learning is increasingly becoming important (Revans, 1982). There are many
definitions of action learning. For instance, Weinstein (1995) provides a list of various definitions as given by different writers. For our purpose we shall define action learning as a personal development programme where a group of people learn by working on real problems interactively and autonomously by questioning and reflecting in order to gain insight and understanding and considering how to behave/act in future (Weinstein, 1995).

THE ELEMENTS OF ACTION LEARNING

Weinstein (1995) identifies five components of action learning programmes. The components include the following.

The Set
The set is a small group of people, normally five to eight, who meet regularly, ideally once a month for a day.

Real Projects
These are for each person to work on. Boddy (1981) writes that on the issue of how to generate and select projects it is worth considering a range of project selection styles. He identifies three selection styles, including:
- Ask senior management to suggest projects;
- Generate information from participants about problem areas, formulated into projects by trainers / senior management;
- Participants generate their own projects.

Boddy argues that in order to ensure the feasibility of action and the degree of commitment to them by the clients, the emphasis has now switched to using problems which more closely affect the participants and which have been suggested by them. Boddy proceeds to propose a check list of questions for project selection. The questions include the following:
- Will it involve the participant in bringing about significant change?
- Bearing in mind the time and skills available, is the project feasible?
- Are the risks of failure (e.g. in money, or reputation) sufficiently high to stimulate, without being too threatening?
- Is the problem sufficiently ambiguous to require imaginative and creative solutions?
- Will the project expose the participant to different perspectives and ways of thinking?
- How highly committed is the client to the success of the project?
- Is implementation within the authority of the management of the plant?
- Criteria for selection may include, for instance;
  - relevance of the project to the survival and growth of the organization;
  - commitment of the client to the project;
  - feasibility of implementation in terms of time and skills and authority;
  - complexity of the problem requiring creative solutions.

The Process
Weinstein (1995) identifies four main steps in the action learning process. The steps form a spiral of learning similar to the wheel of learning proposed by Handy (1993). The action learning steps include the following:
- **Airspace.** This is the time when a presenter reports to the set members on what he/she has done about his/her project since the last set meeting. What is presented here is a proposed theory (Handy, 1993) or rather a solution to a project problem.
- **Listening actively.** Set members listen actively so as to follow what the presenter says. By listening actively, the set members can construct scenarios; identify gaps or inconsistencies in the presentation.
- **Questioning.** Weinstein (1995) writes that questions are meant to clarify points, to check out any avenue of thought which they think can help the presenter, and to follow up something the presenter has said. Only questions that are meant to help the presenter think are to be asked. Debate should be avoided and dialogue
encouraged. Avoid closed questions that begin with 'why'. The best questions are those which begin with what, how, when and where. Questions such as what do you think caused X? What would happen if ... or how are you going to do it? etc. can help create dialogue and not debate. The question step is akin to the testing stage in Handy's wheel of learning.

- **Reflecting.** This is the process of recalling events, feelings, actions and thoughts that have taken place. It entails mirroring back what has been said by both the presenter and other set members. Weinstein maintains that there are no judgements, advice or solutions to be given in the action learning process.

**The Set Advisor**
The set advisor is a person who facilitates the process. Casey (1987) identifies five roles of the process advisor. They include:
- to facilitate giving;
- to facilitate receiving;
- to clarify the action learning process and
- to help others undertake the above tasks;
- to act from time to time as personal consultant
- To set members in the group setting.

**Time**
Weinstein (1995) writes that action learning programmes take duration of between three and six months.

**ACTION LEARNING AND THE EQUATION OF LEARNING**

Pedler (1983) writes that learning is a combination of selected past knowledge reorganized on the basis of a few discriminating questions, i.e. learning = some Ps + a few Qs. P stands for programmed knowledge - that which we already know, contained in books, libraries, polytechnics - the answers that we have gleaned from solving yesterday's problems. Q is the discriminating question - put in conditions of chaos and uncertainty and in the absence of a definite answer. Such a question may lead us to a course of action rather than an answer. Universities, schools and so on set out to teach P whilst action learning attempts to produce, capture or discover Q. On the other hand, Garratt writes:

We know from the study of ecology that the essential formula for the continuing survival of an organism is that its rate of learning must be equal to, or greater than, the rate of change in its environment. In organisations this argues for the development and maintenance of a system of organisational learning to monitor environmental change and take appropriate avoiding actions (Garratt, 1983, p.26).

Hence, according to Garratt, the rate of learning must be greater or equal to the rate of change in the environment. We can therefore conclude that the implementation of action learning programmes is based on the following assumptions:

- Learning is the only method that will enable organizations to cope with the ever-changing environment. If organizations are to survive and grow, then they must learn.
- The only resource capable of learning in the organization is the people that comprise it. Action learning focuses on people. This view is also shared by Garratt, who writes:
  
  The essence, as I saw it, was that the only resource capable of learning in the organization are people that comprise it ... So, the keys to organisational survival and growth must be within the hands of all those who are members of the organisation (Garratt, 1987, p.42).

- Learning is effective if it involves a group of people who learn autonomously by working on real projects.
- Learning is a basic need of human kind. It is therefore a basic need of the organization. This view is also shared by Ackoff, who states:
  
  Recall that learning is the process of development. There is no better way to learn how to satisfy one's own needs and legitimate desires and those of others in
making decisions and evaluating their consequences... therefore, when we say that it is a responsibility of an enterprise to develop its members, this implies providing them with an opportunity to participate in decisions that can affect their competence, and that enable them to develop. (Ackoff, 1994, pp. 56-57)

- Employee empowerment can be achieved through action learning. This is achieved through employee involvement and participation in tackling organizational problems.

**ACTION LEARNING PROGRAMMES: A CASE STUDY**

The following case study is used to demonstrate the impact on intervention effectiveness of action learning programmes which are partially systemic.

One of the authors conducted an action learning programme in two foundry divisions of a large corporation in the Republic of South Africa. The divisions which are herewith referred to as divisions ABC and XYZ—cast a wide range of models of motor vehicle components. The ABC division specializes in casting aluminium based cylinder heads and manifolds for a wide range of vehicles. The parts are sold to assemblers of vehicles in South Africa and abroad. The XYZ division on the other hand is engaged in casting cast iron-based motor vehicle components. These components include cylinder heads, cylinder blocks and exhaust manifolds, again for a wide range of vehicles. The two divisions compete with other organizations which also have the capability to produce similar products.

**The Programme**

The programme, which took a period of six months involved foundry line managers. There were 16 line managers in total - eight from each division. Line managers from foundry workshops, engineering, purchasing, maintenance and quality control were involved. Each set member was allocated a client and one of the authors acted as a set advisor in most of the set meetings. Two one-day set meetings were conducted each month. The set members adopted the conventional action learning process and a variety of decision-making tools and techniques to accomplish their projects.

Although the programme was initiated by the headquarters, the projects were selected by the set members themselves. The criteria for selection included:

- Relevance of a project to the division's survival and growth;
- Ability of the project to promote learning.

The following projects were selected by the set members from each division:

- design and implementation of a Just in Time programme;
- design and implementation of a Total Quality Management (TQM) programme;
- design and implementation of a motivation programme;
- design and implementation of a Total Productive Maintenance (TPM) programme;
- improving work safety;
- redesigning of the manufacturing process;
- improving the effectiveness of purchasing processes;
- Reduction of set-up times.

Each set member was allocated one project.

**Results and Discussion**

Most of the senior managers acted as clients to the projects, and showed commitment to the action learning in the beginning, but as time went on their level of commitment started to decline. For instance, some line managers complained that it was difficult for them to attend every set meeting because their senior managers or rather clients assigned them other tasks which were not related to their projects. It was also reported that some projects threatened the positions of some senior managers. For instance, the recommendations emanating from set advisors. Action learning programmes also do not provide a mechanism to emancipate the set members from power which is based on
some individuals owning resources, information, expertise, or from power that originates from one's position in the organization structure. The existence of any kind of power can hinder set members from effectively dealing with the organic and cultural complexity of their projects. Since action learning programmes do not promote emancipation, they therefore do not facilitate the exploration of historical conditions that led to the existence of power.

The results of this case study have underscored the importance and need of using the features of a systemic method in order to surface implementation bottlenecks of an Action Learning programme.

The results have indicated the following characteristics of systematic action learning programmes:

**Action Learning and Organic Complexity:**
Action learning programmes promote interaction between set members and the set advisor. The set essentially provides a structure for the interaction process. During the action learning process, each presenter gets feedback from other set members as well as from the set advisor. The set members also interact with the wider environment when they conduct their projects.

**Action Learning and Cultural Complexity**
Weinstein (1995) writes that the action learning process is characterized by dialogue and not discussion. She states that in dialogue all participants win whilst in discussion there is expected to be winners and losers. The features of cultural complexity in the action learning process are revealed by Weinstein when she writes:

A dialogue emphasizes the idea of a meaning that flows between people from which emerges a greater understanding – possibly even a shared meaning. (Weinstein, 1995, p. 47)

**Action Learning and Power Complexity**
Critical reflection is also undertaken particularly during the questioning step of the action learning process. Here, the members identify the strengths and weaknesses of the views, ideas, theories or hypotheses related to the projects presented by each member. The members also examine any assumptions and values that enter into those theories. Moreover, they examine the adequacy of any management practices that are related to their projects.

The results have indicated the following characteristics of non-systematic action learning programmes:

**Action Learning and Organic Complexity**
Action learning programmes provide no guarantee of preventing any misperceptions of feedback that may occur as a consequence of implementing the various projects that are undertaken. Furthermore, the criteria used to select action learning projects (for instance see Boddy, 1981) do not take into cognizance the influence of the environment to the organization.

**Action Learning and Power Complexity**
The main weakness of action learning programmes is that they are not capable of helping set members deal with the power complexity inherent in their projects. Action learning programmes do not facilitate the emancipation of the stakeholders from any ideological domination from their clients, set members or even from their projects related to TQM, TPM and purchasing indicated that there was a need for reorganizing some of the activities undertaken by these departments threatening some of the positions held by the senior managers.

This created conflict and tension between the line managers and their superiors and prompted the latter not to take seriously the recommendations given by the former as a result of
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undertaking their projects. Some of the line managers started dropping out of the programme and in the end only 12 line managers completed their projects. Although those who completed submitted recommendations to their seniors of implementation, the recommendations were not taken seriously. This shows that there was a divergence of values and views between the set members and their seniors. Since the latter possessed power in terms of resources - in this case the authority to make decisions on how line managers should spend their time - this influenced negatively the success of the programme.

Regarding organic complexity if was fortunate that the set members identified projects which were relevant to the survival and growth of divisions. Moreover, set members with the help of a set advisor used qualitative systems dynamics (Senge, 1990) to uncover any misperceptions of feedback that would have occurred if all the recommendations were implemented. For instance, the set members realized that redesigning the manufacturing process was likely to affect negatively the morale of the employees, which in turn would have negative consequences on other programmes such as TQM and the employee motivation programme. The redesigning of the manufacturing process programme was therefore dropped.

The experience gained from this action learning programme prompted one of the authors to redesign these programmes in line with the tenets of the essential features of a systemic method.

CONCLUSION

The main contribution of this paper to the body of management knowledge has been to underscore the essential features of a systemic method as an approach to enhance the effectiveness of action learning programmes. A method is said to be systemic if it can help organizations deal with organic, cultural and power complexity (Cavaleri, 2005). The authors have argued that action learning programmes do not possess all the essential features of a systemic method and, as a consequence, such programmes are likely to face implementation problems. Whilst action learning programmes help organizations deal with cultural complexity of management problems, these programmes do not assist organizations to fully deal with the organic and power complexity of management problems. Hence the authors conclude that, in order to render action learning programmes effective in helping organizations cope with change, the programme must be designed and implemented in line with the tenets of the essential features of a systemic method.

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