Nursing has been greatly influenced by developments within the health services in general. Factors effecting these changes include increased scientific knowledge, increased demand for quality health care, and the concept of the hospital being a social institution that provides services to all community members. Because hospitals are becoming increasingly complex, and because nursing is a key department in any facility that aims to meet the health care needs of the population, it is essential that nursing administrative staff be competent managers.

Previously, nursing managers focused almost exclusively on the nursing care provided to patients. They were appointed to administrative positions because they had demonstrated a high level of clinical knowledge and skills. While these abilities are important in ensuring the provision of quality nursing care and the credibility and acceptance of the nursing manager by nursing and other hospital personnel, it is evident that the requirements of nurse managers today extend far beyond these boundaries. As the nurse moves into higher levels of management, the actual exercise of clinical skills decreases while the demands for knowledge, attitudes and skills related to management principles greatly increase. Nurse administrators are responsible for the management of the nursing care of patients, the management of personnel and operational management.

The author believes that the historical trend in nursing administration has been to focus on managing only some aspects of patient care while rarely identifying and fulfilling the roles related to personnel and operational management. This fact is evident in the dearth of South African literature on nursing management and the limited programmes available for the training of nurse administrators, which until the last decade have been exclusively one year diploma courses. The commencement of graduate and post-graduate programmes has been a most necessary development but recognition of the need for specialisation has still to gain acceptance both within and outside the profession.

Returning to the three areas of management mentioned, it is believed that the area of crucial significance is the management of personnel, for the quality of patient care is directly dependent upon those giving care. Similarly, staff are vital to the successful outcome of operational management. Because the writer is convinced of the fundamental importance of personnel administration to the hospital service, and particularly to nursing administration, a study into nursing personnel administration within a hospital was undertaken. Areas which were selected for particular study received attention according to their urgency or their significance in the effective utilisation of personnel resources and others. In this article an overview of staff development and education, as an important aspect of nursing personnel administration, is presented.

**WHAT IS STAFF DEVELOPMENT?**

Staff development is a broad concept which encompasses the identification of the educational needs of individuals, departments and the organisation and links these needs to available resources both within and outside the institution. As such it includes orientation, in-service education, continuing education and management/leadership development. The final outcome of staff development should therefore be organisation development.

For nurses, staff development is a function of nursing administration. The quality of the nursing service, and the ability of the nursing personnel to provide an effective ser-
vice are, in large measure, determined by the extent to which administration exercises this function both directly and indirectly. A great deal of the success in staff development for any group depends upon the establishment of a climate conducive to education. The chief nursing administrator sets the stage by giving positive support to the staff development programme and those of her programme of nursing service coincide; by her recognition of the educational function as an indispensable component of administration and, by her personal commitment to the continuing improvement of her personnel.

To be effective, therefore, a programme of staff development must support the goals and priorities of the respective organisation and departments. Prior to formulating specific development and education proposals, cognisance must be taken of the current economic, political and medical science trends.

Although staff development is an integral part of administration, it requires centralised planning, coordination and evaluation and is thus ideally placed within the personnel department, under the direction of the Chief Matron personnel. Such a co-ordinated staff development approach requires the mutual co-operation of the staff of both nursing service and the staff development department. In spite of the fact that the responsibility of staff development is centrally based, it is envisaged that unit and ward teaching programmes should, in general, be decentralised with the staff development educator acting in an advisory capacity.

The centralisation of staff development and education does not mean that nurse administrators can abdicate and delegate their responsibility for coaching, counselling, teaching and staff development to the personnel department, for this is an integral part of their administrative function.

Staff development must be an identifiable component within the organisational structure, available in all departments and to all personnel and, therefore, be accorded value and administrative support along with other components in the hospital. As such it should be allocated a budget appropriate to the identified programme objectives, thus ensuring the necessary human and physical resources to achieve these objectives. Because of the diverse nature of staff development and its potential as a powerful administrative tool, it is necessary that the senior personnel are qualified at graduate level and are knowledgeable in the areas of clinical nursing practice, the behavioural sciences (particularly organisational behaviour), adult education and administration. It is somewhat idealistic to envisage all these attributes being vested in one individual and for this reason too it is recommended that staff development and education be cited within the personnel department. Although discussion will be confined to nursing development and education, it in no way implies that the staff development and education department will be unidisciplinary for it must appropriately serve the needs of the entire hospital staff.

In approaching this topic, an attempt has been made to emphasise those aspects which have to date been given a greater or lesser extent neglected in the nursing literature in South Africa and in nursing practice, specifically within hospitals; and which are believed to be essential to effective practise both in the present and in the future. The discussion will, therefore, not be comprehensive nor will it include the varied methodologies which are available, but will instead focus on principles which are considered to be fundamentally important to staff development and, therefore, to education as well. For ease of discussion, staff development and education will be considered in three sections:

- orientation
- leadership development
- organisation development

**ORIENTATION**

What is it about the ways in which employees are recruited into and developed within hospital settings that make some new recruits feel competent and others helpless . . . some passive and others creative contributors to organisational success?

These questions are basic to the study of organisational socialisation, of which orientation is the introductory phase. Very few answers exist and research into the ways in which nurses (trainees and professionals) are socialised into hospitals is certainly needed.

At the outset, therefore, it is important to place orientation in its context as part of a process which must be on-going in the form of continuing education, which includes organisational socialisation. The duration of the socialisation process is variable and amongst nurse trainees it can last up to four years.

Shanks and Kennedy define orientation as: the introduction of the employee to his job and its requirements, to his fellow workers, and to the institution as a whole. It is the phase designed to stimulate the employee to identify himself with the organisation and its goals. If this definition is regarded as acceptable, then it comes as no surprise that Clarke quotes this prolonged period (viz. 4 years) before nurses enter the stage of settled connection.

Orientation starts prior to the commencement of work and is completed once the objectives of the specific orientation programme are achieved, which may or may not coincide with the end of the programme. Completion of orientation does certainly not imply socialisation.

Feldman proposed that there are three distinct and successive stages of the socialisation process, each of which has its own set of activities. The first stage, anticipatory socialisation, encompasses all the learning which occurs before the recruit enters the organisation. This stage is a most important part of orientation and includes those activities in which the nurse is engaged in forming expectations about her new position. It includes such aspects as:
- interviews;
- brochures and information sheets giving adequate details of the organisation in general and the specific job in particular;
- information booklets/brochures, etc. for living-in and up-country staff covering aspects of everyday life (such as transport, post-
age, banking, library, cultural and recreational facilities) as well as facilities provided within the residence and hospital.

The problem is seldom one of a surfeit of information; rather the reverse. The benefit of sufficient and appropriate information should not be underestimated for it does much to allay fear and minimise insecurity. In addition, it gives to the potential employee a basis for establishing an accurate picture of the organisation and, for student and pupil nurse, the educational programme as well. It enables the professional nurse to gauge the degree to which the organisation's resources and her needs and skills are mutually satisfying, that is, the level of congruence.

The greater the level of realism and congruence the more likely it is that the individual will successfully progress through the two stages which follow.

The second stage is accommodation, and is that period in which the individual sees what the organisation is actually like and attempts to become a participating member of it.

This involves learning new tasks, establishing new inter-personal collegial relationships, clarifying their roles and evaluating their progress within the hospital.

The objectives for this period can, therefore, be classified into two major categories: organisational and personal.

Where a staff development and education department exists, it is envisaged that a centralised orientation programme would be conducted prior to a unit/departmental programme. These two phases need to be carefully planned, implemented and evaluated according to pre-determined objectives which are specific to the particular individual or group. Feedback must be two-way if maximum value is to be achieved, both for the individual and for the organisation. This aspect is often absent in nursing orientation programmes.

Although many hospitals consider a fixed number of days or weeks as the orientation period, staff development personnel and nurse administrators in general need constantly to be attuned to the individual nurse. No two people adapt at the same rate, nor does one person make multiple and diverse changes in behaviour patterns concurrently. Thus, while a nurse may have apparently adapted professionally she may well be lagging far behind in emotional or social adjustments. It is the difficult task of the nurse administrator to discern the individual nurse's threshold for change and accordingly to select one or two behaviours for alteration at any one time.

Such sensitivity is not born overnight and chief nurse administrators need to set the example, and also ensure that their administrators at all levels are trained and nurtured, in order to develop such assessment skills.

An approach such as this, with regular informal communication, does much to speed up the adaptation process, minimise strain and improve the standard of work and job satisfaction obtained.

The third stage of socialisation, role management, is not conventionally part of orientation. In this stage the recruit has already come to some resolution of the problems in her own work group and now needs to mediate the conflicts between her group and other groups where these conflicts place demands on her. Many nurses never reach this stage and, therefore, cannot become leaders.

If nursing administration wants to maximise the outcomes for individuals and for the hospital, then their efforts which commence with recruitment and selection, must continue not only through training and development of individuals, but also through helping nurses deal with work and home-related conflicts. The current trend of establishing posts for nurse counsellors is an encouraging sign in this regard.

Thus, although orientation as it is currently practised only forms a part of the socialisation process, it is important that nurse administrators continue to expand its level of effectiveness, while at the same time planning, implementing and evaluating methods for realising the completion of the socialisation process amongst all its members.

This is made possible by continuing education for all levels and categories of nursing staff. Continuing education must, however, not be confined to facilitating socialisation but must be viewed within the perspective of staff and career development, manpower planning and quality of patient care and therefore become an integral part of the life of the hospital and indeed of the health care services in general.

The development and education personnel are considered invaluable in facilitating such a process.

**Staff development for leadership**

The scope for and need of leadership in nursing is broad. Leininger said: *There is a critical shortage of capable, well-prepared nursing leaders and administrators. To deal with the complex and diversified problems of education and service, the nursing profession needs politically and economically astute leaders who are good risk takers, fairly aggressive, and adept in using a variety of management and interpersonal strategies*.

The future of the nursing profession is indeed dependent upon good leadership.

At the outset it is important to state that leadership as a mode of social influence is not the same as authority, which is an attribute of a social position. Those who have authority by virtue of the positions they hold, may or may not also exert leadership. Leadership can be found at every level of an organisation and involves an interpersonal relationship in which others comply because they want to do so and not because they have to do so. Authority, on the other hand, involves the legitimised rights of a position which requires others to obey.

The nurse in a leadership position requires opportunities for leadership development. All too often, nurses are promoted into the ranks of management as a reward and as a recognition of the nurse's technical skills. These nurses may be highly skilled and professionally competent, but they may be unprepared theoretically and practically for management responsibilities. The pattern of promotion therefore frequently involves the best sister be-
coming a senior sister, senior matron, principal matron and finally a chief matron. Throughout there appears to be a lack of acknowledgement that each of these steps requires different leadership skills, which, if they are to be learnt necessitates concerted and directed efforts on the part of the individual, her superiors (including the staff development department) and indirectly, her subordinates as well.

Leadership involves the ability to use different styles to meet changing situations; it is dynamic and thus does not, indeed cannot, result merely from the individual traits of leaders; it must also involve attributes of the transactions between those who lead and those who follow. In other words, the leader is only one component in that complex phenomenon we call leadership.\(^{15}\)

Inherent in the concept of leadership is the premise that role making is a dynamic and imaginative endeavour. In making this statement it is assumed that flexibility exists in roles, and that this very flexibility may be utilised creatively and constructively by nurse leaders, particularly senior administrators. It is not an uncommon myth that many roles in nursing are fixed, and that such role fixing results in a reduction in uncertainty and insecurity. On the contrary, it is suggested that perception of a role as being fixed actually will augment the uncertainty that the administrator will experience in certain situations; especially if personnel in counter-positions actively engage in the role making process. Furthermore, if the role is assumed to be fixed, the role behaviours used are often likely to be inappropriate, thus reducing the value of their outcome.\(^{16}\)

The belief in a role being fixed is, in essence, a denial of the value of an individual’s unique contribution. The existence of this situation in hospitals is evidenced in the excess multiplication of rules which accumulate to the point of paralysing innovation and the slow progress towards staff participation in administration.

Basic to the concept of a flexible role for the nurse administrator is the assumption of a process of personal and professional change and this has relevance to training and development.

The King’s Fund working party, in their report on the education and training of senior managers in the NHS, state that . . .

\[ \ldots \text{any training curriculum should be designed around management activities, skills and problem areas and not around the availability of particular teaching inputs — especially when these are undisciplinary.} \ldots \text{The academic inputs must be reassembled around managerial activities and problems.} \]

The training and development department within a large hospital is ideally placed to design learning experiences to suit individuals and their particular situations. The aim is not only to impart knowledge about organisational matters, important as this may be, but rather to enable individuals to gain knowledge and understanding of their own ability to take effective action within their environment. If appraisal is used as a basis for confidential counselling, then the training needs of respective individuals can readily be assessed, and the appropriate development opportunities can be made available. The methods used may, however, be varied in accordance with the facilities available — both within and outside the organisation.

It is beyond the scope of this discussion to deal with details of methodology and, therefore, attention will be focused on certain objectives for leadership development and the factors which enhance or detract from the effectiveness of training courses. The latter is an aspect which has generally been neglected, to the detriment of the individual and the organisation.

In describing leadership, Merton says . . . the overriding functions of leadership can be instructively reduced to two. The first is the integrative function providing for that socio-emotional support to members of a group which stabilizes systems of social relations between them. The second is the instrumental function providing for effective mobilization and co-ordination of activity to enlarge the amount and improve the quality of task-performance. Both generic functions are of course essential to the operation of social systems. But phases in a system vary, sometimes requiring more of the first function, sometimes more of the second . . . whether encompassed in the same people or allocated to different people, these functions are basic to the effective working of social systems.\(^{18}\)

Leadership training may take any of several forms, but almost always implies the need for some change in the knowledge, attitudes, skill or performance of the trainee(s) and may also be used to change entire organisational units. For the trainee (whether a ward sister or a senior nurse administrator) the change is usually intended to improve her performance in her present position, prepare her for the future requirements of her position or, prepare her to meet the requirements of promotion to a higher position.

This necessitates that leaders should discover the extent to which they still think as nurses rather than as managers, as perpetuating behaviours learned in early nursing may well have dysfunctional consequences. It also requires that they should discover the wider aspects of their respective roles and learn how to take innovative action in order to create conditions which will be more supportive, though not necessarily more protective, of those under their charge. This inevitably involves learning to cope with added responsibility and associated anxiety.

Leaders must be agents of change and also changing agents.\(^{19}\) In essence, managing change means changing management from a management that is a victim of change to a management that is an instrument of change.\(^{20}\)

Lippit classifies two main types of change: planned change and unplanned change. Nurses are taught how to act in times of unplanned change (disaster and danger) but little if any instruction is given on how to cope with planned change. This is essential if the objectives of the organisation, department or individual are to be fulfilled. Sometimes people find it hard to accept change because they do not do a very good job of accepting themselves as individuals. Carl Rogers
said of himself . . . the curious paradox is that when I accept myself as I am, then I change . . we cannot move away from what we are, until we thoroughly accept what we are. Then change seems to come about almost unnoticed22.

A key role for development and training personnel is to create an environment which is supportive and in which the individual feels secure for only then will change at a personal level be possible and this is ultimately where all change must occur.

If the leadership role of the administrator consistently provides direction, support and opportunities for active participation in administration, then an organisational climate will be established which makes the introduction of change a normal and expected event.

Ultimately the outcome will be a systematic programme of change that brings with it higher levels of nursing and hospital achievement through the contributions of persons who, having the capacity to grow, are given the opportunity to grow23.

In such a supportive environment the anxieties associated with innovative action can be significantly reduced, consequently enhancing the individual capacity for risk taking in interpersonal relationships. Leaders need to learn how to check out, or even discover, their ability to engage in pragmatic relationships with other authority figures to improve the likelihood of a greater fulfilment of organisational objectives as they perceive them. In so doing, it is necessary for them to learn to what extent they use organisational systems and traditions as a protection against coming into too close contact with others, and instead to learn how to form appropriate relationships in order that, by leaning on them, they can then use systems and procedures to shape, more effectively, their respective roles.

Leadership training, as a method of change, differs from other methods in that it relies on learning and attitude formation rather than power, as the major path toward behaviour change and thus, it involves a commitment on the part of the trainee. Once attained, it is likely to be sustained over a longer period of time and without the use of organisational controls.

In complex organisations, such as the hospital, the social influences that serve to constrain or support leadership training arise from the formal authority system, the exercise of formal authority by the superiors of the trainee, and the trainees primary work group. Conflict between these influences and the attitudes or behaviour taught in leadership training account for many of the dysfunctional consequences of training.

The formal authority system is usually expressed in the mechanisms by which this authority is allocated (such as policies, procedures and position descriptions); and enforced (for example by control systems and performance appraisal). These organisational practices influence the effectiveness of the hospital, group cohesion and affect trainee attitudes as well as the outcome of leadership training24.

Trainees from highly centralised organisations (such as many hospitals) who have become predisposed toward delegating authority, are likely to experience a conflict between their attitudes and the hospital's formal organisation. They may try to modify the prevailing system, but these attempts imply discontent and may be interpreted as an expression of disloyalty or as a threat to the prevailing hierarchy.

When thus interpreted, negative sanctions may be applied to the trainees' superior. Superiors influence trainees through their exercise of formal authority and evidence has shown that subordinates tend to act as their superiors act, have attitudes similar to those of their superiors and behave according to their perception of their superiors' desires25. The outcome of the training efforts are, therefore, significantly affected by the superiors' response. Although this may theoretically appear to be an over-simplification, this is not entirely so in practice, for how often has one not seen young (or older) professionals who have shown exceptional promise and creativity in post-basic education programmes who have returned to their hospital and been engulfed by the system.

However, not all the blame can be laid at the door of the superiors for the expectations of peers and immediate subordinates affect the trainees attitudes towards her training and her ability to transfer her new knowledge and skills to her work environment. Where these conflicts with group norms or subordinate expectations, the chance of success is lowered.

The three sources of social influence, viz. the formal authority system, the exercise of formal authority of superiors and the norms and expectations of the primary work group can be analysed into their motivational and reinforcement effects and assessed from:

— their congruence with the prescriptions of the training,
— the clarity of their relevance to trainee reward and punishment, and
— their tendency to induce anxiety in the trainee.

The consequences of leadership training, therefore, depend on the degree to which the social influences in the trainee's work environment are viewed by the trainee as motivations to learn and the degree to which they reinforce the learned behaviour during and after training.

The social influences in the work environment which explain why leadership training produces both functional and dysfunctional consequences have profound implications for nurse educators. When training efforts are designed to meet the specific needs of a particular hospital and are administered with the hospital to a large proportion of its leaders, then changes in group norms and significant pressures to change the formal structural arrangements for administering the division/unit are more likely to occur. This is not the case when one or two nurses are sent to other organisations, such as hospitals or universities for formal courses unless these courses are designed to take account of the trainee's specific situation. The importance of the role of the development and education department in leadership training within a large hospital is thus evident.
ORGANISATION DEVELOPMENT

Burke defines organisation development as: a planned process of cultural change. It involves change of an organisation's culture from one which avoids or ignores an examination of social processes in organisations, especially decision-making, planning and communication to one which institutionalises and legitimises this examination... The culture of an organisation is a set of learned and shared assumptions about the norms which regulate member behaviour.25

If one accepts Burke's definition then it becomes imperative that, in any education programme the approach must be one which fully recognises that an organisation evolves with a system of management and a culture which complement each other, which for the members of the organisation is both the natural order and the reference for action and control.27

Organisation development techniques, such as team building, role clarification, process consultation, education and management by objectives, should be linked to available organisational resources and then applied to help solve problems. These techniques must be learnt within the context of the specific unit/ward and the role of the nurse administrator (specifically responsible for development and education) in facilitating this is crucial. If staff are to demonstrate these attitudes and skills they must first be evidenced in the individual nurse administrators and reflected in the organisation and policy making procedures throughout the hospital. Most organisation technology deals with improving the processes by which people relate to one another and work together, such as the design of jobs, the structure of reporting relationships, formal or informal communication patterns, and clarity of roles.

The purpose of organisation development are growth of people, the fostering of an open problem-solving work climate, the improvement of methods of conflict resolution, and the development of more effective collaboration among groups.

FUTURE TRENDS AFFECTING STAFF DEVELOPMENT AND EDUCATION

Just as bureaucracy emerged as a creative response to a radically new age, so today new organisational shapes and forms are surfacing before our eyes. In fact, Bennis predicted in 1967 that... in the next 25 to 50 years we will participate in the end of bureaucracy as we know it and the rise of new social systems better suited to 20th Century demands...28

Whether one agrees with the details of Bennis's statement or not, one thing is certain, and that is that organisations are changing and will continue to change. The effect of this process on hospitals is already apparent and will become increasingly evident. The development and education profession must thus design long-term programmes to meet the anticipated trends.

Throughout it is envisaged that there will be an increasing need to emphasise the professional management of social systems for indeed a hospital has a definite social structure which is apparent at group, unit, department and organisation levels. One writer refers to the general hospital as a self-contained social universe.29 The concept of the hospital or any large organisation as a social system is not new, and yet despite this fact, Bennis writes... It seems to me that management have failed to come to grips with the reality of social systems. It is embarrassing to state this after decades of research have been making the same point. We have proved that... training effects fade out and deteriorate if training goals are not compatible with the goals of the social system, that group cohesion is a powerful motivator... that individuals take many of their cues from their primary work group... and so on. Yet this evidence is so frequently ignored that I can only infer that there is something naturally preferable (almost an involuntary reflex) in locating the sources of all problems in the individual rather then as symptoms of malfunctioning social systems.

Just as it is no longer possible to make any enduring change in a problem child without treating the entire family, it will not be possible to influence individual behaviour without working with his particular sub-system. This means that training and development managers of the future must perform the functions of systems counsellors.30

In essence, therefore, organisation development must go hand in hand with staff development and particularly management/leadership development.

The reality of the dynamics of the training situation would suggest that there are, at the very minimum, three parties to the process — the organisation which initiates the training, the course members and the trainers who conduct the programme.31 At present, post-basic education in nursing primarily occurs outside the organisation and, therefore, the educators are not members of the organisation. This is frequently the situation in basic courses as well. The result of the education process is largely determined by the extent to which the expectations and assumptions of all three parties concerning the curriculum content and outcomes are made known, for these are essential to the design of any course. The accurate recognition and successful integration of these expectations, by the educator, is a difficult and complex process, but it is made easier if the educator is working in close contact with the sponsoring organisation/s or a division within it. In this situation, not only can she (he) more accurately determine the training needs and philosophy of the organisation, but she (he) can work within it to help to prepare a supportive climate. This will enable the members to make the transfer of learning back to the work situation more easily, and in effect help to remove some of the barriers and obstacles which can exist towards the introduction of any changes they wish to make.

It is apparent, therefore, that nurse educators will be required to increase their knowledge and skills concerning social systems (hospital, community, etc.) and the process of change. Educators can be key persons in bringing about organisational change and renewal, and, therefore, organisation development must become part of the
role of the educator. Conversely, management training programs are so frequently found to be associated with periods of organisation change as to suggest the existence of a strong belief in the efficacy of the training process in helping an organisation to adapt to change and pursue newly chosen directions.  

Another requirement for development and education personnel is to enable staff to become comfortable in the presence of change and to work effectively within organisations characterised by continuous change. A key to succeeding in this regard and indeed to organisational accomplishment in general, is effective face-to-face groups. Likert comments on the importance of organisational work units or teams: Each of us seeks to satisfy our desire for a sense of personal worth and importance primarily by the response we get from people we are close to, in whom we are interested, and whose approval and support we are eager to have. The face-to-face groups with whom we spend the bulk of our time are, consequently, the most important to us. Our work group is one of the most important of our face-to-face groups and one from which we are particularly eager to derive a sense of personal worth.  

This statement is corroborated by studies in psychology, sociology and psychiatry and, as a profession, nurses would confirm their belief in the importance and centrality of team work in effective practice. Despite this fact the existence of real teams is the exception and the evidence of training in group dynamics at all professional levels is almost non-existent except within the discipline of psychiatry.  

If an organisation, and a hospital in particular, is to make maximum use of its human resources and satisfy the highest level of man's needs, it will come to function best in situations where the individual relates effectively to those organisational groups of which she is a member and leader. This situation does not occur spontaneously and requires consistent effort and training at all levels throughout the organisation as well as administrative practices which are in accord with small group dynamics. Rensis Likert writes in his New patterns of management that management will make full use of the potential capacities of its human resources only when each person in an organisation is a member of one or more effectively functioning work groups that have a high degree of group loyalty, effective skills of interaction and high performance goals. The present system of staff rostering which is operative in most large, teaching hospitals and requires substantial staff changes on a monthly basis mitigates against effective small group functioning and therefore retards staff development and also increases wastage levels. A key need in the hospitals of the future will be to utilise small groups effectively for some form of team organisation promises to be the major innovation in dealing with complexity and change during the coming decades.  

Success starts with awareness. If the nursing and hospital administrators are not aware of the need for renewal, it is foolish to think that the process will ever be achieved. In the future they may see: stagnation and decay as the order of the day unless they develop socio-technical structures and processes that engender resilience, renewal, and a fearlessness of revision. This is not easy, but it is a necessary task.  

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15. Ibid. p.24  
19. Ibid.