

Adding Value to School Leadership and Management

**A review of trends in the development of managers in the
education and business sectors**

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Abstract

The current focus on leader preparation and development in schools reflects the importance societies around the world are placing upon the goal of improving the productivity of educational systems (Hallinger, 2003; Huber, 2002). The investment of substantial new resources into these activities is based upon *the belief that school leaders make a difference* in the capacity of schools to implement education reforms and in the learning outcomes of students. Continued investment will, however, only follow if institutions engaged in these educational efforts are able to demonstrate the use of the most effective methods and yield results that meet the public's expectations.

This paper reviews trends in the preparation and development of leaders and managers across the education and private sectors. The specific purpose of the review is twofold:

- to update knowledge about effective means of preparing and developing school leaders and managers drawn from studies of efforts undertaken globally over the 25 years
- to examine curricular trends in the education and development of business leaders and examine the implications they have for leaders and managers in schools

The review identifies a number of key global trends in leadership preparation and development in education including:

1. New research-based and craft knowledge about teaching and learning, and leading schools represent legitimate subjects for learning among prospective and practising school leaders.
2. The changing knowledge base and context for the practice school leadership makes lifelong learning a fundamental facet of the professional role.
3. To foster the development of capacities for lifelong learning professional development should include blended learning that maximise the impact of on-line and face-to-face, as well as synchronous and asynchronous experiences.
4. In an age of chaotic change school leaders need to develop their affective as well as cognitive capacities to lead.
5. The process of leadership development should actively engage around the problems that school leaders face in their work.
6. Implementation of new knowledge and skills requires a flexible combination of on-site coaching and networks of support.
7. Professional preparation and development of school leaders must be built around a clear set of measurable standards.

The paper goes on to identify knowledge domains included in business management curricula that receive either minimal or no attention in preparation and development programs for school leaders. These fall into the domains of managing information and management competencies. Under *Managing information* we note the need of managers in modern organisations to understand the impact of integrated information systems (known as enterprise resource management) and how to manage and use information for effective decision-making (eg information exploitation, knowledge management).

We then discuss a second domain consisting of management – as opposed to leadership – competencies. These management competencies are aimed at the efficient use of resources towards the achievement of the organisation's vision and goals. They include: project management, decision-making, customer relationship management, quality management, strategic management and balanced scorecard.

The paper concludes with an acknowledgement that education and business sectors differ in their fundamental purposes and that these differences do impact on some of the assumptions that underlie use of these management techniques (eg ability to measure adequately a school's desired outcomes). Nonetheless, we believe that a systematic examination of these management domains and integration of selected ones into the education curricula for school leaders has the potential to yield better use of scarce resources and a higher likelihood of achieving the school's desired outcomes.

Introduction

Leadership preparation in the field of education has had a long and ambivalent relationship with the world of business management. Dating back to the early and mid-20th century in the USA, education scholars such as Elwood Cubberly were strongly influenced by the trend of “scientific management” that prevailed in the business community. Reaction against the idea that education should be managed “as a business” was aptly captured in the 1960’s by Callahan’s (1962) “Cult of Efficiency.” The pendulum has swung back and forth several times between education’s embrace of business management techniques that would make schools more “efficient” and movements proposing that the profession should focus on developing leaders strongly grounded in education.

The first author experienced this first hand in his own training at the Master degree program in Administration and Policy Analysis (APA) at Stanford University in the late 1970’s. The APA program had emerged through a redesign of the school’s Master degree program in “educational administration” during the early 1970’s. The new and improved design of the APA program bore the clear imprint of Prof. James G. March who was on loan as a Chaired Professor through a joint appointment from the School of Business. In contrast to graduate programs other schools of education, the Stanford program was not even called “educational administration.” Indeed, the emphasis on “management” at the expense of education was apparent throughout the program. We studied courses such as *Decision Science*, *Organisational Behavior*, *Economics of Education*, *Sociology of Education* and *Politics of Education* rather than the more standard fare of *The Principalsip* or *Introduction to Educational Administration*.

Subsequently, during the 1980s and 1990s, university preparation programs began to shift away from this approach (Cooper & Boyd, 1987; Crowson & MacPherson, 1987). A series of movements, differing in focus and philosophy, reoriented administrative preparation and development in schools towards *educational* matters (eg effective schools, constructivism, learning organisations, teacher empowerment, transformational leadership). Indeed as more in-depth research was conducted into the practice of education in schools, scholars increasingly advocated that educational leadership programs should be grounded in and reflect the core technology of education – learning and teaching processes (Hallinger, 1992; Hallinger & Wimpelberg, 1992; Murphy, 1992, 1993). Management knowledge (eg budgeting, finance) and skills (eg, team facilitation) came to be seen as something to be learned on the job.

Today, we note a push towards redefining educational leadership primarily in terms of its moral dimensions (eg Furman, 2003) and a strong reaction against “managerialism”. This, of course, has important implications for the education of prospective and practicing school leaders. It would increase emphasis on the *normative* dimensions of school leadership and deemphasise technical skills associated with the “management” of school organisations (Hart & Weindling, 1996).

This paper has two central goals concerned with the development of leadership and management capacities of school leaders:

- to update knowledge about effective means of preparing and developing school leaders and managers drawn from studies of efforts undertaken globally over the 25 years
- to examine curricular trends in the education and development of business leaders and examine the implications they have for leaders and managers in schools

In light of current trends emphasising the development of capacities for “moral leadership” for schools, we admit that the focus on “learning from business management’ borders on the heretical. However, we do not believe that capacities for moral leadership and management are mutually exclusive. Without wishing to appear glib, we assert that any useful definition of the administration and improvement of schools requires both capacities for leadership and management (Bridges, 1977; Cuban, 1986; Hall & Southworth, 1997; Katter, 1990; Leithwood, 1996; Leithwood & Duke, 1999; March, 1978). Leadership suggests capacities associated with moral purpose, vision, and the ability to motivate and inspire others to create the schools we would desire. Management refers to the efficient coordination, organisation, and control of

information, people and work processes to achieve the vision and goals set by the organisation (Katter, 1992). Leithwood's most recent research on transformational leadership finds that both management and leadership are necessary

Our perspectives are formed from our own experience inside and outside of education management. Professor Hallinger has been a scholar and practitioner in educational leadership and management for 25 years. Dr. Kamontip has over 30 years of experience in business management and for the past seven years has worked as an educational administrator at the College of Management, Mahidol University (Thailand). The authors have, with other colleagues, been responsible for the design and implementation of the College's business management curriculum. In particular, Dr. Kamontip, Chair of the College's "Innovation in Management Program", has sought to bring the most recent trends in business management into this program. Drawing upon this diversity of experience, we seek to identify the areas in which we believe management curricula of the 21st century can add value to efforts to develop school leaders.

The paper is divided into three sections. The first section describes the state-of-the-art in leadership preparation and development in education, focusing especially on learning approaches. The second section, which comprises the body of the paper, focuses on features of education in business and management that we find missing from education. The final section discusses the implication of these differences for the design of programs in educational leadership and management.

State-of-the-art in the education of educational leaders

Three questions frame this reflection on the global state-of-the-art in school leadership development.

1. Do school leaders make a difference in the process and outcomes of schooling?
2. If school leaders make a difference, how do they contribute to creating better schools?
3. And if we can describe effective school leadership, what do we know about our ability to develop these capacities?

The first two questions have been addressed at length elsewhere (see Hallinger & Heck, 1997, 2002). In brief, research conducted over the past 20 years finds that school-level leadership makes a difference in the school and classroom climate as well as in the outcomes of schooling. Not only does research find that school leaders influence the capacity of schools to change, but they also have a *positive and measurable, though small and indirect* effect on student achievement outcomes.

While it may be comforting to know that empirical research supports conventional wisdom, this is of limited utility without elaboration of *how* leadership contributes to school effectiveness. Though incomplete, researchers have also begun to describe the avenues through which principals and other school-level leaders enhance school effectiveness. Principals achieve these positive effects through their efforts to:

1. Create a shared vision and mission for the school (Hallinger & Heck, 2002)
2. Restructure the formal organisation of the school (eg class schedules, teacher's time, grade/unit organisation) in order to support instructional effectiveness and enhance staff collaboration, decision-making and communication around teaching and learning (Hallinger & Heck 1997; Leithwood, 1994)
3. Provide stimulation and individualised support for development of the teaching and learning capacities of staff (Leithwood, 1994, Leithwood & Jantzi, 1999)
4. Reshape the school culture in order to emphasise norms of continuous learning and collaborative work (Hallinger & Heck, 1997, Leithwood, 1994)

While this set of conclusions remains to be filled out in greater detail, it lays a foundation for thinking about the focus of school leadership development. Almost a decade ago, Leithwood cogently articulated an additional reason why developing the capacity for school leadership development takes on importance at this particular juncture in time:

Some of the reasons for this shift in [educational] emphasis are to be found in the quite recent school restructuring movement's preoccupation with the redistribution of power and responsibility . . . to both central governments and the local schools. . . . At the school level, this has fostered greater interest in the empowerment of teachers and community members including more shared leadership. . . .

From this [recent] redistribution of power and responsibility has emerged a decidedly different image of the ideal educational organisation. . . . This is an organisation less in need of control and more in need of both support and capacity development. Organisational needs such as these seem more likely to be served by practices commonly associated with the concept of leadership. . . . than administration. (Leithwood, 1996, p. xii)

It is interesting to note that principal leadership appears especially critical in schools which seek to empower stakeholders such as teachers, parents, community members and students. Learning about the structural and legal facets of administration sufficed during eras in which principals (and teachers) were primarily order-takers in a hierarchical system. Yet, as Leithwood noted, changes in the context in which school leaders operate today call for a different set of knowledge, skills and attitudes.

While some would prefer to wait until the field can provide further direction as to *how* school leaders contribute to school effectiveness, this is a futile course of inaction. As Fullan and Hargreaves (1998) conclude with respect to the implementation of change more generally:

There is no easy answer to the “how” question. Singular recipes. . . oversimplify what it will take to bring about change in your own situation. Even when you know what research and published advice tells you, no one can prescribe exactly how to apply [it] to your particular school and all the unique problems, opportunities, and peculiarities that it contains. (p. 106)

The knowledge base will never be complete, but the new demands made of schools – eg technology implementation, multi-culturalism, global competition, shared decision-making, centralised curriculum and curriculum standards -- make developing the leadership capacity of schools increasingly urgent. These observations provide a foundation for the following discussion of state of the art practices in school leadership development.

21st century school leadership development in education

In this section we present conclusions concerning the state-of-the-art for the organisation and practice of school leadership development that have emerged from significant reviews of the global education arena (see Hallinger, 2003; Hart & Weindling, 1996; Huber, 2002). The past 25 years have witnessed concerted effort among practitioners and researchers in this field. These can be distilled into the following conclusions and related recommendations.

1. New research-based and craft knowledge about teaching and learning, and leading schools represent legitimate subjects for learning among prospective and practicing school leaders.

As noted above, a knowledge base drawn from the fields of leadership (inside and outside of education) as well as from teaching and learning should provide the basis for forthcoming leadership development efforts. There are knowledge domains and skills worthy of mastery among school leaders and the knowledge base is *not* static. Prospective and practicing school leaders have a responsibility to maintain their knowledge of current practices in their field.

Advances from research in teaching methodology, teacher effectiveness, school effectiveness, and school improvement represent core areas of knowledge for school leaders. While instructional leadership only represents one part of what school leaders must know and be able to provide, it is a key domain. Other leadership and management domains are also necessary for the productive management of schools.

It is also notable that the knowledge base underlying school leadership should not be limited exclusively to research-based findings and theories. We have noted a tendency of universities to give short shrift to knowledge gained from the practice of school leadership and management (Barth, 1997; Cooper & Boyd, 1987; Crowson & MacPherson, 1987; Hallinger, 2003; Hallinger & Wimpelberg, 1992; Murphy, 1992, 1993). The craft knowledge accumulated by practitioners represents an equally worthy basis for training and development, especially during professional development that follows induction into leadership roles (Barth, 1997; Littky & Schen, 2003).

However, universities will always evince a marked bias towards knowledge gleaned from research over that which accumulates through the wisdom of practice. Universities, therefore, represent only one suitable venue for preparation and development programs for school leaders. We therefore, assert that learning on the job and in the context of the workplace must receive greater emphasis in formal programs of professional preparation and development than has been the case in the past (Hallinger, 2003; Littky & Schen, 2003; Murphy, 1992, 1993).

2. The changing knowledge base and context for the practice school leadership makes lifelong learning a fundamental facet of the professional role.

“In complex, rapidly changing times if you don’t get better as a teacher [or principal] over time, you don’t merely stay the same. You get worse” (Stoll & Fink, 1996, quoted in Fullan & Hargreaves, 1998, p. 49).

Annual attendance at a convention no longer suffices as a leader's efforts at professional development. Life-long learning has become a *necessary* and *fundamental* facet of the school leader's role. The increasing complexity of the school leader's role demands ongoing efforts to maintain currency. It is no different from a doctor who would find it difficult to think about continuing to practice without ongoing engagement with the profession's knowledge base.

Fortunately, encouragement of a norm of lifelong learning stands as one of the hallmark achievements of the principal's center movement started at Harvard University in the early 1980's (Barth, 1997; Hallinger, 1992). Widespread adoption of local principal's centers as well as state-wide leadership academies has fostered the expectation that school leaders must be learners in order to lead schools (Barth, 1986; Hallinger, 1992). Indeed we would expect that efforts of the NCSL in the UK to promote learning communities leverages will have carry-on effects in this domain. The development of norms that support professional learning – formally and informally – are likely to be among the most important outcomes of leadership development efforts to date (Barth, 1997; Hallinger, 1992; 2003).

The past two decades have seen demonstrable progress in the attitude of school leaders towards the notion of lifelong learning (Hart & Weindling, 1996). This must, however, be strengthened further through government policy as well as through the active engagement of the profession in charting the course of professional learning (Caldwell, 1996). Local school authorities need to examine the implicit expectations as well as their policies with respect to professional development. Do they expect school leaders to engage in ongoing development? Do governments and LEA's provide resources to support both learning and implementation? Do policies provide a framework of support for prospective and current leaders (Hallinger, 2003; Huber, 2002)?

The profession must also take a hard look at its responsibilities. School leaders must take greater responsibility for their professional learning. Amazingly, this has *not* been a traditional norm among educators. The time has come for professional educators to engage with parties inside of the educational profession (e.g., universities, research institutions) as well as outside the profession (e.g., governments, corporations, community institutions) to define the agenda for professional learning and development in the coming years (see Fullan & Hargreaves, 1998; Huber, 2002).

3. To foster the development of capacities for lifelong learning, professional development should include blended learning that maximise the impact of on-line and face-to-face, as well as synchronous and asynchronous experiences.

One of the key constraints any professional development programs must contend with is time. Busy professionals in any field have limited time to attend formal courses. The advent of the internet and other learning technologies has brought about the approach referred to as *blended learning*. Blended learning incorporates strengths of distance and face-to-face learning (Bernard et al., 2004; Abrami & Bures, 1996) This approach seeks to capitalise on the potential of e-learning systems to allow school leaders to access a wide range of learning resources in real-time as they need them. Moreover, they allow them to access information while on-the-job.

These characteristics of blended learning make it possible to offer courses or ancillary support in a variety of non-traditional modes. They make it possible for participants in a training program to continue to learn in a structured way, but from their own workplace. This form of learning further develops the previously weak norms of lifelong learning that existed in the education profession.

4. In an age of chaotic change school leaders need to develop their affective as well as cognitive capacities to lead.

As Bridges' (1977) noted 20 years ago, leadership development programs in and out of education have traditionally focused on the cognitive side of the leader's role, often leading to dysfunctional consequences such as "analysis paralysis". The chaotic changes that characterise life in schools of this era further handicap our capacities for rational planning (Drucker, 1995; Fullan, 1991,

1993; Fullan & Hargreaves, 1998). Moreover, the shift from a unitary, order-taking administrator to multiple school-based leaders places even greater importance on developing the affective capacities of future leaders (Barth, 1986; 1997; Leithwood, 1996).

Yet, to examine a curriculum in educational administration in most universities around the world, one would believe that emotions play no part in leadership (Bridges, 1977; Bridges & Hallinger, 1995). Dealing with the emotional side of leadership has, heretofore, simply been outside the realm of most leadership preparation programs. This must change and should be reflected in the practices and processes as well as the content of leadership development programs.

5. The process of leadership development should actively engage learners around the problems that school leaders face in their work.

One innovation of the 1990's in professional education generally, as well as in school leadership was problem-based learning (PBL). This approach to professional education eschews the traditional organisation of the management curriculum around the academic disciplines (Bridges & Hallinger, 1995; Leithwood, Jantzi & Steinbach, 1999). Instead, PBL requires learners to understand and apply research, theory and craft knowledge to major problems faced by practitioners (Bridges & Hallinger, 1995; Copland, 2000). PBL places the academic disciplines and formal knowledge base at the service of the profession and provides an active means of instruction that respects and builds upon the prior knowledge of learners (Bridges & Hallinger, 1995). PBL is *not* the silver bullet that will enhance the professional learning of school leaders. However, it does represent one useful tool for professional development.

Other non-traditional approaches to professional learning that focus on key problems in the workplace have found their way into leadership development programs in recent years. For example, apprenticeships and mentorships also have the potential to develop dimensions of leadership that are seemingly immune to traditional lecture and discussion on leadership topics (Hart & Weindling, 1996; Littky & Schen, 2003). Two criteria must, however, be present before these active learning approaches can succeed. The first is the opportunity to engage in tasks that carry the full weight of responsibility. The second is the presence of a coach or mentor who has both the skills of a leader and a teacher.

6. Implementation of new knowledge and skills requires a flexible combination of on-site coaching and networks of professional support.

Policy-makers believe that updating the knowledge base of practicing school leaders will lead to more successful program implementation. However, evaluations of training programs find that this belief has only been partially borne out in practice (Hallinger, 1992). Evaluations of leadership development efforts find that exposure to new knowledge via training bears only a small relationship to change in practice at the school (Hallinger, 1992; Marsh, 1992). As the research on staff development more generally has concluded, in-service that fails to incorporate coaching and support following the introduction of new ideas and skills yields few lasting effects (Joyce & Showers, 1983, 1996).

Leadership development intended for behavioral change must include a support component that all too often is absent (Peterson, 1987; Schainker & Roberts, 1987). Sometimes team participation will afford a means of support. In other cases, a school leader may find support from a colleague who acts as a coach. The operative principle is that school leaders need the same support components for behavioral change as teachers: motivation to learn, time to learn, resources for learning, a model, a coach, and opportunities for practice.

Possibly the most salient concept for thinking about the professional development of teachers in the past decade has been the *learning organisation*. A learning organisation is one that organises in ways that enhance the capacity of staff to learn individually and collectively (Hallinger, 1998; Leithwood, 1994; Senge, 1992). This is especially salient as we think about the professional development of principals and teacher leaders.

The ugly reality of professional development is that it is very difficult to organise learning opportunities for busy school staff at convenient times and locations, never mind with the desired support. To the extent that schools can develop structures and norms that foster the norms and practices of learning organisations, it can mitigate some of the obstacles to professional learning noted in this paper. This portends as one of the key areas of exploration among practitioners and staff developers in the coming decade.

No single type of organisation, be it a professional association, state education authority, local school authority, university, private training firm, or an informal association of principals can meet all the diverse development needs of school leaders. Unitary solutions are only effective in the minds of policymakers. Consequently, funding and policies related to school leadership development should support a range of alternative providers.

In addition, to the extent possible, school leaders themselves should be involved in the identification of needs, in the selection of programs, and even in the provision of services. Though not essential to the provision of an effective training program per se, these steps further the desirable trend towards professionalisation.

7. Professional preparation and development of school leaders must be built around a clear set of measurable standards.

Several nations have embarked upon the design of professional standards for school leaders (Hallinger, 2003; Murphy & Shipman, 2003). Indeed it is interesting to note that similarities between the standards across different countries suggests the emergence of a global consensus on the role of an effective principal! This is both surprising and a phenomenon that we would not have expected even a decade ago. The development of a common notion of what makes for a productive school and the roles of principals and teachers (and even parents and the community) in bringing that about reflects an unanticipated outcome of the process of globalisation.

These standards in essence define what these educational agencies seek in their principals. Many facets of this “definition” are tied to the local context of education. That is, the context shapes perception of the needed capacities among leaders. Since globalisation is increasingly leading to convergence on a variety of system features among educational systems across the world, it is not surprising to find these similarities.

Conclusion

The rationale for fostering leadership in schools is clear: the expanding knowledge base and the increasing complexity of the school leader’s role make professional development a necessity, not a luxury. We have gone beyond the question of *why* develop school leaders. From this point, policymakers and critics should be responsible for stating the case, *why not*.

As Roland Barth has eloquently inscribed: “One definition of the at-risk learner is any student who leaves school before or after graduation with little possibility of continuing learning” (1997, p. 12). This observation is as salient to the learning of school leaders of today and tomorrow as it is to students at-risk in our secondary schools. Taken together, the recommendations presented in this paper point towards the need to root the development of school leaders in the fostering of schools as learning communities and educators as members of a learning profession.

State-of-the-art in the education of business leaders

Education in the field of business management is broader in terms of program areas covered (eg accounting, finance, human resources, general management, entrepreneurship) and more globally diverse than management training in education. It is therefore difficult, if not impossible, to describe a single curriculum that reflects business education throughout the world. Therefore, we take more limited approach. We will focus on identifying those aspects of current business management curricula that seldom appear in preparation programs in educational leadership and management and that are – in our judgment -- appear relevant.

Trends shaping the management of business organisations

The management of business organisations throughout the world has changed in significant ways since the early 1990. The sources of the most significant changes include the following (Drucker, 1995; Naisbitt, 1997; Ohmae, 1995; Rohwer, 1996):

- Growth and integration of a global, increasingly free-market economy has raised the standard of competition in all sectors providing goods and services.
- Greater openness of political systems among nation states allows greater access to global information and exchange of cross-border business.
- Developments in information technologies have fundamentally changed the way in which business is conducted allowing for less expensive communication, easier transfer and sharing of information, and greater efficiencies in production and management.

These global change forces have wrought fundamental changes to the way in which companies are being managed. For example, we find the following management trends:

- Organisations have restructured in order to respond to more open competition (Ohmae, 1996).
- There is an increased emphasis on entrepreneurship and entrepreneurial management as engines of economic growth internationally (Drucker, 1995).
- The recognition that ethical crises and environmental problems located in a single nation or organisation become magnified in a global society has led to a greater emphasis on moral leadership and social responsibility among business leaders (Csikszentmihalyi, 2004).
- Information management is now a core competency required of managers through business organisations (Drucker, 1995).
- There is greater emphasis on linking corporate vision and goals with performance measurement (Norton & Kaplan, 1996).
- Knowledge is viewed as a key “currency” of the organisation that requires active organisation and management (Buckman, 2004; Stewart, 1997, 2001).
- Innovation and change capacity are viewed as new corporate competencies (Drucker, 1995; Rohwer, 1996).

These changes have brought about significant changes in the education and training of business leaders. They have required a new cadre of business who possess a broader set of both leadership and management competencies and capacities.

Goals and objectives

The goals of modern business management curricula reflect many of the same concerns extant in preparation programs in educational leadership and management. These include, but are not limited to the following desired knowledge, skills, attitudes and competencies:¹

- *Functional knowledge*: A comprehensive knowledge of the functional areas of business management including ability to use relevant social science theories in managing organisations;
- *Problem-solving*: Ability to think laterally, critically, innovatively, creatively, and to make connections among diverse fields of study in analysing problems.
- *Global perspective*: A global perspective based on an understanding of both the domestic and global environments of the organisations.
- *Leadership*: The ability to work collaboratively to set a vision for the organisation, develop a strategy for implementation, and motivate others to join in working towards its achievement.
- *Ethics*: Awareness of ethical and environmental impact of decisions and their role in managing people and organisations in a diverse, global society.
- *Adaptability*: Understanding of oneself and the ability to adapt to a changing environment through lifelong learning.
- *Communication*: Ability to communicate effectively in writing and orally in ways appropriate for a variety of objectives and audiences.
- *Managing information*: Knowledge of and ability to use information technologies as tools for more productive management of organisations.
- *Management competency*: Ability to utilise leadership skills effectively, interact effectively in group situations, manage in culturally diverse environments, help others develop their skills, resolve conflict effectively and act independently in low feedback environments.

As suggested earlier, these overlap to a considerable extent with the goals and objectives of preparation and development programs described in educational leadership and management curricula (eg Hallinger, 2003; Huber, 2002). Taken together with the key trends cited above, we would identify two key areas in which we see either limited or no overlap between curricula in education and business management education: managing information, managerial competencies. These will represent the focus for our more extended description and discussion.

The reader may note that *leadership* is not included as one of the areas on which we will focus. The rationale for this is that there is already a strong emphasis in the education sector on leadership (Furman, 2003; Hallinger, 2003; Huber, 2002; Leithwood et al., 1996). Moreover, despite the especially strong reaction in the UK among some educators against “managerialism”, we believe that strengthening of *management* knowledge and skills is essential to the ability of *leaders* to achieve the vision set for their schools, both locally and nationally.

¹ <http://www.uwlax.edu/ba/graduate/outcomes.html>;
<http://www.bus.umich.edu/Academics/>;
<http://www.business.uc.edu/mba/academics/fulltime/features>;
<http://www.usc.edu/dept/publications/cat2004/schools/business/graduate.html>

Indeed, even within the education sector, there is a rationale for strengthening the managerial capacity of school leaders. Professor Ken Leithwood, the foremost scholar studying transformational leadership in education concluded the following:

Most models of transformational leadership are flawed by their under representation of transactional practices (which we interpret to be “managerial” in nature). Such practices are fundamental to organisational stability. For this reason, we have recently added four management dimensions to our own model based on a review of relevant literature (Duke & Leithwood, 1994). (Leithwood & Jantzi, 1999)

The recognition that good management is also important to achieving the school’s vision for its students and other stakeholders has been overshadowed over the past 20 years during succeeding waves of education reform throughout the world. The urgent need for more rapid change in institutions renowned for resistance to change made leadership – albeit of different types – the focus of many preparation and development programs delivered internationally (Hallinger & Wimpelberg, 1992; Hallinger 2003). Leithwood’s observation suggests that the achievement of a vision for an organisation also requires a strategy and managerial competence to bring it about. The development of these necessary managerial competencies has too often also been lacking in preparation programs for school heads, or they have not been well linked to the leadership role.

Nonetheless, influential scholars have previously noted that leadership comprises only one important role of a school head. Larry Cuban (1987) noted that the nature of the school as an organisation requires the head to engage in what he referred to as instructional leadership, political leadership and managerial leadership. Cuban emphasised there is a form of “DNA” in the headship that will always compel the school head to come back to the management role.

James March, one of the 20th century’s most notable organisational theorists, coined the metaphor for educational management as “creating bus schedules with footnotes from Kierkegaard” (1978, p. 224). He observed that:

Elementary competence in organisational life is often under-rated as a factor in managerial effectiveness when we write against a background of concern for the issues of great leadership. . . . Much of what distinguishes a good bureaucracy from a bad one is how well it accomplishes the trivia of day-to-day relations with clients (1978, p.223-224).

March further argued that the design of preparation programs for school leaders should be grounded in realistic assumptions about the role of the school head in the organisation. Edwin Bridges, in an insightful analysis of leadership preparation programs in education 25 years ago, also identified “socialization of future heads to unrealistic expectations of the role” as a common design flaw in preparation programs. He noted that the propensity of programs to focus on overly lofty conceptions of the head’s role created a gap between their socialised expectations and reality (Bridges, 1977). This led Bridges’ to call for preparation programs to ground their design in a realistic assessment of the nature of the Head’s job that required both leadership and management competence.

This trend remains extant in business management education where management knowledge and leadership are viewed essential to successful management of business organisations. In the following section we will discuss each of these areas as well as courses through which they are delivered.

Managing information

During the past 15 years there has been a quiet revolution in the management of business organisations. The revolution concerns the role and use of information in managing the organisation. Information has taken on a key role in linking different parts of the organisation. Computer systems that emerged during the 1980’s had traditionally been designed around specific functional departments of the organisation (e.g., accounting, procurement, sales). As time passed it became apparent that this type of design accentuated the poor communication that

already existed among departments due to the hierarchical structural design of the organisation itself. This structure contrasts with the organisation's work processes which are horizontal. Many key processes conducted by any organisation are comprised of a sequence of activities that the organisation performs in response to a client's requirements. Most of these, no matter how simple, cut across departmental boundaries. Information systems have represented one means of trying to reduce the negative consequences of hierarchical boundaries in business organisations.

Thus, the first knowledge domains that we discuss with respect to transfer of knowledge from business management to education management concerns the management and use of information. We discuss this in terms of knowledge domains: enterprise resource management, information exploitation, knowledge management, customer relationship management.

Enterprise resource management. Enterprise Resource Management (ERM) is a management concept that responds to this problem by viewing an organisation as an integrated whole. It focuses on linking business activities and the people who operate them. ERM is a means of integrating information in order to contribute to the effective planning and usage of all resources of the enterprise – people, money, materials, equipment – towards the satisfaction of customers' needs. Information is one of the essential enablers of these linkages, and advances in information technology have progressed ERM from concept to practical implementation.

ERM systems are a set of integrated application software that cover all facets of the organisation. Commonly known as Enterprise Resource Planning (ERP) systems, their early focus was on resource planning for manufacturing enterprises. Subsequently the ERM objective of enterprise-wide integration was adopted via software solutions for other types of organisation. They allow for the rapid and smooth flow of information and common use of fundamental databases across all functional departments of the organisation. For example, educational organisations are increasingly exploring the use of ERM systems that would allow access to a common database on students that including records related to demographic and contact info, test scores, GPA, attendance, courses attended, and fee payments.

Knowledge of ERM systems does *not* represent a key competency for educational leaders. However, the need to integrate activities, people and data across departmental or professional boundaries is no less important for educational leaders. Moreover use of the information that – for the first time – ERM systems make available to them is possibly the most important development that has emerged from business management in the past decade. This is highly relevant, for example, to the increasing attention educational systems are paying to data-based decision-making. ERM systems empower managers by enabling them to access more easily the information needed for making better decisions. The succeeding knowledge domains take on greater direct relevance to the role of school-level leaders.

Information exploitation. Through ERM systems, a comprehensive set of consistent and up-to-date data is – for the first time -- available across all functions of an enterprise. These systems are typically classified by IT professionals as “transaction systems for operation-level staff.” Consequently, the use of these systems was destined predominantly for day-to-day operations. Over the years, however, the data accumulated through the use of ERM systems became prohibitively large thus rendering the information unsuitable for management consumption. This is easily imaginable for a school or school system with many students accumulating new information in several domains over a period of years.

During the mid-1990s, more sophisticated software tools were designed that allowed for more efficient and user-friendly data management and analysis. This development served as a stimulant for the business community to exploit their large IT investments and their already comprehensive collection of business information to greater effectiveness. Data were recognised as organisational assets that need to be properly planned, maintained and used (Buckman, 2004; Lee & Prusak, 2004). As management decision-making was increasingly based on information, the importance of quality data also became more obvious. The IT market responded to these realisations by introducing a myriad of tools that focused on Data Cleansing, Data Warehouse,

and Decision Support. More recently the emphasis shifted towards Data Mining software – sophisticated algorithms that employ various types of logic to spot unusual and unexpected patterns that are inherent but not easily observable due to the size of databases in use. Currently the exploitation of data for business advantage is known as Business Intelligence (Bergeron, 2003).

Courses or training focused on information exploitation or business intelligence seeks to prepare managers to understand how available data can be used to understand the performance of individuals, business units, and the organisation as a whole. Thus, the first level of training has the objectives of:

- increasing awareness of the importance of data in decision-making
- sensitising managers to the types of data already available to them in their “natural environment;”
- understanding how discrete data can be transformed into information and then how that information can be filtered and managed to create intelligence to increase the effectiveness of problem-solving and decision-making

Like business managers, education leaders can benefit much from gaining insights into various aspects of their school performance from data that are already available in some forms throughout schools and school systems. Thus skills in identifying information needs of the school, the awareness of IT tools available for information management, skills to use analytical tools to explore and obtain insights from data, and the ability to synthesise facts into meaningful answers to management problems – are essentials to school leaders for more productive management and leadership of their schools.

We would emphasise that the focus here is *not* on IT expertise, but on using tools that support more effective decision-making. Indeed, much of the type of analysis we are discussing here does not involve statistical analysis but on identifying patterns in data and representing those patterns in meaningful ways. The latest software tools (eg Cognos, Hyperion) use relatively simple interfaces that allow managers to pose questions and set up “what if. . .?” scenarios.

The applicability of information exploitation in an education environment should be readily apparent. School leaders today are expected to make data-based decisions. They are responsible for tracking achievement of learning standards, analysing patterns in student test score results, identifying areas of school strength and weakness based on surveys of stakeholders, and assessing areas for faculty development based on student evaluations. These are all examples of ways in which the greater efficiency gained through better skills in information exploitation could be employed to increase the overall effectiveness (eg learning outcomes) of the school.

Knowledge management. Knowledge represents the “*intangible assets of the organisation*” (Buckman, 2004; Rylatt, 2003; Stewart, 1997, 2001). In a school, it is readily observed that knowledge is both the *process* and *product* of the organisation. Knowledge and its management is the business of schools. While it would be difficult to find disagreement with this assertion, it is also the case that schools are notoriously poor with respect to their own management processes. Thirty years ago March and Olsen (1976) referred to universities as “organised anarchies.” This also extends to the active management of information and knowledge.

A second assumption is that knowledge consists of information that is used to create value and competitiveness for the organisation’s products or services (Gorelick & Milton, 2004; Kermally, 2002). This assumption suggests that managers should have the capacity to transform raw data into information that informs decision-making about the purposes and products of the organisation. In our experience, the use of information for school decision-making has never been a strength among school leaders.

A third assumption is that knowledge in the organisation may be tacit or explicit. Explicit knowledge (Formal Knowledge) is knowledge that can be described in language, stored and

transmitted among individuals (Buckman, 2004; Jackson & Hitt, 2003). Tacit Knowledge (Informal Knowledge) is personal knowledge that is rooted in individual experience, involving personal attributes, and intuition. You are often unaware that you have it, and once learned it stays with you (eg how we manage the classroom). It can be difficult – at least initially -- to describe in language which then impedes transfer to other people. However, much of the knowledge that is actually useful for organisational learning is tacit; thus it is neither shared nor compiled for use in decision-making.

With these assumptions in mind, knowledge management would have two main purposes:

- To develop vehicles by which knowledge – tacit and explicit -- becomes accessible as a shared resource among members of the organisation
- To expand the capacity of individuals to access, use, and learn from information collectively. (Alee, 2003; Bergeron, 2003)

Numerous technological tools have emerged over the past decade to assist in managing knowledge (Buckman, 2004; Garvey & Williamson, 2002; Less & Prusak, 2004). These include:

- Intranet and Internet communication systems
- Email and discussion boards
- Document Management software
- E-learning systems

Schools have traditionally been characterised by intense norms of privacy and low levels of accountability. The goal of policymakers over the past two decades has often seemed to be to transform *loosely-coupled* universities into more systematic workplaces. Unfortunately, structural solutions conceived by policymakers often fail when they run counter to the fundamental cultural norms of schools (Cuban, 1988; Fullan, 1991, 1993; March, 1978). Knowledge management represents an underused tool that could leverage the natural strengths of loosely-coupled school cultures while achieving the desired goal of ongoing, long-term improvements in quality (Sanchez, 2001).

For example, in the UK, NCSL's own efforts at building professional learning communities among schools as well as the development of on-line communities comprised of professional educators represent forms of knowledge management. They are explicit efforts to link people and organisations with common problems, needs and goals. In many cases software tools (eg discussion boards) are facilitating the process of sharing knowledge and users' experiences of applying knowledge towards solutions across boundaries (eg classrooms and schools and school systems) in ways never before possible.

There is another aspect of knowledge management that should also be highlighted. This is the capturing, storage, and processing of information related to what individuals and the organisation has learned from its experience in any relevant domains (Bergeron, 2003; Buckman, 2004) These could concern school improvement, use of a new procurement system, or the use of rubrics in assessment. Again, software tools enable organisations to capture and identify this knowledge in ways that were never before possible.

In our opinion, knowledge management is an especially ripe domain for use by school managers and leaders. When viewed from the perspective of school improvement and change, the strengths of knowledge management include the following:

- KM does not base school improvement on changing the structural configuration of schools, but rather works by circumventing those structural boundaries – operating in the interstices between the structures.
- KM focuses on the core technology of schools – the transmission and application of knowledge.

- If KM is used successfully as a means of professional learning for individuals within schools, it has the potential of transforming teachers' own conception of learning and provide useful examples for learning among students.

When teaching knowledge management subject we discuss differences between explicit and tacit knowledge, the transformation between tacit and explicit knowledge, knowledge transformation methods, sources of knowledge and tools for data acquisition and storage, tools and means to support collaboration, access, sharing and transfer of knowledge. It examines knowledge stakeholders – knowledge owners and their readiness to share knowledge, knowledge users who need to actively acquire and making creative and innovative use of knowledge, leaders who must create the organisation, culture, environment, work practices and motivation for knowledge sharing and creative use of knowledge. Knowledge management implementation steps, techniques and factors contributing to success of knowledge management implementation is an organisation are also explored.

Customer Relationship Management. In today's competitive, consumer-driven economy, Customer Relationship Management or CRM has become one of the most widely implemented business initiatives (Gentle, 2002). The word "customer" and CRM's expressed objectives of providing customers with optimal buying and service experiences in order to win customer loyalty and increased business, may lead to a perception that CRM is not relevant to non-profit organisations or education institutions. However, in this era we must consider students and their parents as consumers of an education service.

CRM's basic aims are to understand the needs and wants of different customers and then consistently and effectively satisfy them. Thus, we see that concepts such as *student-centered learning* or a *learner-centered school* are examples of CRM in educational practice (Dyche, 2002). Underlying the actual practice of CRM are several issues that translate directly into education management:

- The relevant products or services – what knowledge, skills and abilities are relevant to particular groups of students.
- The preferred channels and expected levels of services and support – what learning methods, channels, time and environment suit each type of student.
- Channels of effective customer communication – what type of interaction needs to take place between schools, students and parents, and how to keep the key stakeholders consistently involved.
- The organisation's value to customers and vice versa – how students can apply their learning for the betterment of themselves and society; and what the school can learn from them to improve its processes and performance.
- The appropriate price that stakeholders are willing to pay for the education services being provided.
- How to increase customer loyalty – how we meet or exceed students' and parents expectations so that they not only continue to learn with us, but also act as our good-will ambassadors to the world outside.

CRM stresses the commitment of an organisation to act on awareness of these issues and provides a process that enables the organisation to satisfy customers consistently and effectively (Barkey & Saylor, 2001; Gentle, 2002). The CRM processes designed for business organisations is equally applicable, perhaps with reduced emphasis in limited areas, to education management in terms of what the process aims to achieve (Cooper, 2002). It involves:

- Acquire and retain valuable customers,
- Understand customers based on their characteristics, needs, and buying behaviors,

- Develop customised products, services, and delivery channels to meet client needs,
- Interact with and deliver increased value to clients of the organisation.

As educators ourselves, it is difficult to see how these would not be appropriate to schools, especially in an era of increasing accountability. Sociologist Brian (1982) earlier noted that the accountability of schools is fundamentally based upon the extent to which they satisfy the public's perception of *legitimacy*. That is, he contended that public support for schools will increase to the extent that schools satisfy the perception that the public is getting what they want from schools. This is the basis of CRM – to increase the likelihood that customers are receiving the type of service that they desire.

In common with the implementation of other management concepts and techniques discussed in this paper, CRM implementation affects the entire enterprise and requires significant transformation in several related key aspects – business focus, organisation structure, organisational performance measurements, customer interaction, and technology. We have included CRM in this section on managing information because it is only with the advent of software tools that organisations have been able to examine and understand the relationships between customers and organisations services.

CRM education covers the planning and implementation of CRM in an organisation. It examines what is involved in each of the above transformation aspects, practical implementation issues, techniques and tools to achieve the transformation and how to measure the success of a CRM initiative. CRM implementation is a project, and its success depends on the project management ability of the team (Barkley & Saylor, 2001; Dyche, 2002). CRM objectives and performance must form part of the overall organisation's strategic objectives and performance measures; understanding the needs and behaviors of customers is made possible through business intelligence (eg data warehouse, information synthesis, data mining). Thus we again emphasise that the management competencies we discuss here should be viewed as an integrated approach that should be applied together, rather than as separate knowledge areas (Barkley & Saylor, 2001).

Management competencies

As suggested in the prior paragraph, the availability of information and the mind-set of approaching the organisation in a more integrated fashion have led to the need for additional competencies among managers. We have discussed several of these competencies under the heading of *managing information*. In this section we discuss several additional competency domains relevant to increasing the efficiency of effort in educational management: strategic management, change management, project management, decision skills, process engineering.

Strategic management and balanced scorecard. Organisations throughout all sectors and around the world are operating in competitive and rapidly changing market conditions (Kaplan, 2004; Niven, 2002; Porter, 1998). As a result, each organisation must set a clear and challenging vision, formulate a strategy, and plan the actions to achieve the strategic objectives that would lead them to the vision in the most effective and efficient manner. The ability to set vision, develop strategy and motivate others to join in achieving the vision is embodied in the leadership competency, but clear management techniques are also needed to make the vision real (Caldwell, 1998; Davies, 2003; Leithwood & Duke, 1999).

Schools operate in environments that vary more widely than businesses in the extent of overt direct competition. Nonetheless, schools do have a similar challenge of formulating their vision of the future and planning strategies and actions that will create that future. At a minimum schools still need to know, at least as part of "school improvement", what improvements they want to accomplish and how to achieve such improvements (Leithwood & Duke, 1999). Thus, strategic leadership or strategic management has achieved an increasing profile within education in recent years (eg Davies, 2003).

Strategic management involves both strategy formulation and strategy implementation. In strategy formulation, an organisation identifies its mission and strategic goals, analyses the competitive situation taking into consideration both the external environments and its own organisation factors, and crafts strategies that can be used to achieve the strategic goals (Kaplan, 2004). Strategy formulation provides a sense of direction so that members of the organisation know where to expend their effort and resources. Businesses formulate strategies in order to gain competitive advantage (Porter, 1998). When strategy formulation became an established part of business management more than 20 years ago, those businesses that adopted practices of strategy management experienced difficulties in putting strategy into action. Strategies, however well-formulated, are unlikely to achieve long term success without proper implementation (Kaufman, 1995; Kotter, 2002). The questions are in fact two-fold – will the strategies achieve the desired results and are they effectively implemented? It is noticeable that most early books on strategic management acknowledged the importance of strategy implementation, but concentrated almost entirely on the formulation part of the strategic management process (Drucker, 1995; Kotter, 1996).

Strategy implementation is complex and challenging. Strategic implementation almost always will involve changes in several parts of the organisation (eg structure, human resources, reward systems, decision processes, technology). Thus there is an ongoing need for coordination and control in order to ensure that actions designed to put strategy into motion are synchronised (Kaplan, 2004; Olve, Roy, & Wetter, 2003). In addition there is a need for effective measures of implementation progress and strategic results.

Strategy implementation involves changes, possibly drastic ones. Thus leaders must be fully engaged in turning strategy into actions. It also requires the willingness and commitment at all levels in the organisation to align their actions and make modifications as required to meet the desired goals. *Change management* therefore plays a pivotal role in successful strategy implementation (Kotter, 1996, 2002).

In the mid-1990s, Kaplan and Norton (1996) introduced the concept of the Balanced Scorecard (BSC) as a tool to comprehensively measure organisational performance. The scorecard includes both external and internal indicators as well as indicators of the organisation's achievements in the past, present and the likely future. The BSC concept substantially widened organisational performance measures from the traditional focus on financial results (Niven, 2002).

Organisations which embraced this found that it not only provides comprehensive measures of corporate performance, but also effectively supports strategy implementation (Brickley & Smith, 2003). The simplicity and clarity of the Balanced Scorecard serves as a means for communicating strategies to organisation members. The linked strategic objectives in the four perspectives of the BSC – financial, customer, internal processes and learning and growth -- communicates the impact of each strategic initiative on the others (Becker, Huselid, & Ulrich, 2001). The key performance indicators that measure the achievement of these strategic objectives provide a means for measuring the effectiveness of the strategies and the organisation's progress towards achieving its vision (Becker et al., 2001; Kaplan & Norton, 1996).

The traditional BSC strategic map and KPIs (eg Niven, 2002) can be customised for educational institutions where factors such as knowledge creation, social growth, and teaching quality are more relevant than business measures such as profitability or market share. In a sense, schools must meet the same challenge faced by businesses a decade ago; how to create a better balance among easily measured outcomes of the organisation considered vital by key external stakeholders (eg profit/loss for the company and learning achievement for students) and other equally important outcomes that often escape attention (eg social growth of students). The balanced scorecard provides a means of developing and portraying indicators of progress both on school outcomes and the factors that impact upon them (eg class size, teacher quality, student engagement).

It is in fact the school's own stakeholders who provide key input into the development of their scorecard. Leaders work with others to create the vision, formulate strategies to turn vision into

reality and, with their in-depth knowledge of educational issues, are best-placed to contribute to the development of the school's Balanced Scorecard and KPIs. The adoption of performance measures such as KPI makes it necessary for schools to collect, maintain, analyse and interpret data. This emphasises the needs for information management as discussed earlier under *information exploitation*.

Although we believe that the application of balanced scorecards in education is inevitable, it is likely to be fraught with controversy. Critics will argue that the definition of KPI's for a school will lead to achievement of measurable objectives without achieving the school's most valued, but difficult to measure, purposes. This critique confronts all attempts to use measurement in education and echoes the debate over the use of knowledge from the school effectiveness literature as a foundation for school improvement.

While we ourselves have only begun to develop a BSC for the management of our own school, we suggest that the process of identifying KPI's for a school and the potential utility of the BSC in managing improvements make the effort worthy of experimentation. It is certainly a challenge to define important outcomes such as "moral development of students" in measurable terms. However, looked at from another perspective, as the name implies the use of the balanced scorecard could provide a more balanced picture of the school's achievements. Rather than simply focusing on learning achievement on tests, the school could define a wider range of measurable outcomes that could be used to assess its performance.

Change management. Change management is another management competency that has received great emphasis in business education and development programs in recent years. The reasons are the same as those in education. A rapidly changing environment is bringing a continuous stream of changes into business organisations, threatening their ability to translate intentions and strategy into action.

As noted above, business leaders have come to recognise the limited impact of many corporate innovations due to incomplete or ineffective implementation (Senge, 1992). Thus even the emphasis corporations place on strategy development has in recent years been accompanied with increased attention to complementary management skills such as change management and project management. The content taught in business management programs would actually appear quite familiar to managers in education. Models such as those developed by Bridges (2002), Kotter (1990; 1996, 2002), Jick & Peiperl (2003), Senge (1992), Kaufman, (1995), Drucker (1995), Tompenaars, (2004), and O'Toole (1995) form the basis for many education and development courses in change management for business.

Our own perusal of the content of preparation and development programs for school leaders suggests that similar attention is currently being paid to these issues in the education sector. Given this familiarity, we only note its importance, but will not devote additional space to this subject here.

Project management. In the business sector, the rapid growth in global and free-market economy has raised the necessity for businesses to develop and deliver innovative products and services with high quality, at a competitive price and fast (Diwan, 1999). It was recognised some 50 years ago that an endeavor to produce a specific outcome, within limited time and with limited resources is a *Project* and that project success demands management techniques and skills entirely different from those for managing routine operations.

Strategy formulation also spawns projects. The sets of actions to be implemented in order to achieve strategic objectives discussed earlier under strategic management are, in fact, *projects*. Implementing changes in an organisation (e.g. school improvement) is certainly a project and as such deserves a focused and systematic management approach (Phillip, 2002).

Project management is a set of systematic management process and techniques that are designed to improve the likelihood of achieving desired results within agreed timescale and budgets (Forsberg, Mooz, & Cotterman, 2000; Young, 2003). Project management focuses on the systematic planning, monitoring and control of project activities and project resources towards

achievement of specified goals (Keerkens, 2002). Business organisations from software companies to oil companies to events organisers take project management very seriously. Their profits depend heavily upon the ability not only to produce growth and improvements in business processes (akin to school improvement), but also to control risks and costs. With this in mind, it is remarkable that project management techniques have not been adopted widely in the education sector anywhere in the world!

Project management is an essential skill for modern managers operating in a dynamic environment where change is achieved through project implementation. Managers need to appreciate the conflicting nature of the key aspects of a project - scope, time and resources – and how to plan, control and balance these aspects for successful project completion. Many projects failed because the project scope has not been clearly defined and agreed by key stakeholders from the start leading to unvalidated assumptions, false expectations and finally failure to deliver the desired results. To complicate matters further, the initially defined scope often changes during the life of a project resulting in the project being late or over-budget or both. Thus scope management and change management are among the major skill areas for project managers.

Systematic scheduling of project activities and resources is essential to project management, as is the monitoring and control of project progress in terms of time, costs and delivered value (Cobb, 2003). In common with other management aspects, computer software systems – Project Management Information Systems – are now widely available to relieve project teams of these previously laborious efforts.

Project managers must also identify risks that can have adverse effects on the project, design actions to mitigate the risks as well as deciding on effective recovery plans should the risks actually materialise (Diwan, 1999; Heerkens, 2002). Knowledge management has long been implemented as an essential part of project management via project reviews, where lessons learnt were formally documented for the benefits of future projects (Barkley & Saylor, 2001; Cobb, 2003).

Over the past 25 years “school improvement” has become an industry within education. Policymakers have actively promoted “school improvement” through policies requiring schools to engage in specified processes (eg school improvement planning, school development planning) and to generate annual plans describing what will be done to improve the school’s educational processes and learning outcomes. A thriving training industry has grown up around these new policy frameworks to assist schools in implementing these processes.

Despite this persisting trend of formalised, structured school improvement planning, it is notable how most of this training is limited to “planning” and how little actually extends to project management. Moreover, while school improvement planning takes place in an environment of resource constraints, there is relatively little consideration in many schools to the cost side of the equation in their plans. Indeed even the school effectiveness literature places relatively little emphasis on costs when compared with effectiveness! Project management would improve the management of both planning and implementing school improvement projects by ensuring a more systematic review of what will be required to achieve the school’s objectives.

Project management also provides a more systematic method of identifying and developing the leadership skills of people who are not in formal leadership roles (Young, 2003). It is clear today that schools must develop the leadership capacities of more than just the school head and deputies. In project management leadership roles within the project are clearly identified as well as the accountabilities and decision-making authority of individuals. Thus project management is inherently geared towards the expansion of leadership roles and the distribution of responsibility for achieving project outcomes.

Process engineering. Operational effectiveness is one of the critical elements for any successful organisations. In an increasingly competitive marketplace, consumers are expecting offerings with higher quality and better services at competitive price, all of which can be addressed through excellent operational processes. Process efficiency is highlighted on the Balanced Scorecard as one key aspect of organisational performance. Fundamental to the ERM

concept discussed earlier are the needs for integrated, effective and efficient working processes spanning across departmental boundaries.

Such laudable objectives can only be realised through careful design of the processes to achieve set performance targets from the outset (Braganza, 2001). However, an organisation's working processes were usually implemented separately by the original operators of the processes in each department, and evolved through time rather than being created by design. The resulting operations consisted of serial processes which are labor-intensive, time-consuming, and repetitive, with unnecessary steps and long-winded approval stages, and with very little or no automation afforded through available technology (George & Rowlands, 2005). These ineffective and inefficient processes lead to poor quality products or services. Educational institutions are no exception.

Process engineering, commonly known as *Business Process Reengineering* (BPR), addresses the enhancement of business performance by improving the working processes by which the organisation delivers its products and services (Braganza, 2001). An existing organisation conducts its operations through a large number of processes, only some of which warrant reengineering. There are techniques and tools for identifying core business processes - those which are critical to accomplishing the organisation's strategy and which have a major impact on customers or key stakeholders.

As business processes typically involve people, process redesign goes hand-in-hand with changes in the way people work (Braganza, 2001). Thus it is essential to also consider change management and solutions to overcome the risks that may hinder the implementation of operational process improvement.

These core business processes are examined to identify problem areas and are redesigned with specific performance targets and performance measures. Technology now plays an important role in making working processes faster, more convenient and more efficient. At universities thousands of students can select and register on hundreds of course sections from anywhere, at anytime during a given period, and the whole process could be completed in less than half an hour. They can obtain invoices for their fees, pay through any convenient channels and the money will be deposited in the school's account with students' debts cleared – all with little or no manual intervention by the school administrators. The important issue to bear in mind is that technology is available to make school administration more effective and efficient in many ways, but school leaders must be aware of what is available and how these can be appropriately exploited.

Application of process engineering in schools will contribute to school leaders' efforts to enhance school effectiveness through improved operations, communication and staff collaboration around teaching, learning, and administration. For example, to achieve the goal of creating learner-centered schools or the goal of quality improvement will always require leaders and staff to rethink the way that education is being delivered. This is the fundamental purpose of business process reengineering.

School often engage in school improvement planning but continue to take traditional working processes for granted. BPR provides a methodology for questioning the assumptions behind current processes and asks the question: how could we manage or use this process more efficiently to achieve our goal? Application of BPR would be relevant in numerous areas of school operations:

- Management of IT support;
- Development of communication systems between school management and teachers, students, and parents;
- Design and implementation of systems for monitoring student progress towards required standards.

Decision skills. Managers in modern organisations are assuming increasing responsibility and making decisions of far-reaching consequences for the organisation. Decision-making is defined as the process through which managers identify organisational problems and attempt to solve them. Managers may not always make the right decision, but they can use their knowledge of appropriate decision-making process and their awareness of how to overcome barriers to effective decisions to increase the likelihood that their decision would be right. In the current climate of innovation, managers can also use creativity in the decision-making process to promote innovation.

A well-accepted good problem solving process involves defining the problem, generating possible solutions, evaluating and selecting a preferred solution, implementing the solution and evaluating results. A good process is necessary but not sufficient for a good outcome; results also depend on how the process is executed by the decision maker. In the past we expected managers to engage in a completely rational decision process: to possess and understand all the relevant information and the impact of all the potential outcomes (including alternatives) and to ultimately arrive at an optimal decision. This is the rational model of decision-making. However managers may not know the process, and difficulties in gathering and processing relevant information lead to non-rational decision-making and also sub-optimal decisions.

As noted elsewhere in this paper, schools are especially handicapped in meeting the demand for rational decision-making due to two conditions: goal ambiguity and unclear technologies for achieving goals (March & Olsen, 1976). In addition, managers face many challenges in effective decision-making including: accepting that the problem needs to be solved in the first place, searching for sufficient alternatives to arrive at a good solution, recognising common biases in the way people process information to form a decision, and decision escalation - dilemmas between possibilities of reversing an adverse impact from previous decisions, and of escalating commitment and accelerating losses. For good decision-making managers must be able to overcome these barriers.

Creativity in problem solving can promote innovation. As worldwide competition escalates, greater emphasis is placed on creativity in problem solving aiming to arrive at important organisation innovation.

All the aspects of decision-making discussed above apply to business managers and school leaders alike. It is beneficial to managers to be familiar with processes, models and tools that promote good decisions, to be aware of barriers and biases in decision making, to learn to be more creative in their working lives.

Decision skills training develops skills in making rational and informed decisions based on understanding the complex issues associated with decision making processes; how decisions are made; factors that affected decision outcome and quality, and that lead to irrational decisions; and how the impact of social and economic influences on decisions. It introduces tools that help to improve decision quality and therefore achieving more favorable outcomes. The training also increases skills in presenting persuasive arguments that are derived from proper data interpretation and the understanding of human decision processes.

Quality management. Quality and quality assurance have over the past decade become transformed from buzzwords to tools of accountability both in the business and education sectors. Businesses have taken quality management seriously as the primary means of increasing their competitiveness and one of the most popular definitions of quality is *meeting or exceeding customer expectation* (Bounds, York, & Adams, 1994). We view quality management as a set of systems, methods and tools that again enable the enterprise – be it a school or a company – to manage its resources more efficiently *and* effectively in order to achieve success (Goetsch, 2002; Goetsch & David, 2003).

The culture of quality management in an enterprise recognises that quality and success are achieved only through uniting all the resources and skills of the organisation. Organisations that adopt the principles of total quality understand that attention to quality must be part of its culture and management system. The focus on quality must become embedded in the visions, strategic

objectives and business plans across all departments (Jiu, 2002; Keleman, 2003). In pursuing quality, organisations have to change many aspects of their management practices:

- In strategic management business goals are quality goals and quality measures are key performance measures of the organisation.
- Customers and suppliers are viewed differently: everyone in the organisation has customers – external or internal, with expectations that must be met or exceeded through innovation and improvement; suppliers are long-term partners actively collaborating in achieving quality.
- An enterprise is a system of inter-dependent processes spanning across the traditional organisation structure; each process is connected to the enterprise mission and is specifically designed to serve the customers of the process with mechanisms that encourage teamwork and team development.
- Organisation change is necessary to respond to the inevitable external changes and management's job is to provide leadership in implementing continual improvement and innovation in processes and systems, products and services, knowledge and skills.
- Teamwork is the norm. Teams are cross-functional groups working towards system optimisation, as stakeholders in partnership with management in all aspects that affect their work processes and outcomes including organisational and individual education, training and empowerment.
- Jobs and job motivation are designed to achieve quality output through teamwork. Organisation members are process managers, not functional specialists, motivated to make contributions by managers who provide leadership without direct intervention. People are appraised and rewarded for both team and individual contributions to reinforce a spirit of cooperation and reduce the detrimental impact that individualism and competitive behavior have on teamwork.
- Management and leaders recognise people and their knowledge as the source of the enterprise's true competitive edge. People enhance an organisation's ability to succeed through their intelligence, creativity and the quality of their work. Therefore management systems provide the organisation's people with opportunities for personal development and growth, and leaders influence their behavior through shared values, beliefs and individual commitment to achieve the quality goals.

Education leaders and managers need knowledge, skills and abilities of systems, methods and tools to implement quality management. Quality management competency integrates and unifies the elements of total management discussed earlier - people (customers, suppliers and staff), leadership and strategy deployment, managing by processes and facts. This integration allows the organisation to exploit knowledge for continuous learning, innovation and improvement to deliver excellence in performance that will meet or exceed its customers' expectations.

Quality management education examines the principles of total quality (TQ) and identifies differences between TQ and traditional management practices (Goetsch, 2002). It examines the widely-adopted quality management approaches and frameworks for assessing and achieving organisational performance excellence. Total quality tools relevant to quality in education include quality systems models such as the Malcolm Baldrige Quality model and the Six Sigma approach to continuous improvement. Of particular relevance are the Malcolm Baldrige Scheme's focus on people skills and knowledge development, and its emphasis on process management. Six Sigma provides a structure and methods for continuous development and achievement of ever higher standards of excellence in all that the organisation seeks to achieve (Barkey & Saylor, 2001; George & Rowlands, 2005).

Discussion

We wish to acknowledge in advance several criticisms that will be leveled at this effort to transfer knowledge from business management to education management. First, as suggested at the outset of the paper, past efforts to formulate educational leadership preparation on the basis of business management have at times yielded programs with a relatively short shelf life and curricula with relatively little relevance to managing the education of children. This criticism, however, is not in itself a reason not to consider the utility of methods of business management as well as methods of preparing business leaders.

Second, critics will emphasise the impact that differences between business enterprises and schools should have on relevant approaches to their leadership and management. There are certainly differences that should be acknowledged and considered in assessing the utility of business management approaches. We will discuss these differences and our beliefs about how they might influence the education of school leaders.

The third focus of critiques centers on the emphasis given to management over leadership in the education, training and development of school leaders. While we have already noted the outlines of this argument, we shall also endeavor to address this concern in this section of the paper.

How do differences between schools and businesses affect their management?

The central purpose of schooling has traditionally been cultural transmission (Cuban, 1988). This is a broad purpose which itself encompasses subject learning as well as the socialisation of cultural norms, political beliefs and desired moral behaviors. Past attempts to “narrow” the purposes of schools to a single domain have failed to succeed for any length of time. The pendulum inevitably swings back towards a more balanced societal view of *what schools should do*.

In contrast, the over-riding goal of virtually any business enterprise is profit-making. While secondary goals such as social responsibility or provision of good jobs to the community are considered important by selected firms, as corporate goals they do not compete in terms of the organisation’s hierarchy of purposes. Thus, it is no doubt fundamentally easier for business organisations to define clear goals and attendant measures of goal achievement than schools.

Almost 30 years ago the renowned organisational theorist, James G. March observed the following about schools:

Educational organisations are organized anarchies. The term is used to describe organisations in which technologies are unclear, goals ambiguous, and participation fluid (March 1974a; Cohen & March, 1974; March & Olsen, 1976). Educational technology is poorly understood; asserted educational objectives tend to be vague, contradictory, or not widely shared. Participants in educational organisations include individuals and groups who move in and out of activity in the organisation sporadically. (p. 223)

Thus, measuring the output of schools is made more difficult due to the multiple, often ambiguous, and frequently changing outcomes desired by society for schools and the children who attend them. This difference in organisational purpose has numerous carryover effects on the people that inhabit schools. The “moral purpose” of schools in society does not always lend itself to management tools that seek to narrow broad visions into measurable targets (eg balanced scorecard).

Moreover, the people who work in schools tend to be motivated by the contribution of their efforts to the growth of children more than by the measurable achievement outcomes of their schools as organisations. To paraphrase Roland Barth (1986): principals and teachers seldom jump out of bed at 6:00 a.m. for the purpose of preparing, teaching and remediating students to pass

standardised achievement tests. Nor are they likely to be highly motivated by management systems that create elaborate reward structures based upon this conceptualisation of teaching.

Moreover, attempts to “tighten the linkages” between intentions, goals and actions do not always have the desired effects when applied to organisations such as schools (eg March, 1978; Rowan, 1982). For example, take the “goal” of schooling most frequently cited by education policymakers – learning achievement of students. The greater the precision with which we seek to measure this goal, the higher the likelihood that agreement on its importance will be eroded (March, 1978, p. 228). Moreover, although process has been made in identifying more effective teaching and learning methods, their impact on test scores still cannot be reliably predicted using the current technologies (i.e., teaching and curriculum) available to schools. These observations suggest that efforts to increase the efficiency of schools though laudable, should be undertaken with a clear picture of how schools differ as organisations.

Should development programs focus on leadership or management?

As noted earlier, the teaching of *management* competencies has taken a back seat to *leadership* in education over the past 20 years. Leadership has been defined as the capacity to conceptualise a vision, forge a new direction for the organisation, and motivate stakeholders to move towards that vision (Kotter, 1990). Leadership has been characterised as determining the *right things* on which the organisation will focus its resources and efforts. Education’s focus on leadership emerged in response to a widely held public perception that schools needed to change. In that context, leadership was and is still today a critical competency for school leaders (Furman, 2003).

Sixty years ago *management* was defined as the planning, coordination, organisation, and control of human, material and fiscal resources with the aim of achieving the organisation’s goals. Management has been characterised as focusing on maintaining the most efficient approaches – *the right ways* -- of achieving the goals (i.e., *the right purposes*) that have been defined. It is highly simplistic to believe that only the capacity to define the right purposes and motivate people to move towards them is sufficient in the schools of the 21st century.

In our view, these management competencies are increasingly relevant today, especially in an era of increasing accountability for education expenditures. Unfortunately, preparation and development programs in education have tended to relegate the learning of these management skills to one of two categories. They have either assumed that these “management skills” will be learned – magically -- on-the-job, or that it is enough to learn “about” them by reading a chapter in a textbook. Neither of these approaches is sufficient to attain the level of knowledge and skill mastery desired for the *efficient* and *effective* management of schools.

What are the implications of this argument for increasing the focus on managerial skill development in the educational leadership curriculum? Again we turn to James March’s insightful analysis of school administration for guidance. As an organisational theorist who had previously specialised in the study of private sector organisations, March’s (1978) perspective is especially useful in assessing the relevance of management techniques for school leader preparation.

The proposed solution is heroic but simple: . . . a training program that teaches them [prospective and practicing school leaders] how to learn from their experience, define goals clearly, and move towards achieving them straightforwardly, developing and using such skills as are necessary for the job. . .

[M]uch of the job of an educational administrator involves the mundane work of making a bureaucracy work. It is filled with activities quite distant from those implied by a conception of administration as heroic leadership. It profits from elementary competence. . .

[E]ducational administration involves many people for relatively short periods of time, loosely connected to one another. Administrative quality will be improved more rapidly by increasing the density of good administration through the system than by focusing on a small elite. . .

[A]ctivities in schools are not easily or precisely controlled through hierarchical directives or managerial incentives. Rather, educational management is controlled by the diffusion of ideas and the development of social and professional norms. (p. 232- 238)

Therefore, we answer the question posed above by asserting that both leadership and management capacities need to be developed in a broad range of people holding formal and informal positions of leadership in the education hierarchy. We further contend that neither leadership capacities such as vision development nor management skills such as project management fall within the domain of the school head alone. The ability of schools to conceptualise and define their desired future, develop strategies and staff capacities to create that future, and then act in productive ways that make the desired future a reality will require improved leadership and management capacities from a wide range of stakeholders. Indeed, management skill domains such as project management or decision skills rely explicitly on the development of skills on the part of “followers” that enable teams to reach their goals efficiently and effectively.

Conclusion

This paper has sought to define directions for school leader preparation and development. In the first section, we broadly sketched some of the important conclusions that emerge from trends that have been reported in this field internationally (Caldwell, 1998; Hallinger, 2003; Hart & Weindling, 1996; Huber 2003; Leithwood, Jantzi, & Steinbach, 1999). Our impression is that the *National College of School Leadership* is currently implementing most of the recommendations that flow from these conclusions.

More specifically, we have observed that the NCSL is:

- Focusing programs on a combination of sharing of craft knowledge and learning from shared experience with a knowledge base drawn from research and systematic study.
- Actively fostering life-long learning in practice as well as inculcating professional norms that support life-long learning as an expectation for educational professionals.
- Leading the way in the professional education of school leaders through its use of blended learning.
- Organising professional learning around expressed problems that leaders face in their schools thereby providing an active context for learning and implementation.
- Using networks and collegial coaching to provide systematic support for the transformation of new learning and new ideas into practical action.
- Using a set of standards around which to frame the learning outcomes for school leaders in their initial preparation and ongoing development.

The organisation and delivery of professional development to school leaders in England and Wales based upon the best knowledge in our field is hardly surprising. We are aware that the NCSL did its own assessment of the state-of-the-art in the field prior to formulating its own programs. Nonetheless, it is encouraging to know that the result aligns so well to independent assessments.

The second part, and bulk of the paper, was devoted to an identification and description of innovations in curricula offered today for the education and training of business leaders. We noted two key domains in which business education programs have developed significantly in recent years: management of information and management competencies. We asserted that despite differences in the purposes and organisation of schools, these developments in the education of business leaders hold relevance for educational leaders. Moreover, we noted that relatively little of this curriculum has “crossed over” into the educational leadership and management curriculum.

Indeed, we believe that the same information technology tools that have transformed the management of business enterprises over the past decade hold great relevance for schools. No less significant is the trend of business leaders learning how to use management tools that increase the efficiency of resource use directed towards achieving the corporate vision. To summarise these trends, we noted:

- The emergence of *ERM* systems and their ability to link together different information sources and departments towards the end of providing a more integrated and well-designed service to customers (i.e., students).
- The importance of *information exploitation* tools that enable organisations to manage and transform information into intelligence for better decision-making.
- The potential of *knowledge management* as a means of enabling groups of people and the school as an organisation to learn from individual and collective experience.

- The relevance of *strategic management* and the *Balanced Scorecard* as tools that can potentially boost impact of planning processes as well as assessment of progress towards improvement goals.
- The suitability of *change management*, *project management*, *quality management* and *business reengineering* as management methodologies that increase the capacity of the school to achieve the goals set out in its improvement plans more efficiently.
- The perspective that *CRM* offers to educators as a methodology that uses the learner as the center of the school and that organises around the goal of building loyalty and long-term support among stakeholders.

The relevance of these management tools for schools will have to be determined in practice. To date, we are not aware of any widespread implementation in schools. We have, however, begun including some of these tools (eg project management, information exploitation, knowledge management, change management) in our own training programs for school leaders. The response has been positive. In other cases, we have begun to adapt and use some of these tools in the management of our own college with useful results (eg project management, information exploitation, strategic management, Balanced Scorecard, quality management, change management).

In the end some of these business management tools may be more suitable for education than others. We do, however, believe that the thoughtful addition of these tools to the repertoire of school leaders and managers will be a positive development that increases the likelihood that visions and plans become a new reality for students of the future. This belief is based not only from an analysis of this literature, but also from our own work as education managers and our experiences in teaching these newer management methods to school leaders.

References

- Abrami, P., & Bures, E. (1996) Computer-supported collaborative learning and distance education. *American Journal of Distance Education*, 10(2), 37-42.
- Allee, V. (2003). *The future of knowledge: Increasing prosperity through value networks*. New York: Elsevier Science.
- Barkley, B., & Saylor, J. (2001) *Customer-driven project management: Building quality into project processes*. Second Edition, International edition. New York: McGraw-Hill.
- Barth, R. (1986). On sheep and goats and school reform. *Phi Delta Kappan*, 68(4), 293- 296.
- Barth, R. (1997). *The principal learner: A work in progress*. The International Network of Principals' Centers, Harvard Graduate School of Education, Cambridge, MA.
- Becker, B. Huselid, M., & Ulrich, D. (2001). *The HR scorecard: Linking people, strategy, and performance*. Boston, MA: Harvard Business School Press.
- Bergeron, B. (2003). *Essentials of knowledge management*. New York: John Wiley.
- Bernard, R., Abrami, P., Lou, Y., Borokhovski, E., Wade, A., Wozney, L., Walset, P., Fiset, M., & Huang, B. (2004). How does distance education compare with classroom instruction? A meta-analysis of the empirical literature. *Review of Educational Research*, 74(3), 379-440.
- Bounds, G., York, L., & Adams, M. (1994). *Beyond total quality management: Toward the emerging paradigm*. New York: McGraw-Hill.
- Braganza, A. (2001). *Radical process change: A best practice blueprint*. London: Wiley & Sons Inc.
- Brickley, J., & Smith, C. (2003). *Designing organisations to create value: From structure to strategy*. New York: McGraw-Hill,
- Bridges, E., & Hallinger, P. (1995). *Implementing problem-based leadership development*. Eugene, OR: ERIC Clearinghouse for Educational Management.
- Bridges, E. (1977). The nature of leadership. In L. Cunningham, W. Hack, and R. Nystrand (Eds.), *Educational administration: The developing decades* (202-230). Berkeley, CA: McCutchan.
- Bridges, W. (2003). *Managing transitions*. London: Nicholas Brealey Publishing.
- Buckman, R. (2004). *Building a knowledge driven organisation*. New York: McGraw Hill.
- Caldwell, B. (1998). Strategic leadership, resource management and effective school reform. *Journal of Educational Administration*, 36(5), 445-461.
- Callahan, R. (1962). *Education and the cult of efficiency*. Chicago: University of Chicago Press.
- Cobb, N. (2003). *The project management workbook: Field-proven strategies for managing your greatest asset*. New York: McGraw-Hill.
- Cooper, B. & Boyd, W. (1987). The evolution of training for school administrators. In J. Murphy & P. Hallinger (Eds.), *Approaches to administrative training in education* (pp. 3-27). Albany, NY: SUNY Press.
- Cooper, K. (2002). *The relational enterprise: Moving beyond CRM to maximize all your business relationships*. New York: Amacom.
- Copland, M. A. (2000). Problem-based learning and prospective principals' problem-framing ability. *Educational Administration Quarterly*, 36(4), 584-606.

- Crowson, R. & MacPherson, B. (1987). The legacy of the theory movement: Learning from the new tradition. In J. Murphy & P. Hallinger (Eds.), *Approaches to administrative training in education* (pp. 45- 66). Albany, NY: State University of New York Press.
- Cuban, L. (1988). *The managerial imperative and the practice of leadership in schools*, Albany, NY: State University of New York Press.
- Csikszentmihalyi, M. (2004). *Good business: Leadership, flow, and the making of meaning*. New York: Penguin.
- Davies, B. (2003). Rethinking strategy and strategic leadership in schools *Educational Management Administration Leadership*, 31, 295-312.
- Diwan, P. (1999). *Project management*. Kuala Lumpur: Golden Books.
- Drucker, P. (1995). *Managing in a time of great change*. New York: Talley House, Dutton.
- Dyche, J. (2002). *The CRM handbook: A business guide to customer relationship management*. Boston: Addison Wesley.
- Forsberg, K., Mooz, H. Cotterman, H. (2000). *Visualizing project management: A model for business and technical success* (Second Edition). New York: John Wiley & Sons.
- Fullan, M. (1993). *Change forces*. London: Falmer Press.
- Fullan, M. (1991). *The new meaning of educational change*. New York: Teachers College Press.
- Fullan, M. & Hargreaves, A. (1998). *What's worth fighting for out there*. New York: Teachers College Press.
- Furman, G. (2003). UCEA presidential address. *UCEA Review*, 45(1), 1-6.
- Garvey, B., & Williamson, B. (2002). *Beyond knowledge management: Dialogue, creativity and the corporate curriculum*. Edinburgh Gate, Harlow: Pearson Education Ltd.
- Gentle, M. (2002). *The CRM project management handbook: Building realistic expectations and managing risk*. New York: Kogan Page.
- George, M., & Rowlands, G. (2005). *The lean six sigma pocket toolbox: A quick reference guide to nearly 100 tools for improving process quality, speed, and complexity*. New York: McGraw-Hill.
- Goetsch, D. (2000). *Quality management*. Upper Saddle River, New Jersey: Pearson.
- Goetsch, D., & Davis, S. (2002) *Quality management: Introduction to total quality management for production, processing, and services (4th Edition)*. New York: Prentice Hall.
- Gorelick, C., & Milton, N. (2004). *Performance through learning: Knowledge management in practice*. Oxford, UK: Butterworth Heinemann.
- Hall, V., & Southworth, G. (1997). Headship. *School Leadership & Management*, 17(2), 151-170.
- Hallinger, P. (2003). *Reshaping the landscape of school leadership development: A global perspective*. Lisse, Netherlands: Swets & Zeitlinger.
- Hallinger, P. (1992). School leadership development: Evaluating a decade of reform. *Education and Urban Society*, 24(3), 300-316.
- Hallinger, P. & Heck, R. (1997). Exploring the principal's contribution to school effectiveness. *School Effectiveness and School Improvement*, 8(4), 1-35.
- Hallinger, P. & Heck, R. (2002). What do you call people with visions? The role of vision, mission and goals in school leadership and improvement. In K. Leithwood, P. Hallinger and Colleagues (Eds.), *The Handbook of Educational Leadership and Administration (Second Edition)*. Dordrecht: Kluwer.

- Hallinger, P. & Wimpelberg, R. (1992). New settings and changing norms for principal development. *The Urban Review*, 67(4), 1-22.
- Hart, A. & Weindling, D. (1996). Developing successful school leaders. In K. Leithwood, J. Chapman, D. Corson, P. Hallinger, & A. Hart (Eds.). *International Handbook of Educational Leadership and Administration*. Dordrecht: Kluwer Academic Publishers (309-336).
- Heerkens, G. (2002) *Project management*. New York: McGraw-Hill.
- Huber, S. (2002). School leader development: Current trends from a global perspective. In P. Hallinger (Ed.), *Reshaping the landscape of school leadership development: A global perspective*. Lisse, Netherlands: Swets & Zeitlinger.
- Jackson, S. & Hitt, M. (2003). *Managing knowledge for sustained competitive advantage: Designing strategies for effective human resource management*. San Francisco, CA: Jossey-Bass.
- Jick, T., & Peiperl, M. (2003). *Managing change: Cases and concepts*. NY: McGraw-Hill.
- Jiju, A., (2002). *Understanding managing and implementing quality: Frameworks, techniques and cases*. London: Routledge.
- Joyce, B., & Showers, B. (1983). *Power in staff development through research in training*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Joyce, B., & Showers, B. (1996). The evolution of peer coaching. *Educational Leadership*, 53(6), 12-16.
- Kaplan, R., & Norton, D. (1996). *The balanced scorecard: Translating strategy into action*. Boston, MA: Harvard Business School Press.
- Kaplan, R. (2004). *Strategy maps: Converting intangible assets into tangible outcomes*. Boston, MA: Harvard Business School Press.
- Kaufman, H. (1995). *The limits of organisational change*. New Brunswick: University of Alabama Press.
- Keleman, M. (2003). *Managing quality: Managerial and critical perspectives*. London: Sage Publications.
- Kermally, S. (2002). *Effective knowledge management: A best practice blueprint*. London: John Wiley & Sons.
- Kotter, J. (1990). *A force for change: How leadership differs from management*. New York: The Free Press.
- Kotter, J. (1996). *Leading change*. Boston, MA: Harvard Business School Press.
- Kotter, J. (2002). *The heart of change*. Boston, MA: Harvard Business School Press.
- Leithwood, K. (1994). Leadership for school restructuring. *Educational Administration Quarterly*, 30(4), pp. 498-518.
- Leithwood, K. (1996). Introduction. In K. Leithwood et al. (Eds.), In K Leithwood et al. (Ed.), *International handbook of research in educational leadership and administration*. Dordrecht: Kluwer Press.
- Leithwood, K., & Duke, D. (1999). A century's quest to understand school leadership. In J. Murphy and K. Seashore Louis (Eds.), *Handbook of Research on Educational Administration* (Second Edition.: 45-72). San Francisco: Jossey-Bass.
- Leithwood, K., Jantzi, D., (1999). Transformational leadership effects: a replication, *School Effectiveness and School Improvement*, 10(4), 451-479.

- Leithwood, K. Jantzi, D., & Steinbach, R. (1999). *Changing leaders for changing schools*. Buckingham, UK: Open University Press.
- Less, E., & Prusak, L. (2004). *Creating value with knowledge: Insights from The IBM Insititute for Business Value*. London: Oxford University Press.
- Littky, D. & Schen, M. (2002). Developing school leaders: One principal at a time. In P. Hallinger (Ed.), *Reshaping the landscape of school leadership development: A global perspective*. Lisse, Netherlands: Swets & Zeitlinger.
- March, J. G. (1978). American public school administration: A short analysis. *The School Review*, 86(2), 217-250.
- March, J., & Olsen, J. (1976). *Ambiguity and choice in organisations*. Bergen, Norway: University Press of Norway.
- Marsh, D. (1992). School Principals as instructional leaders: The impact of the California School Leadership Academy. *Education and Urban Society*, 24(3), 386-410.
- Murphy, J. (1993). *Preparing tomorrow's leaders: Alternative designs*. University Park, PA: University Council for Educational Administration.
- Murphy, J. (1992). *The landscape of leadership preparation: Reframing the education of school administrators*. Thousand Oaks, CA: Corwin Press.
- Murphy, J. (1990). The reform of school administration: Pressures and calls for change. In J. Murphy (Ed.), *The reform of American public education in the 1980's: Themes and cases*. Berkeley: McCutchan.
- Murphy, J., & Forsyth, B. P. (1999). *Educational administration: A decade of reform*. Thousand Oaks, CA: Corwin Press in collaboration with the University Council for Educational Administration.
- Murphy, J. & Shipman, N. (2002). Developing standards for school leadership development: A process and rationale. In P. Hallinger (Ed.), *Reshaping the landscape of school leadership development: A global perspective*. Lisse, Netherlands: Swets & Zeitlinger.
- Naisbitt, J. (1997). *Megatrends Asia*. London: Nicholas Brealey.
- Niven, P. (2002). *Balanced scorecard step by step: Maximizing performance and maintaining results*. New York: John Wiley & Sons.
- Ohmae, K. (1995). *The end of the nation state: The rise of regional economies*. New York: Free Press.
- Olve, N. G., Roy, J., & Wetter, M. (1999). *Performance drivers: A practical guide to using the balanced scorecard*. London: John Wiley & Sons.
- O'Toole, J. (1995). *Leading change*. San Francisco: Jossey Bass.
- Peterson, K. (1987). Research practice, and conceptual models: Underpinnings of a principals' institute. In J. Murphy & P. Hallinger (Eds.), *Approaches to administrative training in education* (pp. 181- 200). Albany, NY: State University of New York Press.
- Phillip, J. (2002) *The project management scorecard: Measuring the success of project management solutions*. New York: Elsevier Science.
- Porter, M. (1900, 1998). *The competitive advantage of nations*. New York: Palgrave.
- Rylatt, A. (2003). *Wining the knowledge game: Smarter learning for business excellence*. Burlington, MA: Butterworth-Heinmann.
- Rohwer, J. (1996). *Asia rising*. London: Nicholas Brealey Publishing.

- Rowan, B. (1982). Organisational structure and the institutional environment: The case of public schools. *Administrative Science Quarterly*, 27, 259-279.
- Sanchez, R. (2001). *Knowledge management and organisational competence*. New York: Oxford University Press.
- Schinker, S. & Roberts, L. (1987). Helping principals overcome on-the-job obstacles to learning. *Educational Leadership*, 45, 30-33.
- Senge, P. M. (1990). *The fifth discipline*. New York: Doubleday.
- Stewart, T. (1997). *Intellectual capital: The new wealth of organisations*. New York, Doubleday.
- Stewart, T. (2001). *The wealth of knowledge: Intellectual capital and the twenty-first century organisation*. London: Nicholas Brealey Publishing.
- Stoll, L. & Fink, D. (1996). *Changing our schools*. Buckingham, England: Open University Press.
- Trompenaars, F. (2004). *Managing change*. London: Capstone Publishing Ltd.
- Young, T. (1996, 2003). *The handbook of project management*. London: Kogan Page.