

## **The Management of Integrated Educational Environment Resources: the factors to be considered**

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### **Introduction**

According to Bush (2003), educational management deals with the operation of educational organisations, although there is no single generally accepted definition. Complex environmental changes and influences create continuous change in modern organisations and have given rise to new forms of organisations (Wood *et al.*, 2005; Ford *et al.*, 2007; LaFollette *et al.*, 2008). The external environment in which higher education institutions operate has also changed considerably over the last decades (DeShields Jr *et al.*, 2005). Recently, educational systems have experienced major reforms, some universal trends being ‘an emphasis on market forces and consumerism, school improvement and school effectiveness, teacher competence, etc’ (Humes, 2004).

Today, educational organisations have become large and sophisticated systems and education managers play a greater role in developing the most constructive educational environment. To provide a sustainable learning process, they deal with an assortment of organisational resources. In response to changes in the external environment, management must renew its recommendations (Ford *et al.*, 2007). As stated by Deligonul (2008), modern managers must adopt a new system view of their tangible and intangible assets; these are not only resources to be cultivated, but are fixed capital of the society; she stresses that this requires interdisciplinary approaches to solve particular problems. With the emerging challenges, education managers should take every advantage of traditional management practices, as well as new approaches to education and management to ensure a continuous quality enhancement of the educational environment.

This article analyses the strategic background for educational management in relation to creating a constructive educational environment aimed at supporting sustainable learning processes. It also describes a diversity of resources that the educational environment comprises. We propose a model of managing the educational environment resources (MMEER) to guide the distribution of resources within this multi-level system. The article stresses the need to create a motivating environment to use the intangible assets and the embodied intellectual capital of an educational institution most efficiently, student motivation being an indispensable prerequisite to enhance quality improvement and the performance of an educational organisation.

### **The Strategic Background to Educational Management**

In order to address the emerging challenges, education managers must have a clear understanding of the internal educational environment structural design and the relationships across the system, the resources they have at their disposal, the

communication scheme within the organisation, etc. Educational institutions are influenced by pressures from the external environment, including the wider educational environment (Bush, 2003). The analysis of the society — organisational environment relationships is also vital to work out the appropriate strategy. Therefore, education managers should take into consideration both external and internal *tactical determinants* — the factors that have the greatest impact on their operation.

#### *The External Environment Context*

These are the external influences which determine the way the internal resources of an organisation are distributed and used. The emerging challenges imposed by the external environment oblige education managers to initiate a number of changes as a response to the constant changes in the global environment, such as globalisation and rapid technological progress, enhanced worldwide cooperation and greater competition, greater workforce mobility and a changed international job market, new career opportunities and new threats and uncertainties, socio-cultural and demographic changes, formation of multicultural communities, society's sustainable development, etc. This leads to the emergence of new skill development drives, increased demand for higher education in relation to lifelong learning, enhanced competition between higher education institutions in order to retain and attract talent, and incorporation of the concepts of sustainability into all levels of modern education. 'Learning how to learn' and lifelong learning have become vital for the competitiveness, employability, economic prosperity, social inclusion, active citizenship and self-realisation of those who live and work in the knowledge-based economy (<http://europa.eu/scadplus/leg/en/cha/c11099.htm>).

In a Europe of Knowledge, it is crucial to give its citizens the competences to 'face the challenges of the new millennium'. Hence, higher education institutions must continuously adjust to 'changing needs, society's demands and advances in scientific knowledge' (Bologna Declaration, 1999). Developing those skills which will help graduates 'meet the challenges they will face in their careers and as members of the society' (McCuddy *et al.*, 2008) is the focus of modern higher education. Pan (2005) states that technical professionalism 'is not just about having technical competences, but it is also about mastering the principles behind business, strategy, process and people'. Therefore, higher education institutions must find ways to incorporate a multidisciplinary approach into their curricula (Shirland & Manock, 2000); it could help them to attract students by offering them a more valuable degree.

European universities must offer researchers and students a more attractive environment through the 'increasing diversification and specialisation of knowledge' in order to respond to society's major problems, including sustainable development, the new medical scourges and risk management (<http://europa.eu/scadplus/leg/en/cha/c11067.htm>). To provide multidisciplinary education, an educational institution must consider the impact of the rapidly changing external environment on the organisation and people; the educational environment must be built with clear connections with the external environment in order to address the needs of the knowledge-based economy and meet graduates' requirements.

#### *The Internal Environment Context*

This includes both a variety of material and non-material resources provided by the educational environment that are necessary for sustaining the learning process

and the relationships created within an educational organisation in the course of interaction among all learning process participants. Making the best use of the internal resources means a better match between available resources and the organisation's needs. To be effective, the educational environment must work as a highly integrated system. According to Bentley (1998), the new world organisations today demand 'horizontal integration, effective communication, trust, distributed responsibility, and high-quality management of information'. Therefore, the resources we use must be integrated and well-coordinated to produce a synergy effect. The integration of internal environment resources will lead to their more efficient use.

According to Drucker (1993), the main job of a manager is to generate a true whole that is larger than just the sum of its parts; it must be a productive entity that turns out more than the sum of the resources put into it. To achieve the required degree of educational environment synergy, education managers must administer their resources as a concordant system. The greater the integration between the resources, the more effective the performance of an organisation. This way, we can accomplish the environment's *synergy* and change quantity into quality. The study by Madi Bin Abdullah *et al.* (2008) shows that there is a significant positive linear relationship between quality improvement and organisational performance.

Another aspect of organisational performance relates to human resources. People being the most important resource available to school and college managers (Bush, 2004), human resource management plays a major role in dealing with the educational environment that is conducive to performance; Bush also emphasises that in order to sustain good performance managers must give greater attention to motivating people. Experts refer to the link between motivation and 'the high performance cycle' (Riches cited in Bush, 2004). Thus, to enhance the performance of the educational environment, education managers implement management tools which aim not only at generating and allocating the necessary resources, but also at motivating people to perform well.

### *Student Motivation*

Providing a positive motivational environment in the organisation is a prerequisite for its successful operation and development. Educational institutions are no exception. However, the education managers' task is even more complicated: they have to motivate both people working in the organisation and those who, according to Bush (2004), 'consume' educational services, directly or indirectly.

We believe that creating the environment that is conducive to teaching and learning greatly contributes to the development of the environment that is conducive to performance, *student motivation* being a key precondition for learning, and therefore a prerequisite for the quality enhancement of the educational environment. Finding ways of making learning more attractive, both within and outside the formal education and training systems and fostering a culture of learning are essential issues to improve the quality of education and training systems (<http://europa.eu/scadplus/leg/en/cha/c11086.htm>). To achieve the objectives of the *Prague Communiqué* (2001) — to promote the attractiveness of the European Higher Education Area among students in Europe and in other parts of the world and to create a constructive European Higher Education Area — we should start by developing a motivating environment in European educational institutions.

Motivation is shaped by both external and internal contexts. Badawy (2008) states that ‘organisations can’t motivate people, only people can motivate themselves, since motivation is a state of mind’; though he emphasises that we can ‘create favourable conditions that will stimulate motivation’. We should not forget that ‘extrinsic motivation comes from external factors’ (Hutchinson, 2003). Riches cited in Bush & Middlewood (2005) suggests a basic motivational model that involves needs and expectations, behaviour, goals and some form of feedback.

Motivation can be shaped by the external environment. Today, in the perspective of lifelong learning, it is vital to sustain student motivation. The main activities of an educational organisation are associated with teaching and learning. Hence, the management of the educational environment includes giving particular attention to the learners’ *needs and expectations*. It is vital to meet the needs of a constantly developing modern society; the educational institutions must become more society-oriented.

Today, the knowledge-based economy needs excellent professionals who possess a variety of skills and are able to constantly upgrade these. A university degree is becoming a proviso for a successful career; this encourages young people to achieve *ambitious goals*: to obtain an academic degree, acquire multidisciplinary skills, and participate in lifelong learning programmes to ensure constant self-development.

Motivation is also strongly influenced by the internal context. According to Bush & Middlewood (2005), *organisational factors* — conditions of service, facilities, physical resources, as well as *cultural factors* — the feeling that people believe in their organisation — have a deep impact on motivation. To encourage student motivation, we must create a constructive educational environment which will encourage students to study and simultaneously participate in social life and decision-making. This presupposes organising education in a way that involves learners in other *activities and responsibilities* apart from studying and applying both pedagogical and supporting managerial instruments when managing the educational environment. We cannot exclude students from this process. Students’ positive or negative learning experience (including social relationships within the educational environment) affects the decisions of education managers. Thus, *student feedback* is vital for developing their strategy. At the same time, we should not forget that ‘students’ desires must be balanced against the realities of the ultimate markets for the output of higher education’ (McCuddy *et al.*, 2008).

### **The Educational Environment as a Complex Multilevel Structure**

Every educational institution represents a unique educational environment which provides resources that ensure the effective performance of the organisation and support a sustainable learning process so as to guarantee the best learning opportunities for students.

An educational organisation interacts with the external environment, which is constantly changing and becoming more complex as the pace of technological progress and globalisation accelerates. Griffin (1990) characterises the external environment of an organisation as the system composed of two fundamental entities: the general environment (‘non-specific components’) including several subsystems — technological, economic, socio-cultural, political-legal, technological, etc. — and the task environment (‘specific elements of the organisation’s surroundings’) which includes customers, sponsors, partners, regulators, etc. The

task environment can be considered as ‘the target audience’ of an educational organisation; the relationships between the educational organisation and the task environment determine the organisation’s goals and objectives. The external environment has a constant impact (either direct or indirect/hidden) on the educational organisation’s internal environment; it provides the external context in which education managers operate (Fig. 1). The internal organisational

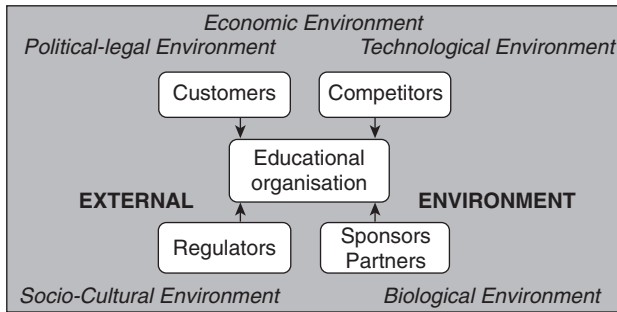


FIGURE 1. The external environment of the educational organisation

environment can also be defined as a complex structure. Hughes (2004) points out that there are many approaches to an organisational structure; each model can provide ‘significant insight in particular circumstances, but even the most sophisticated model can only provide partial enlightenment’. As stated by Mullins cited in Bush & Middlewood (2005), all organisational structures aim to achieve efficient performance, monitor the activities of the organisation, ensure accountability for various areas of work, coordinate different parts of the organisation, provide flexibility, and guarantee the social satisfaction of those in this organisation.

The description presented in this article is based on the systems theory, though it also takes into account the phenomenological view of organisations advocated by Greenfield (2004), which leads to the concept of organisations as an invented social reality. In the systems theory, organisations are seen as organisms; they are evident entities of the reality which have goals towards which they direct their activities; they react and adjust to their environments (Greenfield, 2004). An educational system is considered to be ‘a constituent of subsystems and processes’ comprising the inputs, processes and outputs; the different parts in a system operate together in order to generate a synergy (Sahney *et al.*, 2008).

The phenomenological view of organisations sees them as ‘accomplishments, as consequences of human action directed by individual will, intention and value which provide contexts for negotiation and construction of meaning, moral order, and power’ (Greenfield, 2004). However, according to Bates (2004), this does not contradict the facts of organisational reality, it just ‘interprets them in a wider context’. Educational organisations, being the most significant social institutions, cannot be considered simply as the sum of human and non-human resources. These resources come into play in various social situations. Social relationships then become a key factor for the successful operation of the organisation if they ensure the social satisfaction of those in the organisation.

Calvano & John (2004) call the 21<sup>st</sup> century ‘The Systems Century’, emphasising an unprecedented level of integration in society and the systemic nature of the modern world. An educational organisation, being an incorporated element of the global environment, is also undergoing deep changes whereby its internal environment is becoming more complex and integrated. The internal educational environment contains a diversity of subsystems which are interconnected and interdependent and function together to achieve common objectives. As stated by Montello & Wimberly (1975), such a system can be defined as a supersystem. Thus, a supersystem can be classified as a multilevel structure; its levels embrace different subsystems. At each level of the organisational system ‘different effects can be conceptualised’ (Hallinger & Heck, 2004).

Diversity, being an essential feature of modern organisations, requires creating standards of leadership and management practices. Modern organisations (an educational organisation is no exception) are defined by Allen *et al.* (2006) as ‘dynamic non-linear systems with smaller non-linear dynamic systems nested within them’; thus, management needs multiple perspectives and leadership practices that consider diversity as ‘a positive asset’ of an organisation must be used.

The educational environment of an educational organisation includes a variety of incorporated organisational resources — tangible, intangible and semi-tangible (Stukalina, 2008):

1. *Non-human resources.* These are material or *tangible* constituents with a low degree of human agent. They embrace *the physical* and *technological environment*: lecture rooms, auxiliary apartments, classrooms and laboratory equipment, etc.
2. *Informational resources.* These are *semi-tangible* constituents with a higher degree of human agent. One way or another, they are related to *information*. Informational resources embrace *the technological environment*, which is represented by organisational databases, and *the instructional environment* (regulative documents, academic programmes and curricula, teaching materials). Semi-tangible constituents represent a combination of material elements and the embodied intellectual capital.
3. *Human resources.* These are non-material or *intangible* constituents with the highest degree of human agent. We suppose that they are associated with *the psychological environment* and *the executive environment* — i.e. with the learning process’s direct execution (conducting lessons or delivering lectures). The atmosphere created in the process is related to the *processes* taking place in the educational environment, which, according to Sahney *et al.* (2008), include teaching, learning, and administration activities.

An essential characteristic of the educational environment should be its sustainability, since the latter has now become a necessity; it is likely to be the most significant factor affecting environmental efficiency. From the point of view of the learning process sustainability, the internal educational environment can be metaphorically described as a lower level complex system — the sea — in a higher level complex system — the open ocean. To guarantee sustainable development in the changing external environment, the internal environment constituents must



operate as an integrated whole; the educational environment's tangible components cannot be considered separately from the intangible and semi-intangible components. And what makes the entire system work as one piece is *the intellectual capital*.

Different researchers on intellectual capital (IC) use various definitions of this term. According to Choong (2008), most definitions state that IC is 'a non-monetary asset without physical substance' that 'possesses value or can generate future benefits'. Arenas & Lavanderos (2008) identify a group of similarities between various definitions of IC through such terms and constructs as 'intangibles', 'knowledge' and 'value creation'. According to Dawson (2000), the intellectual capital of the knowledge-based educational organisation can be described as *structural capital* — internal networks, *human capital* — 'the skills and capabilities of people in the organisation working individually or in teams', and *relationship capital* comprising relationships with customers who include students and their parents, employers, suppliers, partners, sponsors, regulators, etc. It should be mentioned that, in relation to learners, the word 'customers' is more of a metaphor used to describe the service relationship between an educational institution and students; the 'customer' metaphor is widely used today, since education is becoming much more of a service industry (DeShields Jr *et al.*, 2005), a 'product' with various customers and stakeholders who require 'satisfaction and value for money' (Sahney *et al.*, 2008).

Just as the nourishing substance and chemicals in the sea water provide the necessary stuff to support the life of the sea biomass, so the intellectual capital accumulated in the educational environment becomes the necessary 'nourishing stuff' to ensure the environment's positive educational activities and sustain the learning process (Ivanova & Stukalina, 2007). Intellectual capital also provides the link between the external and organisational environment, since the flow of resources between the external and internal environment is determined by the human factor. The capital relationship plays an important role in this process. We suppose that just as 'intellectual assets play a substantial and growing role in sustaining economic growth' (Bismuth & Tojo, 2008), so the intellectual capital of an educational organisation plays a vital role in the quality enhancement of the educational environment. We believe that it is intellectual capital that makes the educational environment more than just a sum of organisational resources (Fig. 2). It is the product of various social situations and is embodied in all organisational resources. The people of the organisation, as the intellectual capital bearers, symbolise *a social community*. Their beliefs and values and their abilities and ideas are as valuable for the organisation as physical resources. This is another high-quality level of the educational environment.

Recently, the concept of *community* has become a trendy metaphorical image, in particular the school as a learning community and one embodiment of the learning society (Humes, 2004). We regard an educational organisation as *a community of people*. These people, being the 'citizens' of the community, are united by common goals; all, including managers at all levels, teaching and attending staff, and, of course, learners are the intellectual capital bearers; they participate in knowledge delivery, knowledge exchange and new knowledge construction.

In managing a multi-level educational environment we should take into account that the complexity of this supersystem requires different managerial procedures at different levels, although they must be coordinated and well-organised.

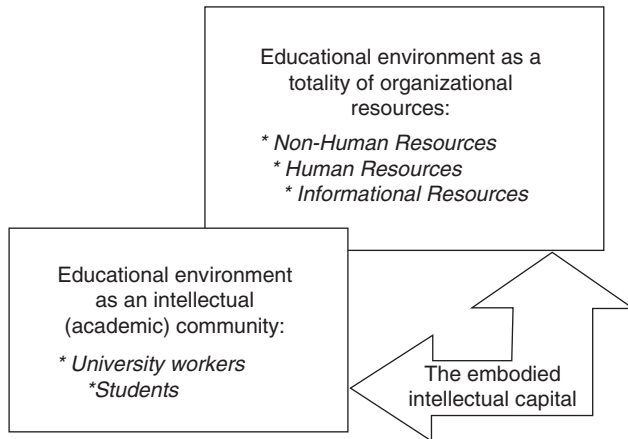


FIGURE 2. The internal educational environment: multiple layers of analysis

### **The Model of Managing the Educational Environment Resources (MMEER)**

Since the knowledge-based society is developing quickly, modern educational organisations are in the process of continuous evolution towards organised complexity; they are striving for value and excellence. Reynolds *et al.* (2004) state that school improvement is related to ‘developing strategies for educational change that strengthens the school’s organisation’. According to Miles & Eckholm cited in Fiddler (2002), ‘school improvement is a systematic, sustained effort aimed at change in learning conditions and other related internal conditions’, the final aim being to achieve educational goals more efficiently, educational goals being ‘what a school is supposed to be doing for its students and society’.

Let us assume that such a change means ensuring the quality enhancement of the educational environment. To guarantee qualitative changes in the educational environment associated with learning conditions we must create an environment that is *learner-centred*. In this environment, students are supposed to be the focus of education managers’ activities. In our view, from the educational management perspective, the management of the student-centred environment resources should aim to:

1. Allocate and coordinate the integrated educational environment resources (tangible, intangible, semi-tangible) in a way that will support the sustainable learning process and quality enhancement of an educational organisation. This demands close collaboration between everyone in the organisation, including administration, teaching staff and supporting staff as active and responsible intellectual community members. We should also give students an opportunity to participate in decision-making, involving them in the process of exchanging and sharing the intellectual capital.
2. Create the environment that is conducive to teaching and learning. In the learner-centred educational environment, work focuses on making students self-motivated learners and assisting them in constructing their own knowledge under appropriate guidance from educators. To implement



innovative pedagogical strategies, education managers must use supportive management tools that work in combination with pedagogical instruments to the greatest benefit of all learning process participants.

To address these issues we need to elaborate a special *model of managing the educational environment resources (MMEER)* to guide the allocation of resources that are needed to sustain the learning process. According to Bush (2003), educational management is frequently regarded as a set of practical activities; nevertheless, theories and concepts 'provide a framework for managerial decision'. Therefore, a theoretical model may be helpful, provided the theory is supported by the routine experience of the education manager.

Since there is an amazing variety of educational institutions, there is no single all-embracing theory for educational management (Bush, 2003). In reviewing the literature describing the models of educational management, we encountered the typology of management and leadership adapted by Bush from Bush and Glover (Bush, 2003). They distinguish between six basic educational management models linked to the corresponding leadership models: formal, collegial, political, subjective, ambiguity and cultural. Let us discuss these in order to decide which one best suits our needs.

According to Bush (2003), *formal models* are characterised by the hierarchy and expertise of the professional staff; *collegial models* presuppose that power and decision-making should be shared by some or all members of the organisation; *political models* presume that policy and decisions appear through a process of negotiation; *subjective models* focus on the perceptions of individuals rather than on the whole organisation; *ambiguity models* emphasise uncertainty and unpredictability in organisations; and *cultural models* focus on the values, beliefs and norms of those who belong to the organisation.

Each model has its advantages and limitations. The formal models with their formal structure and 'top-down' leadership decision-making have been recently criticised (Chapman cited in Bush, 2003), though Bush (*ibid.*) considers more current models also to be partial; he states that such models should not be dismissed from schools. In designing our model, we mainly used the principles of the formal model. Hence, it is more hierarchical. Besides, it possesses the basic features of *structural and systems models* (as sub-models of the formal model) described by Bush (2003); it emphasises the importance of organisational unity and integrity together with good coordination between the subsystems and efficient control on the part of managers to achieve the fixed goals.

However, to develop our model we also used the elements of other management models, since we regard the multidisciplinary approach to management as practical for responding to the multiplicity and diversity of modern society. Therefore, the proposed management model comprises some elements of *the collegial model*, because it includes decision-making as a participative process aimed at making the educational institution a harmonious and creative organisation (Bush, 2003). It also involves the main principle of *the subjective model* — the focus on the individual (in our case students and university workers) perception, though this focus is not so pronounced. We take into account the leading role of organisational assets with the embodied intellectual capital. Thus, we suppose that, being a complex multi-level structure, the educational environment demands a flexible management model which contains the elements of different theoretical models. In

this case, we will be able to deal with the educational environment as a supersystem that comprises various resources *and* the intellectual community.

The proposed model of managing the educational environment resources (MMEER) is illustrated in Fig. 3. It presumes that, during their everyday

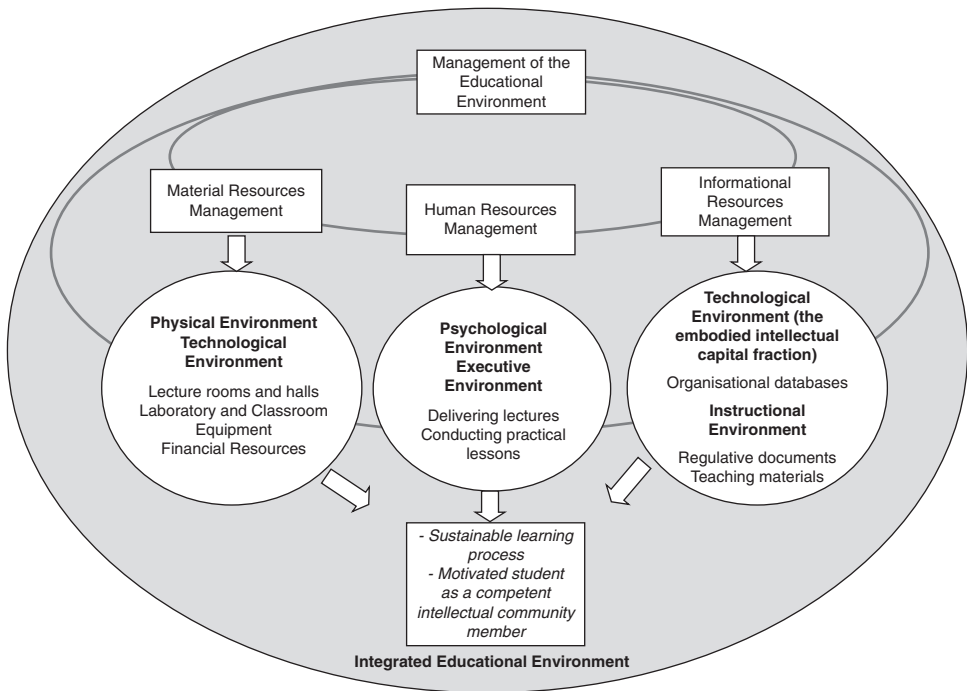


FIGURE 3. Model of Managing the Educational Environment Resources (MMEER)

interactions with the educational environment, education managers coordinate and redistribute the material, human and informational educational environment resources. These resources are associated with the four basic educational environment subsystems: (1) the physical and technological environment, (2) the instructional environment; (3) the psychological environment, and (4) the executive environment. Our model also assumes that the management of environment resources sustains the learning process and stimulates students' motivation as intellectual community members by creating a constructive educational environment that is conducive to learning and provides the necessary conditions to engage students in participative decision-making.

The basic principles of MMEER are summarised in Fig. 4. MMEER is based on the typology of management and leadership models adapted by Bush from Bush and Glover (Bush, 2003). It considers the educational environment as a multilevel supersystem with strong ties across the organisation, which includes a diversity of subsystems whose nature varies considerably throughout the supersystem. However, the integration of resources must be strong to attain the system's synergy. This supersystem is predisposed to be hierarchical; the resources are

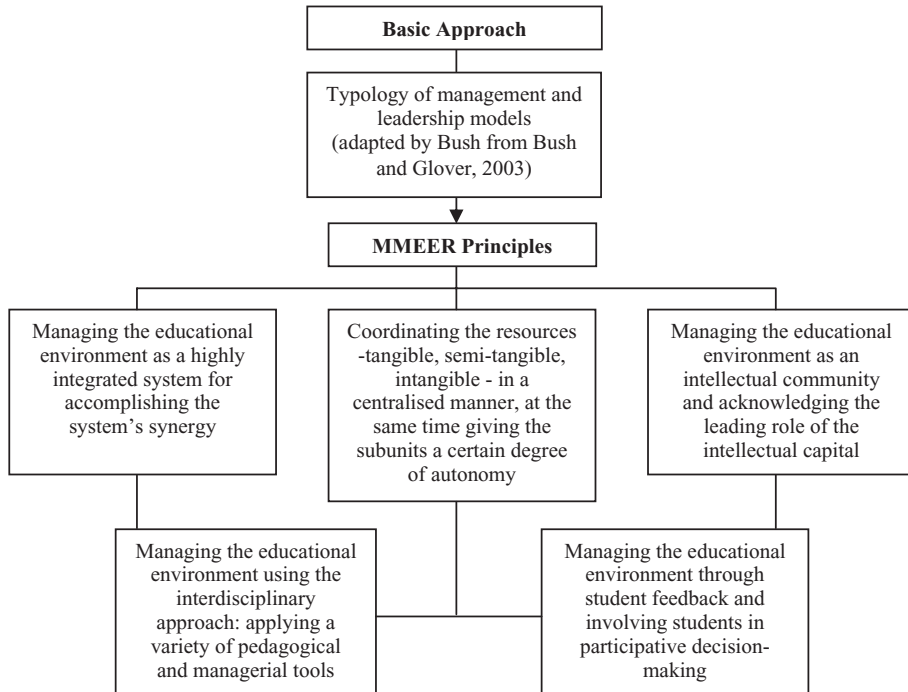


FIGURE 4. Basic principles of MMEER

coordinated in a centralised manner to ensure effective control by managers, although the organisational units should have a certain degree of autonomy because of the diverse nature of the resources they coordinate and the integrated educational environment should operate as a well-managed flexible network based on cooperation across the system. The intellectual capital embodied in the educational environment resources is a strategic intangible asset of the organisation. Education managers play a critical role in maintaining it in their routine activities.

MMEER sees an educational institution as an intellectual community united by common goals and values. It involves university workers' participation in decision-making. Students are also considered to be active community members who can contribute to the development of the organisation through participative decision-making. Cheng and Cheung (2003) stress that participative decision-making may help to build up 'a sense of ownership' among school members participating in this process, and that the resulting action plans will have a better chance of success. Hence, students' perceptions of the educational environment and their learning experience are important factors. From a pedagogical perspective, motivating students presupposes incorporating some innovative pedagogical strategies which will stimulate their desire for further studies. The integrated management practices supplement a set of pedagogical tools to be implemented in the constructive educational environment to make it more attractive. The education managers' job is to use management practices that can have positive impacts on the learning process participants and their achievements. As the educational environment resources are heterogeneous, we must make use of management tools

from various disciplines to productively manage the environment. Success will largely depend on ‘the right combination of knowledge and experiences’ (Disterer, 2002).

### **Managing the Integrated Educational Environment Resources: what management strategies should be applied?**

Educational management now attends to the questions which were traditionally dealt with by other management disciplines. The complexity of the challenges that education managers encounter every day calls for an interdisciplinary approach to solve various problems.

Today, when modern higher education institutions are ‘in the knowledge business, since they are involved in knowledge creation and dissemination and learning’ (Rowley, 2000), knowledge management instruments can be used to create a collaborative educational environment; this may lead to the enhanced knowledge environment of the educational organisation. Abdul Hamid (2008) states that school leaders must ‘cultivate competent knowledge strategies amongst their staff members to consolidate the knowledge culture in schools’. He also emphasises that schools can progress to become knowledge centres, provided the human resources are competent in their knowledge strategies.

As stated by Meroño-Cerdan *et al.* (2007), knowledge management instruments include both technological and non-technological tools; technological instruments comprise decision support technologies (e.g. artificial intelligence) and groupware (computer-based systems for internal communication such as e-mail, on-line diaries, document repositories, expert directories, video conferencing, etc); non-technological tools comprise spontaneous knowledge transfer initiatives (e.g. organising teamwork, creating social spaces for people to communicate and share their knowledge, mentoring, etc). These tools seem to help in managing the educational environment’s intangible resources associated with intellectual capital because they are used to facilitate internal communication within the organisation. This, in turn, leads to sharing information and creating knowledge, stimulating problem-solving and assisting decision-making. Since knowledge management is most practical as an integrated system bringing together many disciplines (Soliman & Spooner, 2000), education managers may use knowledge management instruments as the basis for project management, fact-based management, information management, total quality management, customer relationship management, etc.

Knowledge enhancement of the educational organisation must be accompanied by quality improvement of the educational environment. Quality is now a topic that is ‘rapidly spreading within the higher education institutions’ (Sahney *et al.*, 2008). In this context, total quality management (TQM) is an important tool that education managers have at their disposal to improve their organisations and keep up with the changes in the external environment (Töremen *et al.*, 2009). As stated by Cheng & Cheung (2003), education quality can be described using different indicators, including ‘the satisfaction of strategic constituencies’ — policy-makers, parents, teachers, students, etc’. One of the basic principles of TQM is the customer focus (Varnavas & Soteriou, 2002; Kettunen, 2008).

In higher education, the concept of customers is not clearly identified (Marzo Navarro *et al.*, 2005). However, it is indisputable that, without students, there would be no need for an educational organisation (DeShields Jr *et al.*, 2005).

At the same time, students are regarded as ‘citizens of the society (university)’ (Svensson & Wood, 2007). Since modern educational organisations have adopted marketing terminology and concepts, marketing metaphors have become common-place in the academic vocabulary. We believe that such marketing metaphors as the ‘customer’ metaphor would help us to better illustrate the multi-level relationship between the external and internal educational environments and within the internal educational environment.

The management of the educational environment presupposes finding germane data to assist in decision-making in order to make better use of the available resources and produce new resources that are necessary to sustain the learning process. It includes regular educational environment evaluation as one of the total quality control procedures. This evaluation may contain feedback from all the learning process participants. We presume that collecting and analysing student feedback are amongst the most significant activities of education managers, learner’s assessment of the educational environment quality being an efficient instrument to generate evaluative information about various aspects of the environment; these aspects are related to different organisational processes and the results of the organisation’s operation. Besides, according to Hutchinson (2003), assessments are typically ‘a strong intrinsic motivator for learners’. Thus, being responsive to students’ requirements and expectations increases their motivation for further studies. Student feedback will be taken into account when developing and revising education managers’ strategies; this way, students indirectly participate in decision-making, assuming new social responsibilities. According to Kotler and Fox (cited in DeShields Jr *et al.*, 2005), ‘treating students as partners is crucial to optimise student experience from enrolment to graduation’. By analysing the factors which shape student experience in education, managers will be able to outline which educational environment aspects have the greatest impact on student satisfaction and, as a result, on student motivation for further studies.

We assume that the evaluation of the educational environment can be seen as a way of accumulating intellectual capital. The knowledge obtained should then be stored either in regulative and instructional documents or by electronic means (in special knowledge repositories, e.g. in the intranet) so that it may be shared by the intellectual community members. Therefore, information management also plays a great role in providing knowledge accessibility in the educational environment. This, in turn, ensures the knowledge enhancement of the educational institution, since information is a powerful tool for the development and improvement of any individual and every organisation.

When sufficient information has been collected to reach meaningful conclusions, education managers will be able to make a thorough analysis of the cause-effect relationships in the educational environment. This helps them to make the most efficient use of the information so that it will lead to quality improvement of the educational environment. The analysis will show which evaluation aspect — the executive environment, the physical and technological environment, the instructional environment, and the psychological environment — needs additional support and better resources. In other words, the focus for change, according to Reynolds *et al.* (2004), should be the ‘internal conditions’ of schools: teaching-learning activities, school’s procedures, role allocation, resource use, etc. Therefore, fact-based management as an essential characteristic of TQM (Emison, 2004) can become an effective instrument for an education manager’s strategy.

By applying an assortment of integrated management practices, education managers strive to provide qualitative changes to the educational environment. This will help the educational organisation to obtain competitive advantage for its development.

### **Conclusion**

This article discussed the importance of creating a constructive student-centred educational environment that is conducive to learning, student motivation being crucial in enhancing the quality and performance of an educational organisation.

We have attempted to describe the educational environment as a complex multilevel supersystem, emphasising the leading role of intellectual capital embodied in its subsystems in achieving the environment's synergy and providing sustainable learning. Being important social institutions, educational organisations should be regarded as intellectual communities. Their 'citizens'- managers at all levels, teachers and attending staff, as well as students — are the most significant resource that educational institutions have at their disposal. As stated by Bush (2004), efficient education can only be achieved by motivating teaching and attending staff to 'deliver' high quality; we also assume we must motivate learners as competent members of an intellectual community.

In their efforts to create a motivating educational environment, education managers should take into account a number of external and internal factors that may affect their decisions. From the educational management perspective, the management of the student-centred environment resources should aim at distributing and coordinating the integrated educational environment resources to support the sustainable learning process and therefore, the sustainable development of an educational organisation. Management increasingly needs to bring into play the ideas, talents and skills of all learning process participants, together with their experience in education as the most important asset of the organisation, motivation being key to their success.

The model of managing the educational environment resources (MMEER) presented in this article provides guidance for the complex process of managing the integrated environment resources — tangible, semi-tangible and intangible. It is built on the supposition that to manage the educational environment subsystems — the physical environment, technological environment, instructional environment, psychological environment and executive environment — we use interdisciplinary approaches to solve the emerging problems. Many integrated management instruments must support novel pedagogical strategies to the greatest benefit of the participants in the learning process.

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